

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt  
SEQUENCE LISTING

<110> BASF SE

<120> Polypeptidwirkstoffe in der Form von Konjugaten aus keratinbindenden Polypeptiden, Polymeren und Effektormolekülen, Verfahren zu ihrer Herstellung und ihre Verwendung

<130> BASFPF60652PCT

<160> 170

<170> PatentIn version 3.3

<210> 1

<211> 8616

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(8616)

<400> 1

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Val Asp 210 Leu Ala Ser Val Glu 215 Gln His Ile Asn Ser 220 His Arg Gly Ile	
cac aac tcc atc ggc gac tat cgc tgg cag ctg gac aaa atc aaa gcc	720
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Asp Leu Arg Glu Lys 245 Ser Ala Ile Tyr Gln 250 Leu Glu Glu Glu Tyr 255 Glu	
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Val Leu Asn Gln 340 His Pro Ala Ser Asp 345 Lys Ile Glu Ala Tyr 350 Met Asp	
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ctg Leu	caa Gln 995	gag Glu	gct Ala	gca Ala	gat Asp	gtt Val	cat His 1000	gct Ala	cgg Arg	tac Tyr	att Ile	gaa Glu 1005	cta Leu	ctt Leu	aca Thr	3024



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gac Asp	atc Ile 1430	caa Gln	cag Gln	caa Gln	aag Lys	gcc Ala 1435	act Thr	ggc Gly	tct Ser	gag Glu	gtg Val 1440	tct Ser	cag Gln	agg Arg	4329
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Glu	Leu	Thr	Arg	Leu	Arg	Ile	Asp	Tyr	Glu	Arg	Val	Ser	Gln	Glu	
	1535					1540					1545				
agg	act	gtg	aag	gac	cag	gat	atc	acg	cgg	ttc	cag	aac	tct	ctg	4689
Arg	Thr	Val	Lys	Asp	Gln	Asp	Ile	Thr	Arg	Phe	Gln	Asn	Ser	Leu	
	1550					1555					1560				
aaa	gag	ctg	cag	ctg	cag	aag	cag	aag	gtg	gaa	gag	gag	ctg	aat	4734
Lys	Glu	Leu	Gln	Leu	Gln	Lys	Gln	Lys	Val	Glu	Glu	Glu	Leu	Asn	
	1565					1570					1575				
cgg	ctg	aag	agg	acc	gcg	tca	gaa	gac	tcc	tcg	aag	agg	aag	aag	4779
Arg	Leu	Lys	Arg	Thr	Ala	Ser	Glu	Asp	Ser	Cys	Lys	Arg	Lys	Lys	
	1580					1585					1590				
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Leu	Glu	Glu	Glu	Leu	Glu	Gly	Met	Arg	Arg	Ser	Leu	Lys	Glu	Gln	
	1595					1600					1605				
gcc	atc	aaa	atc	acc	aac	ctg	acc	cag	cag	ctg	gag	cag	gca	tcc	4869
Ala	Ile	Lys	Ile	Thr	Asn	Leu	Thr	Gln	Gln	Leu	Glu	Gln	Ala	Ser	
	1610					1615					1620				
att	gtt	aag	aag	agg	agt	gag	gat	gac	ctc	cgg	cag	cag	agg	gac	4914
Ile	Val	Lys	Lys	Arg	Ser	Glu	Asp	Asp	Leu	Arg	Gln	Gln	Arg	Asp	
	1625					1630					1635				
gtg	ctg	gat	ggc	cac	ctg	agg	gaa	aag	cag	agg	acc	cag	gaa	gag	4959
Val	Leu	Asp	Gly	His	Leu	Arg	Glu	Lys	Gln	Arg	Thr	Gln	Glu	Glu	
	1640					1645					1650				
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Leu	Arg	Arg	Leu	Ser	Ser	Glu	Val	Glu	Ala	Leu	Arg	Arg	Gln	Leu	
	1655					1660					1665				
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Leu	Gln	Glu	Gln	Glu	Ser	Val	Lys	Gln	Ala	His	Leu	Arg	Asn	Glu	
	1670					1675					1680				
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His	Phe	Gln	Lys	Ala	Ile	Glu	Asp	Lys	Ser	Arg	Ser	Leu	Asn	Glu	
	1685					1690					1695				
agc	aaa	ata	gaa	att	gag	agg	ctg	cag	tct	ctc	aca	gag	aac	ctg	5139
Ser	Lys	Ile	Glu	Ile	Glu	Arg	Leu	Gln	Ser	Leu	Thr	Glu	Asn	Leu	
	1700					1705					1710				
acc	aag	gag	cac	ttg	atg	tta	gaa	gaa	gaa	ctg	cgg	aac	ctg	agg	5184
Thr	Lys	Glu	His	Leu	Met	Leu	Glu	Glu	Glu	Leu	Arg	Asn	Leu	Arg	
	1715					1720					1725				
ctg	gag	tac	gat	gac	ctg	agg	aga	gga	cga	agc	gaa	gcg	gac	agt	5229
Leu	Glu	Tyr	Asp	Asp	Leu	Arg	Arg	Gly	Arg	Ser	Glu	Ala	Asp	Ser	
	1730					1735					1740				
gat	aaa	aat	gca	acc	atc	ttg	gaa	cta	agg	agc	cag	ctg	cag	atc	5274
Asp	Lys	Asn	Ala	Thr	Ile	Leu	Glu	Leu	Arg	Ser	Gln	Leu	Gln	Ile	
	1745					1750					1755				
agc	aac	aac	cgg	acc	ctg	gaa	ctg	cag	ggg	ctg	att	aat	gat	tta	5319
Ser	Asn	Asn	Arg	Thr	Leu	Glu	Leu	Gln	Gly	Leu	Ile	Asn	Asp	Leu	
	1760					1765					1770				
cag	aga	gag	agg	gaa	aat	ttg	aga	cag	gaa	att	gag	aaa	ttc	caa	5364
Gln	Arg	Glu	Arg	Glu	Asn	Leu	Arg	Gln	Glu	Ile	Glu	Lys	Phe	Gln	



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tcc Ser	aca Thr 2045	gtc Val	atg Met	ctt Leu	ctg Leu	gag Glu 2050	gcc Ala	cag Gln	gca Ala	gct Ala	aca Thr 2055	ggg Gly	ggg Gly	ata Ile	6174
att Ile	gat Asp 2060	ccc Pro	cat His	cgg Arg	aat Asn	gag Glu 2065	aag Lys	ctg Leu	act Thr	gtc Val	gac Asp 2070	agt Ser	gcc Ala	ata Ile	6219
gct Ala	cgg Arg 2075	gac Asp	ctc Leu	att Ile	gac Asp	ttc Phe 2080	gat Asp	gac Asp	cgt Arg	cag Gln	cag Gln 2085	ata Ile	tat Tyr	gca Ala	6264
gca Ala	gaa Glu 2090	aaa Lys	gct Ala	atc Ile	act Thr	ggg Gly 2095	ttt Phe	gat Asp	gat Asp	cca Pro	ttt Phe 2100	tca Ser	ggc Gly	aag Lys	6309
aca Thr	gta Val 2105	tct Ser	gtt Val	tca Ser	gaa Glu	gcc Ala 2110	atc Ile	aag Lys	aaa Lys	aat Asn	ttg Leu 2115	att Ile	gat Asp	aga Arg	6354
gaa Glu	acc Thr 2120	gga Gly	atg Met	cgc Arg	ctg Leu	ctg Leu 2125	gaa Glu	gcc Ala	cag Gln	att Ile	gct Ala 2130	tca Ser	ggg Gly	ggg Gly	6399
gta Val	gta Val 2135	gac Asp	cct Pro	gtg Val	aac Asn	agt Ser 2140	gtc Val	ttt Phe	ttg Leu	cca Pro	aaa Lys 2145	gat Asp	gtc Val	gcc Ala	6444
ttg Leu	gcc Ala 2150	cgg Arg	ggg Gly	ctg Leu	att Ile	gat Asp 2155	aga Arg	gat Asp	ttg Leu	tat Tyr	cga Arg 2160	tcc Ser	ctg Leu	aat Asn	6489
gat Asp	ccc Pro 2165	cga Arg	gat Asp	agt Ser	cag Gln	aaa Lys 2170	aac Asn	ttt Phe	gtg Val	gat Asp	cca Pro 2175	gtc Val	acc Thr	aaa Lys	6534
aag Lys	aag Lys 2180	gtc Val	agt Ser	tac Tyr	gtg Val	cag Gln 2185	ctg Leu	aag Lys	gaa Glu	cgg Arg	tgc Cys 2190	aga Arg	atc Ile	gaa Glu	6579
cca Pro	cat His 2195	act Thr	ggg Gly	ctg Leu	ctc Leu	ttg Leu 2200	ctt Leu	tca Ser	gta Val	cag Gln	aag Lys 2205	aga Arg	agc Ser	atg Met	6624
tcc Ser	ttc Phe 2210	caa Gln	gga Gly	atc Ile	aga Arg	caa Gln 2215	cct Pro	gtg Val	acc Thr	gtc Val	act Thr 2220	gag Glu	cta Leu	gta Val	6669
gat Asp	tct Ser 2225	ggg Gly	ata Ile	ttg Leu	aga Arg	ccg Pro 2230	tcc Ser	act Thr	gtc Val	aat Asn	gaa Glu 2235	ctg Leu	gaa Glu	tct Ser	6714
ggg Gly	cag Gln 2240	att Ile	tct Ser	tat Tyr	gac Asp	gag Glu 2245	gtt Val	ggg Gly	gag Glu	aga Arg	att Ile 2250	aag Lys	gac Asp	ttc Phe	6759
ctc Leu	cag Gln 2255	ggg Gly	tca Ser	agc Ser	tgc Cys	ata Ile 2260	gca Ala	ggc Gly	ata Ile	tac Tyr	aat Asn 2265	gag Glu	acc Thr	aca Thr	6804
aaa Lys	cag Gln 2270	aag Lys	ctt Leu	ggc Gly	att Ile	tat Tyr 2275	gag Glu	gcc Ala	atg Met	aaa Lys	att Ile 2280	ggc Gly	tta Leu	gtc Val	6849
cga Arg	cct Pro 2285	ggg Gly	act Thr	gct Ala	ctg Leu	gag Glu 2290	ttg Leu	ctg Leu	gaa Glu	gcc Ala	caa Gln 2295	gca Ala	gct Ala	act Thr	6894

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ggc Gly	ttt Phe 2300	ata Ile	gtg Val	gat Asp	cct Pro	gtt Val 2305	agc Ser	aac Asn	ttg Leu	agg Arg	tta Leu 2310	cca Pro	gtg Val	gag Glu	6939
gaa Glu	gcc Ala 2315	tac Tyr	aag Lys	aga Arg	ggg Gly	ctg Leu 2320	gtg Val	ggc Gly	att Ile	gag Glu	ttc Phe 2325	aaa Lys	gag Glu	aag Lys	6984
ctc Leu	ctg Leu 2330	tct Ser	gca Ala	gaa Glu	cga Arg	gct Ala 2335	gtc Val	act Thr	ggg Gly	tat Tyr	aat Asn 2340	gat Asp	cct Pro	gaa Glu	7029
aca Thr	gga Gly 2345	aac Asn	atc Ile	atc Ile	tct Ser	ttg Leu 2350	ttc Phe	caa Gln	gcc Ala	atg Met	aat Asn 2355	aag Lys	gaa Glu	ctc Leu	7074
atc Ile	gaa Glu 2360	aag Lys	ggc Gly	cac His	ggg Gly	att Ile 2365	cgc Arg	tta Leu	tta Leu	gaa Glu	gca Ala 2370	cag Gln	atc Ile	gca Ala	7119
acc Thr	ggg Gly 2375	ggg Gly	atc Ile	att Ile	gac Asp	cca Pro 2380	aag Lys	gag Glu	agc Ser	cat His	cgt Arg 2385	tta Leu	cca Pro	gtt Val	7164
gac Asp	ata Ile 2390	gca Ala	tat Tyr	aag Lys	agg Arg	ggc Gly 2395	tat Tyr	ttc Phe	aat Asn	gag Glu	gaa Glu 2400	ctc Leu	agt Ser	gag Glu	7209
att Ile	ctc Leu 2405	tca Ser	gat Asp	cca Pro	agt Ser	gat Asp 2410	gat Asp	acc Thr	aaa Lys	gga Gly	ttt Phe 2415	ttt Phe	gac Asp	ccc Pro	7254
aac Asn	act Thr 2420	gaa Glu	gaa Glu	aat Asn	ctt Leu	acc Thr 2425	tat Tyr	ctg Leu	caa Gln	cta Leu	aaa Lys 2430	gaa Glu	aga Arg	tgc Cys	7299
att Ile	aag Lys 2435	gat Asp	gag Glu	gaa Glu	aca Thr	ggg Gly 2440	ctc Leu	tgt Cys	ctt Leu	ctg Leu	cct Pro 2445	ctg Leu	aaa Lys	gaa Glu	7344
aag Lys	aag Lys 2450	aaa Lys	cag Gln	gtg Val	cag Gln	aca Thr 2455	tca Ser	caa Gln	aag Lys	aat Asn	acc Thr 2460	ctc Leu	agg Arg	aag Lys	7389
cgt Arg	aga Arg 2465	gtg Val	gtc Val	ata Ile	gtt Val	gac Asp 2470	cca Pro	gaa Glu	acc Thr	aat Asn	aaa Lys 2475	gaa Glu	atg Met	tct Ser	7434
gtt Val	cag Gln 2480	gag Glu	gcc Ala	tac Tyr	aag Lys	aag Lys 2485	ggc Gly	cta Leu	att Ile	gat Asp	tat Tyr 2490	gaa Glu	acc Thr	ttc Phe	7479
aaa Lys	gaa Glu 2495	ctg Leu	tgt Cys	gag Glu	cag Gln	gaa Glu 2500	tgt Cys	gaa Glu	tgg Trp	gaa Glu	gaa Glu 2505	ata Ile	acc Thr	atc Ile	7524
acg Thr	gga Gly 2510	tca Ser	gat Asp	ggc Gly	tcc Ser	acc Thr 2515	agg Arg	gtg Val	gtc Val	ctg Leu	gta Val 2520	gat Asp	aga Arg	aag Lys	7569
aca Thr	ggc Gly 2525	agt Ser	cag Gln	tat Tyr	gat Asp	att Ile 2530	caa Gln	gat Asp	gct Ala	att Ile	gac Asp 2535	aag Lys	ggc Gly	ctt Leu	7614
gtt Val	gac Asp 2540	agg Arg	aag Lys	ttc Phe	ttt Phe	gat Asp 2545	cag Gln	tac Tyr	cga Arg	tcc Ser	ggc Gly 2550	agc Ser	ctc Leu	agc Ser	7659
ctc	act	caa	ttt	gct	gac	atg	atc	tcc	ttg	aaa	aat	ggg	gtc	ggc	7704

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Leu	Thr	Gln	Phe	Ala	Asp	Met	Ile	Ser	Leu	Lys	Asn	Gly	Val	Gly		
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Thr	Ser	Ser	Ser	Met	Gly	Ser	Gly	Val	Ser	Asp	Asp	Val	Phe	Ser		
	2570					2575					2580					
agc	tcc	cga	cat	gaa	tca	gta	agt	aag	att	tcc	acc	ata	tcc	agc	7794	
Ser	Ser	Arg	His	Glu	Ser	Val	Ser	Lys	Ile	Ser	Thr	Ile	Ser	Ser		
	2585					2590					2595					
gtc	agg	aat	tta	acc	ata	agg	agc	agc	tct	ttt	tca	gac	acc	ctg	7839	
Val	Arg	Asn	Leu	Thr	Ile	Arg	Ser	Ser	Ser	Phe	Ser	Asp	Thr	Leu		
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gaa	gaa	tcg	agc	ccc	att	gca	gcc	atc	ttt	gac	aca	gaa	aac	ctg	7884	
Glu	Glu	Ser	Ser	Pro	Ile	Ala	Ala	Ile	Phe	Asp	Thr	Glu	Asn	Leu		
	2615					2620					2625					
gag	aaa	atc	tcc	att	aca	gaa	ggc	ata	gag	cgg	ggc	atc	ggt	gac	7929	
Glu	Lys	Ile	Ser	Ile	Thr	Glu	Gly	Ile	Glu	Arg	Gly	Ile	Val	Asp		
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agc	atc	acg	ggc	cag	agg	ctt	ctg	gag	gct	cag	gcc	tgc	aca	ggc	7974	
Ser	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr	Gly		
	2645					2650					2655					
ggc	atc	atc	cac	cca	acc	acg	ggc	cag	aag	ctg	tca	ctt	cag	gac	8019	
Gly	Ile	Ile	His	Pro	Thr	Thr	Gly	Gln	Lys	Leu	Ser	Leu	Gln	Asp		
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gca	gtc	tcc	cag	ggc	gtg	att	gac	caa	gac	atg	gcc	acc	agg	ctg	8064	
Ala	Val	Ser	Gln	Gly	Val	Ile	Asp	Gln	Asp	Met	Ala	Thr	Arg	Leu		
	2675					2680					2685					
aag	cct	gct	cag	aaa	gcc	ttc	ata	ggc	ttc	gag	ggc	gtg	aag	gga	8109	
Lys	Pro	Ala	Gln	Lys	Ala	Phe	Ile	Gly	Phe	Glu	Gly	Val	Lys	Gly		
	2690					2695					2700					
aag	aag	aag	atg	tca	gca	gca	gag	gca	gtg	aaa	gaa	aaa	tgg	ctc	8154	
Lys	Lys	Lys	Met	Ser	Ala	Ala	Glu	Ala	Val	Lys	Glu	Lys	Trp	Leu		
	2705					2710					2715					
ccg	tat	gag	gct	ggc	cag	cgc	ttc	ctg	gag	ttc	cag	tac	ctc	acg	8199	
Pro	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Phe	Gln	Tyr	Leu	Thr		
	2720					2725					2730					
gga	ggc	ctt	gtt	gac	ccg	gaa	gtg	cat	ggg	agg	ata	agc	acc	gaa	8244	
Gly	Gly	Leu	Val	Asp	Pro	Glu	Val	His	Gly	Arg	Ile	Ser	Thr	Glu		
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Glu	Ala	Ile	Arg	Lys	Gly	Phe	Ile	Asp	Gly	Arg	Ala	Ala	Gln	Arg		
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ctg	caa	gac	acc	agc	agc	tat	gcc	aaa	atc	ctg	acc	tgc	ccc	aaa	8334	
Leu	Gln	Asp	Thr	Ser	Ser	Tyr	Ala	Lys	Ile	Leu	Thr	Cys	Pro	Lys		
	2765					2770					2775					
acc	aaa	tta	aaa	ata	tcc	tat	aag	gat	gcc	ata	aat	cgc	tcc	atg	8379	
Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Ile	Asn	Arg	Ser	Met		
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gta	gaa	gat	atc	act	ggg	ctg	cgc	ctt	ctg	gaa	gcc	gcc	tcc	gtg	8424	
Val	Glu	Asp	Ile	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala	Ala	Ser	Val		
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tcg	tcc	aag	ggc	tta	ccc	agc	cct	tac	aac	atg	tct	tcg	gct	ccg	8469	
Ser	Ser	Lys	Gly	Leu	Pro	Ser	Pro	Tyr	Asn	Met	Ser	Ser	Ala	Pro		

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ggg tcc  cgc tcc ggc tcc cgc  tcg gga tct cgc tcc  gga tct cgc      8514
Gly Ser  Arg Ser Gly Ser Arg  Ser Gly Ser Arg Ser  Gly Ser Arg
2825                2830                2835

tcc ggg  tcc cgc agt ggg tcc  cgg aga gga agc ttt  gac gcc aca      8559
Ser Gly  Ser Arg Ser Gly Ser  Arg Arg Gly Ser Phe  Asp Ala Thr
2840                2845                2850

ggg aat  tct tcc tac tct tat  tcc tac tca ttt  agc  agt agt tct      8604
Gly Asn  Ser Ser Tyr Ser Tyr  Ser Tyr Ser Phe  Ser  Ser Ser Ser
2855                2860                2865

att ggg  cac tag
Ile Gly  His
2870

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<212> PRT
<213> Homo sapiens

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<400> 2

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Met Ile Arg Ala Glu Ser Gly Pro Asp Leu Arg Tyr Glu Val Thr Ser
20          25          30

Gly Gly Gly Gly Thr Ser Arg Met Tyr Tyr Ser Arg Arg Gly Val Ile
35          40          45

Thr Asp Gln Asn Ser Asp Gly Tyr Cys Gln Thr Gly Thr Met Ser Arg
50          55          60

His Gln Asn Gln Asn Thr Ile Gln Glu Leu Leu Gln Asn Cys Ser Asp
65          70          75          80

Cys Leu Met Arg Ala Glu Leu Ile Val Gln Pro Glu Leu Lys Tyr Gly
85          90          95

Asp Gly Ile Gln Leu Thr Arg Ser Arg Glu Leu Asp Glu Cys Phe Ala
100         105         110

Gln Ala Asn Asp Gln Met Glu Ile Leu Asp Ser Leu Ile Arg Glu Met
115         120         125

Arg Gln Met Gly Gln Pro Cys Asp Ala Tyr Gln Lys Arg Leu Leu Gln
130         135         140

Leu Gln Glu Gln Met Arg Ala Leu Tyr Lys Ala Ile Ser Val Pro Arg
145         150         155         160

Val Arg Arg Ala Ser Ser Lys Gly Gly Gly Gly Tyr Thr Cys Gln Ser
165         170         175

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Gly Ser Gly Trp Asp Glu Phe Thr Lys His Val Thr Ser Glu Cys Leu  
180 185 190

Gly Trp Met Arg Gln Gln Arg Ala Glu Met Asp Met Val Ala Trp Gly  
195 200 205

Val Asp Leu Ala Ser Val Glu Gln His Ile Asn Ser His Arg Gly Ile  
210 215 220

His Asn Ser Ile Gly Asp Tyr Arg Trp Gln Leu Asp Lys Ile Lys Ala  
225 230 235 240

Asp Leu Arg Glu Lys Ser Ala Ile Tyr Gln Leu Glu Glu Glu Tyr Glu  
245 250 255

Asn Leu Leu Lys Ala Ser Phe Glu Arg Met Asp His Leu Arg Gln Leu  
260 265 270

Gln Asn Ile Ile Gln Ala Thr Ser Arg Glu Ile Met Trp Ile Asn Asp  
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Cys Glu Glu Glu Glu Leu Leu Tyr Asp Trp Ser Asp Lys Asn Thr Asn  
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Ile Ala Gln Lys Gln Glu Ala Phe Ser Ile Arg Met Ser Gln Leu Glu  
305 310 315 320

Val Lys Glu Lys Glu Leu Asn Lys Leu Lys Gln Glu Ser Asp Gln Leu  
325 330 335

Val Leu Asn Gln His Pro Ala Ser Asp Lys Ile Glu Ala Tyr Met Asp  
340 345 350

Thr Leu Gln Thr Gln Trp Ser Trp Ile Leu Gln Ile Thr Lys Cys Ile  
355 360 365

Asp Val His Leu Lys Glu Asn Ala Ala Tyr Phe Gln Phe Phe Glu Glu  
370 375 380

Ala Gln Ser Thr Glu Ala Tyr Leu Lys Gly Leu Gln Asp Ser Ile Arg  
385 390 395 400

Lys Lys Tyr Pro Cys Asp Lys Asn Met Pro Leu Gln His Leu Leu Glu  
405 410 415

Gln Ile Lys Glu Leu Glu Lys Glu Arg Glu Lys Ile Leu Glu Tyr Lys  
420 425 430

Arg Gln Val Gln Asn Leu Val Asn Lys Ser Lys Lys Ile Val Gln Leu  
435 440 445

Lys Pro Arg Asn Pro Asp Tyr Arg Ser Asn Lys Pro Ile Ile Leu Arg  
 450 455 460

Ala Leu Cys Asp Tyr Lys Gln Asp Gln Lys Ile Val His Lys Gly Asp  
 465 470 475 480

Glu Cys Ile Leu Lys Asp Asn Asn Glu Arg Ser Lys Trp Tyr Val Thr  
 485 490 495

Gly Pro Gly Gly Val Asp Met Leu Val Pro Ser Val Gly Leu Ile Ile  
 500 505 510

Pro Pro Pro Asn Pro Leu Ala Val Asp Leu Ser Cys Lys Ile Glu Gln  
 515 520 525

Tyr Tyr Glu Ala Ile Leu Ala Leu Trp Asn Gln Leu Tyr Ile Asn Met  
 530 535 540

Lys Ser Leu Val Ser Trp His Tyr Cys Met Ile Asp Ile Glu Lys Ile  
 545 550 555 560

Arg Ala Met Thr Ile Ala Lys Leu Lys Thr Met Arg Gln Glu Asp Tyr  
 565 570 575

Met Lys Thr Ile Ala Asp Leu Glu Leu His Tyr Gln Glu Phe Ile Arg  
 580 585 590

Asn Ser Gln Gly Ser Glu Met Phe Gly Asp Asp Asp Lys Arg Lys Ile  
 595 600 605

Gln Ser Gln Phe Thr Asp Ala Gln Lys His Tyr Gln Thr Leu Val Ile  
 610 615 620

Gln Leu Pro Gly Tyr Pro Gln His Gln Thr Val Thr Thr Thr Glu Ile  
 625 630 635 640

Thr His His Gly Thr Cys Gln Asp Val Asn His Asn Lys Val Ile Glu  
 645 650 655

Thr Asn Arg Glu Asn Asp Lys Gln Glu Thr Trp Met Leu Met Glu Leu  
 660 665 670

Gln Lys Ile Arg Arg Gln Ile Glu His Cys Glu Gly Arg Met Thr Leu  
 675 680 685

Lys Asn Leu Pro Leu Ala Asp Gln Gly Ser Ser His His Ile Thr Val  
 690 695 700

Lys Ile Asn Glu Leu Lys Ser Val Gln Asn Asp Ser Gln Ala Ile Ala  
 705 710 715 720

Glu Val Leu Asn Gln Leu Lys Asp Met Leu Ala Asn Phe Arg Gly Ser  
 Seite 14

Glu Lys Tyr Cys Tyr Leu Gln Asn Glu Val Phe Gly Leu Phe Gln Lys  
740 745 750

Leu Glu Asn Ile Asn Gly Val Thr Asp Gly Tyr Leu Asn Ser Leu Cys  
755 760 765

Thr Val Arg Ala Leu Leu Gln Ala Ile Leu Gln Thr Glu Asp Met Leu  
770 775 780

Lys Val Tyr Glu Ala Arg Leu Thr Glu Glu Glu Thr Val Cys Leu Asp  
785 790 795 800

Leu Asp Lys Val Glu Ala Tyr Arg Cys Gly Leu Lys Lys Ile Lys Asn  
805 810 815

Asp Leu Asn Leu Lys Lys Ser Leu Leu Ala Thr Met Lys Thr Glu Leu  
820 825 830

Gln Lys Ala Gln Gln Ile His Ser Gln Thr Ser Gln Gln Tyr Pro Leu  
835 840 845

Tyr Asp Leu Asp Leu Gly Lys Phe Gly Glu Lys Val Thr Gln Leu Thr  
850 855 860

Asp Arg Trp Gln Arg Ile Asp Lys Gln Ile Asp Phe Arg Leu Trp Asp  
865 870 875 880

Leu Glu Lys Gln Ile Lys Gln Leu Arg Asn Tyr Arg Asp Asn Tyr Gln  
885 890 895

Ala Phe Cys Lys Trp Leu Tyr Asp Ala Lys Arg Arg Gln Asp Ser Leu  
900 905 910

Glu Ser Met Lys Phe Gly Asp Ser Asn Thr Val Met Arg Phe Leu Asn  
915 920 925

Glu Gln Lys Asn Leu His Ser Glu Ile Ser Gly Lys Arg Asp Lys Ser  
930 935 940

Glu Glu Val Gln Lys Ile Ala Glu Leu Cys Ala Asn Ser Ile Lys Asp  
945 950 955 960

Tyr Glu Leu Gln Leu Ala Ser Tyr Thr Ser Gly Leu Glu Thr Leu Leu  
965 970 975

Asn Ile Pro Ile Lys Arg Thr Met Ile Gln Ser Pro Ser Gly Val Ile  
980 985 990

Leu Gln Glu Ala Ala Asp Val His Ala Arg Tyr Ile Glu Leu Leu Thr  
995 1000 1005

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Arg	Ser	Gly	Asp	Tyr	Tyr	Arg	Phe	Leu	Ser	Glu	Met	Leu	Lys	Ser
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Leu	Glu	Asp	Leu	Lys	Leu	Lys	Asn	Thr	Lys	Ile	Glu	Val	Leu	Glu
	1025					1030					1035			
Glu	Glu	Leu	Arg	Leu	Ala	Arg	Asp	Ala	Asn	Ser	Glu	Asn	Cys	Asn
	1040					1045					1050			
Lys	Asn	Lys	Phe	Leu	Asp	Gln	Asn	Leu	Gln	Lys	Tyr	Gln	Ala	Glu
	1055					1060					1065			
Cys	Ser	Gln	Phe	Lys	Ala	Lys	Leu	Ala	Ser	Leu	Glu	Glu	Leu	Lys
	1070					1075					1080			
Arg	Gln	Ala	Glu	Leu	Asp	Gly	Lys	Ser	Ala	Lys	Gln	Asn	Leu	Asp
	1085					1090					1095			
Lys	Cys	Tyr	Gly	Gln	Ile	Lys	Glu	Leu	Asn	Glu	Lys	Ile	Thr	Arg
	1100					1105					1110			
Leu	Thr	Tyr	Glu	Ile	Glu	Asp	Glu	Lys	Arg	Arg	Arg	Lys	Ser	Val
	1115					1120					1125			
Glu	Asp	Arg	Phe	Asp	Gln	Gln	Lys	Asn	Asp	Tyr	Asp	Gln	Leu	Gln
	1130					1135					1140			
Lys	Ala	Arg	Gln	Cys	Glu	Lys	Glu	Asn	Leu	Gly	Trp	Gln	Lys	Leu
	1145					1150					1155			
Glu	Ser	Glu	Lys	Ala	Ile	Lys	Glu	Lys	Glu	Tyr	Glu	Ile	Glu	Arg
	1160					1165					1170			
Leu	Arg	Val	Leu	Leu	Gln	Glu	Glu	Gly	Thr	Arg	Lys	Arg	Glu	Tyr
	1175					1180					1185			
Glu	Asn	Glu	Leu	Ala	Lys	Val	Arg	Asn	His	Tyr	Asn	Glu	Glu	Met
	1190					1195					1200			
Ser	Asn	Leu	Arg	Asn	Lys	Tyr	Glu	Thr	Glu	Ile	Asn	Ile	Thr	Lys
	1205					1210					1215			
Thr	Thr	Ile	Lys	Glu	Ile	Ser	Met	Gln	Lys	Glu	Asp	Asp	Ser	Lys
	1220					1225					1230			
Asn	Leu	Arg	Asn	Gln	Leu	Asp	Arg	Leu	Ser	Arg	Glu	Asn	Arg	Asp
	1235					1240					1245			
Leu	Lys	Asp	Glu	Ile	Val	Arg	Leu	Asn	Asp	Ser	Ile	Leu	Gln	Ala
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PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Thr	Glu	Gln	Arg	Arg	Arg	Ala	Glu	Glu	Asn	Ala	Leu	Gln	Gln	Lys
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Ala	Cys	Gly	Ser	Glu	Ile	Met	Gln	Lys	Lys	Gln	His	Leu	Glu	Ile
	1280					1285					1290			
Glu	Leu	Lys	Gln	Val	Met	Gln	Gln	Arg	Ser	Glu	Asp	Asn	Ala	Arg
	1295					1300					1305			
His	Lys	Gln	Ser	Leu	Glu	Glu	Ala	Ala	Lys	Thr	Ile	Gln	Asp	Lys
	1310					1315					1320			
Asn	Lys	Glu	Ile	Glu	Arg	Leu	Lys	Ala	Glu	Phe	Gln	Glu	Glu	Ala
	1325					1330					1335			
Lys	Arg	Arg	Trp	Glu	Tyr	Glu	Asn	Glu	Leu	Ser	Lys	Val	Arg	Asn
	1340					1345					1350			
Asn	Tyr	Asp	Glu	Glu	Ile	Ile	Ser	Leu	Lys	Asn	Gln	Phe	Glu	Thr
	1355					1360					1365			
Glu	Ile	Asn	Ile	Thr	Lys	Thr	Thr	Ile	His	Gln	Leu	Thr	Met	Gln
	1370					1375					1380			
Lys	Glu	Glu	Asp	Thr	Ser	Gly	Tyr	Arg	Ala	Gln	Ile	Asp	Asn	Leu
	1385					1390					1395			
Thr	Arg	Glu	Asn	Arg	Ser	Leu	Ser	Glu	Glu	Ile	Lys	Arg	Leu	Lys
	1400					1405					1410			
Asn	Thr	Leu	Thr	Gln	Thr	Thr	Glu	Asn	Leu	Arg	Arg	Val	Glu	Glu
	1415					1420					1425			
Asp	Ile	Gln	Gln	Gln	Lys	Ala	Thr	Gly	Ser	Glu	Val	Ser	Gln	Arg
	1430					1435					1440			
Lys	Gln	Gln	Leu	Glu	Val	Glu	Leu	Arg	Gln	Val	Thr	Gln	Met	Arg
	1445					1450					1455			
Thr	Glu	Glu	Ser	Val	Arg	Tyr	Lys	Gln	Ser	Leu	Asp	Asp	Ala	Ala
	1460					1465					1470			
Lys	Thr	Ile	Gln	Asp	Lys	Asn	Lys	Glu	Ile	Glu	Arg	Leu	Lys	Gln
	1475					1480					1485			
Leu	Ile	Asp	Lys	Glu	Thr	Asn	Asp	Arg	Lys	Cys	Leu	Glu	Asp	Glu
	1490					1495					1500			
Asn	Ala	Arg	Leu	Gln	Arg	Val	Gln	Tyr	Asp	Leu	Gln	Lys	Ala	Asn
	1505					1510					1515			

Ser Ser Ala Thr Glu Thr Ile Asn Lys Leu Lys Val Gln Glu Gln  
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Glu Leu Thr Arg Leu Arg Ile Asp Tyr Glu Arg Val Ser Gln Glu  
1535 1540 1545

Arg Thr Val Lys Asp Gln Asp Ile Thr Arg Phe Gln Asn Ser Leu  
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Lys Glu Leu Gln Leu Gln Lys Gln Lys Val Glu Glu Glu Leu Asn  
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Arg Leu Lys Arg Thr Ala Ser Glu Asp Ser Cys Lys Arg Lys Lys  
1580 1585 1590

Leu Glu Glu Glu Leu Glu Gly Met Arg Arg Ser Leu Lys Glu Gln  
1595 1600 1605

Ala Ile Lys Ile Thr Asn Leu Thr Gln Gln Leu Glu Gln Ala Ser  
1610 1615 1620

Ile Val Lys Lys Arg Ser Glu Asp Asp Leu Arg Gln Gln Arg Asp  
1625 1630 1635

Val Leu Asp Gly His Leu Arg Glu Lys Gln Arg Thr Gln Glu Glu  
1640 1645 1650

Leu Arg Arg Leu Ser Ser Glu Val Glu Ala Leu Arg Arg Gln Leu  
1655 1660 1665

Leu Gln Glu Gln Glu Ser Val Lys Gln Ala His Leu Arg Asn Glu  
1670 1675 1680

His Phe Gln Lys Ala Ile Glu Asp Lys Ser Arg Ser Leu Asn Glu  
1685 1690 1695

Ser Lys Ile Glu Ile Glu Arg Leu Gln Ser Leu Thr Glu Asn Leu  
1700 1705 1710

Thr Lys Glu His Leu Met Leu Glu Glu Glu Leu Arg Asn Leu Arg  
1715 1720 1725

Leu Glu Tyr Asp Asp Leu Arg Arg Gly Arg Ser Glu Ala Asp Ser  
1730 1735 1740

Asp Lys Asn Ala Thr Ile Leu Glu Leu Arg Ser Gln Leu Gln Ile  
1745 1750 1755

Ser Asn Asn Arg Thr Leu Glu Leu Gln Gly Leu Ile Asn Asp Leu  
1760 1765 1770

Gln Arg Glu Arg Glu Asn Leu Arg Gln Glu Ile Glu Lys Phe Gln

1775

1780

1785

Lys Gln Ala Leu Glu Ala Ser Asn Arg Ile Gln Glu Ser Lys Asn  
1790 1795 1800

Gln Cys Thr Gln Val Val Gln Glu Arg Glu Ser Leu Leu Val Lys  
1805 1810 1815

Ile Lys Val Leu Glu Gln Asp Lys Ala Arg Leu Gln Arg Leu Glu  
1820 1825 1830

Asp Glu Leu Asn Arg Ala Lys Ser Thr Leu Glu Ala Glu Thr Arg  
1835 1840 1845

Val Lys Gln Arg Leu Glu Cys Glu Lys Gln Gln Ile Gln Asn Asp  
1850 1855 1860

Leu Asn Gln Trp Lys Thr Gln Tyr Ser Arg Lys Glu Glu Ala Ile  
1865 1870 1875

Arg Lys Ile Glu Ser Glu Arg Glu Lys Ser Glu Arg Glu Lys Asn  
1880 1885 1890

Ser Leu Arg Ser Glu Ile Glu Arg Leu Gln Ala Glu Ile Lys Arg  
1895 1900 1905

Ile Glu Glu Arg Cys Arg Arg Lys Leu Glu Asp Ser Thr Arg Glu  
1910 1915 1920

Thr Gln Ser Gln Leu Glu Thr Glu Arg Ser Arg Tyr Gln Arg Glu  
1925 1930 1935

Ile Asp Lys Leu Arg Gln Arg Pro Tyr Gly Ser His Arg Glu Thr  
1940 1945 1950

Gln Thr Glu Cys Glu Trp Thr Val Asp Thr Ser Lys Leu Val Phe  
1955 1960 1965

Asp Gly Leu Arg Lys Lys Val Thr Ala Met Gln Leu Tyr Glu Cys  
1970 1975 1980

Gln Leu Ile Asp Lys Thr Thr Leu Asp Lys Leu Leu Lys Gly Lys  
1985 1990 1995

Lys Ser Val Glu Glu Val Ala Ser Glu Ile Gln Pro Phe Leu Arg  
2000 2005 2010

Gly Ala Gly Ser Ile Ala Gly Ala Ser Ala Ser Pro Lys Glu Lys  
2015 2020 2025

Tyr Ser Leu Val Glu Ala Lys Arg Lys Lys Leu Ile Ser Pro Glu  
2030 2035 2040

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Ser	Thr	Val	Met	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Gly	Ile
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Ile	Asp	Pro	His	Arg	Asn	Glu	Lys	Leu	Thr	Val	Asp	Ser	Ala	Ile
	2060					2065					2070			
Ala	Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Gln	Gln	Ile	Tyr	Ala
	2075					2080					2085			
Ala	Glu	Lys	Ala	Ile	Thr	Gly	Phe	Asp	Asp	Pro	Phe	Ser	Gly	Lys
	2090					2095					2100			
Thr	Val	Ser	Val	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu	Ile	Asp	Arg
	2105					2110					2115			
Glu	Thr	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Ser	Gly	Gly
	2120					2125					2130			
Val	Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys	Asp	Val	Ala
	2135					2140					2145			
Leu	Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg	Ser	Leu	Asn
	2150					2155					2160			
Asp	Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro	Val	Thr	Lys
	2165					2170					2175			
Lys	Lys	Val	Ser	Tyr	Val	Gln	Leu	Lys	Glu	Arg	Cys	Arg	Ile	Glu
	2180					2185					2190			
Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys	Arg	Ser	Met
	2195					2200					2205			
Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr	Glu	Leu	Val
	2210					2215					2220			
Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	Leu	Glu	Ser
	2225					2230					2235			
Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	Lys	Asp	Phe
	2240					2245					2250			
Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	Glu	Thr	Thr
	2255					2260					2265			
Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly	Leu	Val
	2270					2275					2280			
Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr
	2285					2290					2295			



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Gly Phe Ile Val Asp Pro Val Ser Asn Leu Arg Leu Pro Val Glu  
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Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe Lys Glu Lys  
2315 2320 2325

Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp Pro Glu  
2330 2335 2340

Thr Gly Asn Ile Ile Ser Leu Phe Gln Ala Met Asn Lys Glu Leu  
2345 2350 2355

Ile Glu Lys Gly His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala  
2360 2365 2370

Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His Arg Leu Pro Val  
2375 2380 2385

Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu Leu Ser Glu  
2390 2395 2400

Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro  
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Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg Cys  
2420 2425 2430

Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
2435 2440 2445

Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys  
2450 2455 2460

Arg Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser  
2465 2470 2475

Val Gln Glu Ala Tyr Lys Lys Gly Leu Ile Asp Tyr Glu Thr Phe  
2480 2485 2490

Lys Glu Leu Cys Glu Gln Glu Cys Glu Trp Glu Glu Ile Thr Ile  
2495 2500 2505

Thr Gly Ser Asp Gly Ser Thr Arg Val Val Leu Val Asp Arg Lys  
2510 2515 2520

Thr Gly Ser Gln Tyr Asp Ile Gln Asp Ala Ile Asp Lys Gly Leu  
2525 2530 2535

Val Asp Arg Lys Phe Phe Asp Gln Tyr Arg Ser Gly Ser Leu Ser  
2540 2545 2550

Leu Thr Gln Phe Ala Asp Met Ile Ser Leu Lys Asn Gly Val Gly  
2555 2560 2565

Thr Ser Ser Ser Met Gly Ser Gly Val Ser Asp Asp Val Phe Ser  
2570 2575 2580

Ser Ser Arg His Glu Ser Val Ser Lys Ile Ser Thr Ile Ser Ser  
2585 2590 2595

Val Arg Asn Leu Thr Ile Arg Ser Ser Ser Phe Ser Asp Thr Leu  
2600 2605 2610

Glu Glu Ser Ser Pro Ile Ala Ala Ile Phe Asp Thr Glu Asn Leu  
2615 2620 2625

Glu Lys Ile Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val Asp  
2630 2635 2640

Ser Ile Thr Gly Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr Gly  
2645 2650 2655

Gly Ile Ile His Pro Thr Thr Gly Gln Lys Leu Ser Leu Gln Asp  
2660 2665 2670

Ala Val Ser Gln Gly Val Ile Asp Gln Asp Met Ala Thr Arg Leu  
2675 2680 2685

Lys Pro Ala Gln Lys Ala Phe Ile Gly Phe Glu Gly Val Lys Gly  
2690 2695 2700

Lys Lys Lys Met Ser Ala Ala Glu Ala Val Lys Glu Lys Trp Leu  
2705 2710 2715

Pro Tyr Glu Ala Gly Gln Arg Phe Leu Glu Phe Gln Tyr Leu Thr  
2720 2725 2730

Gly Gly Leu Val Asp Pro Glu Val His Gly Arg Ile Ser Thr Glu  
2735 2740 2745

Glu Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg Ala Ala Gln Arg  
2750 2755 2760

Leu Gln Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr Cys Pro Lys  
2765 2770 2775

Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg Ser Met  
2780 2785 2790

Val Glu Asp Ile Thr Gly Leu Arg Leu Leu Glu Ala Ala Ser Val  
2795 2800 2805

Ser Ser Lys Gly Leu Pro Ser Pro Tyr Asn Met Ser Ser Ala Pro

2810

2815

2820

Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg  
2825 2830 2835

Ser Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr  
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Gly Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser Ser  
2855 2860 2865

Ile Gly His  
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tcc ttc caa gga atc aga caa cct gtg acc gtc act gag cta gta gat	96
Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp	
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tct ggt ata ttg aga ccg tcc act gtc aat gaa ctg gaa tct ggt cag	144
Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln	
35 40 45	
att tct tat gac gag gtt ggt gag aga att aag gac ttc ctc cag ggt	192
Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly	
50 55 60	
tca agc tgc ata gca ggc ata tac aat gag acc aca aaa cag aag ctt	240
Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu	
65 70 75 80	
ggc att tat gag gcc atg aaa att ggc tta gtc cga cct ggt act gct	288
Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala	
85 90 95	
ctg gag ttg ctg gaa gcc caa gca gct act ggc ttt ata gtg gat cct	336
Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro	
100 105 110	
gtt agc aac ttg agg tta cca gtg gag gaa gcc tac aag aga ggt ctg	384
Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu	
115 120 125	
gtg ggc att gag ttc aaa gag aag ctc ctg tct gca gaa cga gct gtc	432
Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val	
130 135 140	
act ggg tat aat gat cct gaa aca gga aac atc atc tct ttg ttc caa	480
Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln	
145 150 155 160	

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gcc atg aat aag gaa ctc atc gaa aag ggc cac ggt att cgc tta tta	528
Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu	
165 170 175	
gaa gca cag atc gca acc ggg ggg atc att gac cca aag gag agc cat	576
Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His	
180 185 190	
cgt tta cca gtt gac ata gca tat aag agg ggc tat ttc aat gag gaa	624
Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu	
195 200 205	
ctc agt gag att ctc tca gat cca agt gat gat acc aaa gga ttt ttt	672
Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe	
210 215 220	
gac ccc aac act gaa gaa aat ctt acc tat ctg caa cta aaa gaa aga	720
Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg	
225 230 235 240	
tgc att aag gat gag gaa aca ggg ctc tgt ctt ctg cct ctg aaa gaa	768
Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu	
245 250 255	
aag aag aaa cag gtg cag aca tca caa aag aat acc ctc agg aag cgt	816
Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys Arg	
260 265 270	
aga gtg gtc ata gtt gac cca gaa acc aat aaa gaa atg tct gtt cag	864
Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser Val Gln	
275 280 285	
gag	867
Glu	

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Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln	
35 40 45	
Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly	
50 55 60	
Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu	
65 70 75 80	
Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala	
85 90 95	

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
100 105 110

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
115 120 125

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
130 135 140

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
145 150 155 160

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
165 170 175

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
180 185 190

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
195 200 205

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
210 215 220

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
225 230 235 240

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
245 250 255

Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys Arg  
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Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser Val Gln  
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tcc ttc caa gga atc aga caa cct gtg acc gtc act gag cta gta gat 96  
Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
Seite 25

tct ggt ata ttg aga ccg tcc act gtc aat gaa ctg gaa tct ggt cag Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln 35 40 45	144
att tct tat gac gag gtt ggt gag aga att aag gac ttc ctc cag ggt Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly 50 55 60	192
tca agc tgc ata gca ggc ata tac aat gag acc aca aaa cag aag ctt Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu 65 70 75 80	240
ggc att tat gag gcc atg aaa att ggc tta gtc cga cct ggt act gct Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala 85 90 95	288
ctg gag ttg ctg gaa gcc caa gca gct act ggc ttt ata gtg gat cct Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro 100 105 110	336
gtt agc aac ttg agg tta cca gtg gag gaa gcc tac aag aga ggt ctg Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu 115 120 125	384
gtg ggc att gag ttc aaa gag aag ctc ctg tct gca gaa cga gct gtc Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val 130 135 140	432
act ggg tat aat gat cct gaa aca gga aac atc atc tct ttg ttc caa Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln 145 150 155 160	480
gcc atg aat aag gaa ctc atc gaa aag ggc cac ggt att cgc tta tta Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu 165 170 175	528
gaa gca cag atc gca acc ggg ggg atc att gac cca aag gag agc cat Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His 180 185 190	576
cgt tta cca gtt gac ata gca tat aag agg ggc tat ttc aat gag gaa Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu 195 200 205	624
ctc agt gag att ctc tca gat cca agt gat gat acc aaa gga ttt ttt Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe 210 215 220	672
gac ccc aac act gaa gaa aat ctt acc tat ctg caa cta aaa gaa aga Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg 225 230 235 240	720
tgc att aag gat gag gaa aca ggg ctc tgt ctt ctg cct ctg aaa gaa Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu 245 250 255	768

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Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
35 40 45

Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
50 55 60

Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
65 70 75 80

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
85 90 95

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
100 105 110

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
115 120 125

Val Gly Ile Glu Phe Lys Gly Lys Leu Leu Ser Ala Glu Arg Ala Val  
130 135 140

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
145 150 155 160

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
165 170 175

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
180 185 190

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
195 200 205

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
210 215 220

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
225 230 235 240

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
245 250 255

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<212> DNA  
<213> Homo sapiens

<220>  
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&lt;400&gt; 7

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1 5 10 15	
tct ggt ata ttg aga ccg tcc act gtc aat gaa ctg gaa tct ggt cag	96
Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln	
20 25 30	
att tct tat gac gag gtt ggt gag aga att aag gac ttc ctc cag ggt	144
Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly	
35 40 45	
tca agc tgc ata gca ggc ata tac aat gag acc aca aaa cag aag ctt	192
Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu	
50 55 60	
ggc att tat gag gcc atg aaa att ggc tta gtc cga cct ggt act gct	240
Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala	
65 70 75 80	
ctg gag ttg ctg gaa gcc caa gca gct act ggc ttt ata gtg gat cct	288
Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro	
85 90 95	
gtt agc aac ttg agg tta cca gtg gag gaa gcc tac aag aga ggt ctg	336
Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu	
100 105 110	
gtg ggc att gag ttc aaa gag aag ctc ctg tct gca gaa cga gct gtc	384
Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val	
115 120 125	
act ggg tat aat gat cct gaa aca gga aac atc atc tct ttg ttc caa	432
Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln	
130 135 140	
gcc atg aat aag gaa ctc atc gaa aag ggc cac ggt att cgc tta tta	480
Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu	
145 150 155 160	
gaa gca cag atc gca acc ggg ggg atc att gac cca aag gag agc cat	528
Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His	
165 170 175	
cgt tta cca gtt gac ata gca tat aag agg ggc tat ttc aat gag gaa	576
Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu	
180 185 190	
ctc agt gag att ctc tca gat cca agt gat gat acc aaa gga ttt ttt	624
Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe	
195 200 205	
gac ccc aac act gaa gaa aat ctt acc tat ctg caa cta aaa gaa aga	672
Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg	
210 215 220	
tgc att aag gat gag gaa aca ggg ctc tgt ctt ctg cct ctg aaa gaa	720
Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu	
225 230 235 240	

&lt;210&gt; 8

&lt;211&gt; 240

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens



&lt;400&gt; 8

Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
 1 5 10 15

Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
 20 25 30

Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
 35 40 45

Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
 50 55 60

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
 65 70 75 80

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
 85 90 95

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
 100 105 110

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
 115 120 125

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
 130 135 140

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
 145 150 155 160

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
 165 170 175

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
 180 185 190

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
 195 200 205

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
 210 215 220

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
 225 230 235 240

&lt;210&gt; 9

&lt;211&gt; 798

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

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<221> CDS  
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1                               5          10          15

atc ttt gac aca gaa aac ctg gag aaa atc tcc att aca gaa ggt ata      96
Ile Phe Asp Thr Glu Asn Leu Glu Lys Ile Ser Ile Thr Glu Gly Ile
                               20          25          30

gag cgg ggc atc gtt gac agc atc acg ggt cag agg ctt ctg gag gct      144
Glu Arg Gly Ile Val Asp Ser Ile Thr Gly Gln Arg Leu Leu Glu Ala
                               35          40          45

cag gcc tgc aca ggt ggc atc atc cac cca acc acg ggc cag aag ctg      192
Gln Ala Cys Thr Gly Gly Ile Ile His Pro Thr Thr Gly Gln Lys Leu
                               50          55          60

tca ctt cag gac gca gtc tcc cag ggt gtg att gac caa gac atg gcc      240
Ser Leu Gln Asp Ala Val Ser Gln Gly Val Ile Asp Gln Asp Met Ala
65                               70          75          80

acc agg ctg aag cct gct cag aaa gcc ttc ata ggc ttc gag ggt gtg      288
Thr Arg Leu Lys Pro Ala Gln Lys Ala Phe Ile Gly Phe Glu Gly Val
                               85          90          95

aag gga aag aag aag atg tca gca gca gag gca gtg aaa gaa aaa tgg      336
Lys Gly Lys Lys Lys Met Ser Ala Ala Glu Ala Val Lys Glu Lys Trp
                               100          105          110

ctc ccg tat gag gct ggc cag cgc ttc ctg gag ttc cag tac ctc acg      384
Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu Glu Phe Gln Tyr Leu Thr
                               115          120          125

gga ggt ctt gtt gac ccg gaa gtg cat ggg agg ata agc acc gaa gaa      432
Gly Gly Leu Val Asp Pro Glu Val His Gly Arg Ile Ser Thr Glu Glu
                               130          135          140

gcc atc cgg aag ggg ttc ata gat ggc cgc gcc gca cag agg ctg caa      480
Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg Ala Ala Gln Arg Leu Gln
145                               150          155          160

gac acc agc agc tat gcc aaa atc ctg acc tgc ccc aaa acc aaa tta      528
Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr Cys Pro Lys Thr Lys Leu
                               165          170          175

aaa ata tcc tat aag gat gcc ata aat cgc tcc atg gta gaa gat atc      576
Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg Ser Met Val Glu Asp Ile
                               180          185          190

act ggg ctg cgc ctt ctg gaa gcc gcc tcc gtg tcg tcc aag ggc tta      624
Thr Gly Leu Arg Leu Leu Glu Ala Ala Ser Val Ser Ser Lys Gly Leu
                               195          200          205

ccc agc cct tac aac atg tct tcg gct ccg ggg tcc cgc tcc ggc tcc      672
Pro Ser Pro Tyr Asn Met Ser Ser Ala Pro Gly Ser Arg Ser Gly Ser
                               210          215          220

cgc tcg gga tct cgc tcc gga tct cgc tcc ggg tcc cgc agt ggg tcc      720
Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser
225                               230          235          240

cgg aga gga agc ttt gac gcc aca ggg aat tct tcc tac tct tat tcc      768
Arg Arg Gly Ser Phe Asp Ala Thr Gly Asn Ser Ser Tyr Ser Tyr Ser
                               245          250          255

tac tca ttt agc agt agt tct att ggg cac
Seite 30
798

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Tyr Ser Phe Ser Ser Ser Ile Gly His  
260 265

<210> 10  
<211> 266  
<212> PRT  
<213> Homo sapiens

<400> 10

Ser Ser Ser Phe Ser Asp Thr Leu Glu Glu Ser Ser Pro Ile Ala Ala  
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Ile Phe Asp Thr Glu Asn Leu Glu Lys Ile Ser Ile Thr Glu Gly Ile  
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Glu Arg Gly Ile Val Asp Ser Ile Thr Gly Gln Arg Leu Leu Glu Ala  
35 40 45

Gln Ala Cys Thr Gly Gly Ile Ile His Pro Thr Thr Gly Gln Lys Leu  
50 55 60

Ser Leu Gln Asp Ala Val Ser Gln Gly Val Ile Asp Gln Asp Met Ala  
65 70 75 80

Thr Arg Leu Lys Pro Ala Gln Lys Ala Phe Ile Gly Phe Glu Gly Val  
85 90 95

Lys Gly Lys Lys Lys Met Ser Ala Ala Glu Ala Val Lys Glu Lys Trp  
100 105 110

Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu Glu Phe Gln Tyr Leu Thr  
115 120 125

Gly Gly Leu Val Asp Pro Glu Val His Gly Arg Ile Ser Thr Glu Glu  
130 135 140

Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg Ala Ala Gln Arg Leu Gln  
145 150 155 160

Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr Cys Pro Lys Thr Lys Leu  
165 170 175

Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg Ser Met Val Glu Asp Ile  
180 185 190

Thr Gly Leu Arg Leu Leu Glu Ala Ala Ser Val Ser Ser Lys Gly Leu  
195 200 205

Pro Ser Pro Tyr Asn Met Ser Ser Ala Pro Gly Ser Arg Ser Gly Ser  
210 215 220

Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Arg Ser Gly Ser  
225 230 235 240

Arg Arg Gly Ser Phe Asp Ala Thr Gly Asn Ser Ser Tyr Ser Tyr Ser  
245 250 255

Tyr Ser Phe Ser Ser Ser Ser Ile Gly His  
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<211> 768  
<212> DNA  
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<220>  
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<222> (1)..(768)

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	tcc att aca gaa ggt ata gag cgg ggc atc gtt gac agc atc acg ggt	96
	Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val Asp Ser Ile Thr Gly	
	20 25 30	
	cag agg ctt ctg gag gct cag gcc tgc aca ggt ggc atc atc cac cca	144
	Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr Gly Gly Ile Ile His Pro	
	35 40 45	
	acc acg ggc cag aag ctg tca ctt cag gac gca gtc tcc cag ggt gtg	192
	Thr Thr Gly Gln Lys Leu Ser Leu Gln Asp Ala Val Ser Gln Gly Val	
	50 55 60	
	att gac caa gac atg gcc acc agg ctg aag cct gct cag aaa gcc ttc	240
	Ile Asp Gln Asp Met Ala Thr Arg Leu Lys Pro Ala Gln Lys Ala Phe	
	65 70 75 80	
	ata ggc ttc gag ggt gtg aag gga aag aag atg tca gca gca gag	288
	Ile Gly Phe Glu Gly Val Lys Gly Lys Lys Lys Met Ser Ala Ala Glu	
	85 90 95	
	gca gtg aaa gaa aaa tgg ctc ccg tat gag gct ggc cag cgc ttc ctg	336
	Ala Val Lys Glu Lys Trp Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu	
	100 105 110	
	gag ttc cag tac ctc acg gga ggt ctt gtt gac ccg gaa gtg cat ggg	384
	Glu Phe Gln Tyr Leu Thr Gly Gly Leu Val Asp Pro Glu Val His Gly	
	115 120 125	
	agg ata agc acc gaa gaa gcc atc cgg aag ggg ttc ata gat ggc cgc	432
	Arg Ile Ser Thr Glu Glu Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg	
	130 135 140	
	gcc gca cag agg ctg caa gac acc agc agc tat gcc aaa atc ctg acc	480
	Ala Ala Gln Arg Leu Gln Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr	
	145 150 155 160	
	tgc ccc aaa acc aaa tta aaa ata tcc tat aag gat gcc ata aat cgc	528
	Cys Pro Lys Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg	
	165 170 175	
	tcc atg gta gaa gat atc act ggg ctg cgc ctt ctg gaa gcc gcc tcc	576
	Ser Met Val Glu Asp Ile Thr Gly Leu Arg Leu Leu Glu Ala Ala Ser	
	180 185 190	

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gtg	tcc	aag	ggc	tta	ccc	agc	cct	tac	aac	atg	tct	tcg	gct	ccg	624
Val	Ser	Lys	Gly	Leu	Pro	Ser	Pro	Tyr	Asn	Met	Ser	Ser	Ala	Pro	
		195				200					205				
ggg	tcc	cgc	tcc	ggc	tcc	cgc	tcg	gga	tct	cgc	tcc	gga	tct	cgc	672
Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg	
	210					215					220				
ggg	tcc	cgc	agt	ggg	tcc	cgg	aga	gga	agc	ttt	gac	gcc	aca	ggg	720
Gly	Ser	Arg	Ser	Gly	Ser	Arg	Arg	Gly	Ser	Phe	Asp	Ala	Thr	Gly	
	225					230				235				Asn	240
tct	tcc	tac	tct	tat	tcc	tac	tca	ttt	agc	agt	agt	tct	att	ggg	768
Ser	Ser	Tyr	Ser	Tyr	Ser	Tyr	Ser	Phe	Ser	Ser	Ser	Ser	Ile	Gly	
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Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr	Gly	Gly	Ile	Ile	His	Pro
		35					40					45			
Thr	Thr	Gly	Gln	Lys	Leu	Ser	Leu	Gln	Asp	Ala	Val	Ser	Gln	Gly	Val
		50				55					60				
Ile	Asp	Gln	Asp	Met	Ala	Thr	Arg	Leu	Lys	Pro	Ala	Gln	Lys	Ala	Phe
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Ile	Gly	Phe	Glu	Gly	Val	Lys	Gly	Lys	Lys	Lys	Met	Ser	Ala	Ala	Glu
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Ala	Val	Lys	Glu	Lys	Trp	Leu	Pro	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu
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Glu	Phe	Gln	Tyr	Leu	Thr	Gly	Gly	Leu	Val	Asp	Pro	Glu	Val	His	Gly
		115					120					125			
Arg	Ile	Ser	Thr	Glu	Glu	Ala	Ile	Arg	Lys	Gly	Phe	Ile	Asp	Gly	Arg
	130					135					140				
Ala	Ala	Gln	Arg	Leu	Gln	Asp	Thr	Ser	Ser	Tyr	Ala	Lys	Ile	Leu	Thr
	145				150					155				160	
Cys	Pro	Lys	Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Ile	Asn	Arg
				165					170					175	
Ser	Met	Val	Glu	Asp	Ile	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala	Ala	Ser

Val Ser Ser Lys Gly Leu Pro Ser Pro Tyr Asn Met Ser Ser Ala Pro  
195 200 205

Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser  
210 215 220

Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr Gly Asn  
225 230 235 240

Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser Ser Ile Gly His  
245 250 255

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<211> 588  
<212> DNA  
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tcc att aca gaa ggt ata gag cgg ggc atc gtt gac agc atc acg ggt 96  
Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val Asp Ser Ile Thr Gly  
20 25 30  
cag agg ctt ctg gag gct cag gcc tgc aca ggt ggc atc atc cac cca 144  
Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr Gly Gly Ile Ile His Pro  
35 40 45  
acc acg ggc cag aag ctg tca ctt cag gac gca gtc tcc cag ggt gtg 192  
Thr Thr Gly Gln Lys Leu Ser Leu Gln Asp Ala Val Ser Gln Gly Val  
50 55 60  
att gac caa gac atg gcc acc agg ctg aag cct gct cag aaa gcc ttc 240  
Ile Asp Gln Asp Met Ala Thr Arg Leu Lys Pro Ala Gln Lys Ala Phe  
65 70 75 80  
ata ggc ttc gag ggt gtg aag gga aag aag aag atg tca gca gca gag 288  
Ile Gly Phe Glu Gly Val Lys Gly Lys Lys Lys Met Ser Ala Ala Glu  
85 90 95  
gca gtg aaa gaa aaa tgg ctc ccg tat gag gct ggc cag cgc ttc ctg 336  
Ala Val Lys Glu Lys Trp Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu  
100 105 110  
gag ttc cag tac ctc acg gga ggt ctt gtt gac ccg gaa gtg cat ggg 384  
Glu Phe Gln Tyr Leu Thr Gly Gly Leu Val Asp Pro Glu Val His Gly  
115 120 125  
agg ata agc acc gaa gaa gcc atc cgg aag ggg ttc ata gat ggc cgc 432  
Arg Ile Ser Thr Glu Glu Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg  
130 135 140  
gcc gca cag agg ctg caa gac acc agc agc tat gcc aaa atc ctg acc 480  
Ala Ala Gln Arg Leu Gln Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr  
145 150 155 160

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165 170 175

tcc atg gta gaa gat atc act ggg ctg cgc ctt ctg gaa gcc gcc tcc 576  
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180 185 190

gtg tcg tcc aag 588  
Val Ser Ser Lys  
195

<210> 14  
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<212> PRT  
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Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val Asp Ser Ile Thr Gly  
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35 40 45

Thr Thr Gly Gln Lys Leu Ser Leu Gln Asp Ala Val Ser Gln Gly Val  
50 55 60

Ile Asp Gln Asp Met Ala Thr Arg Leu Lys Pro Ala Gln Lys Ala Phe  
65 70 75 80

Ile Gly Phe Glu Gly Val Lys Gly Lys Lys Lys Met Ser Ala Ala Glu  
85 90 95

Ala Val Lys Glu Lys Trp Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu  
100 105 110

Glu Phe Gln Tyr Leu Thr Gly Gly Leu Val Asp Pro Glu Val His Gly  
115 120 125

Arg Ile Ser Thr Glu Glu Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg  
130 135 140

Ala Ala Gln Arg Leu Gln Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr  
145 150 155 160

Cys Pro Lys Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg  
165 170 175

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180 185 190

Val Ser Ser Lys  
195

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<220>  
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<222> (1)..(12186)

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1                               5                               10          15

caa tat tca aaa aaa gat aaa aac act gac aca ttg agt aaa aaa gag      96
Gln Tyr Ser Lys Lys Asp Lys Asn Thr Asp Thr Leu Ser Lys Lys Glu
                               20                               25          30

ctg aag gaa ctt ctg gaa aag gaa ttt cgg caa atc ctg aag aat cca      144
Leu Lys Glu Leu Leu Glu Lys Glu Phe Arg Gln Ile Leu Lys Asn Pro
                               35                               40          45

gat gac cca gat atg gtt gat gtc ttc atg gat cac ttg gat ata gac      192
Asp Asp Pro Asp Met Val Asp Val Phe Met Asp His Leu Asp Ile Asp
                               50                               55          60

cac aac aag aaa att gac ttc act gag ttt ctt ctg atg gta ttc aag      240
His Asn Lys Lys Ile Asp Phe Thr Glu Phe Leu Leu Met Val Phe Lys
65                               70                               75          80

ttg gct caa gca tat tat gag tct acc aga aaa gag aat tta ccg ata      288
Leu Ala Gln Ala Tyr Tyr Glu Ser Thr Arg Lys Glu Asn Leu Pro Ile
                               85                               90          95

tca gga cac aag cac aga aag cac agt cat cat gat aaa cat gaa gat      336
Ser Gly His Lys His Arg Lys His Ser His His Asp Lys His Glu Asp
                               100                              105          110

aat aaa cag gaa gaa aac aaa gaa aac aga aaa aga ccc tca agt ctg      384
Asn Lys Gln Glu Glu Asn Lys Glu Asn Arg Lys Arg Pro Ser Ser Leu
                               115                              120          125

gaa aga aga aac aat aga aaa ggg aat aag gga aga tcc aag agc cca      432
Glu Arg Arg Asn Asn Arg Lys Gly Asn Lys Gly Arg Ser Lys Ser Pro
                               130                              135          140

aga gaa aca ggg ggg aaa agg cat gaa tct agt tct gaa aaa aaa gaa      480
Arg Glu Thr Gly Gly Lys Arg His Glu Ser Ser Ser Glu Lys Lys Glu
145                              150                              155          160

aga aaa gga tat tca cct act cat aga gaa gaa gaa tat gga aaa aac      528
Arg Lys Gly Tyr Ser Pro Thr His Arg Glu Glu Glu Tyr Gly Lys Asn
                               165                              170          175

cat cat aac tca agt aaa aaa gag aaa aac aag act gaa aat act aga      576
His His Asn Ser Ser Lys Lys Glu Lys Asn Lys Lys Thr Glu Asn Thr Arg
                               180                              185          190

tta gga gac aat agg aag agg cta agt gaa aga ctt gaa gag aaa gaa      624
Leu Gly Asp Asn Arg Lys Arg Leu Ser Glu Arg Leu Glu Glu Lys Glu
                               195                              200          205

gac aat gaa gaa gga gta tat gat tat gaa aat aca gga aga atg act      672
Asp Asn Glu Glu Gly Val Tyr Asp Tyr Glu Asn Thr Gly Arg Met Thr

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## 220

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cag Gln	gac Asp	acc Thr 515	att Ile	cgt Arg	gga Gly	cac His	ccg Pro 520	ggg Gly	tca Ser	agc Ser	aga Arg	gga Gly 525	gga Gly	agg Arg	cag Gln	1584
gga Gly 530	tcc Ser	cac His	cac His	gag Glu	caa Gln	tcg Ser 535	gta Val	aat Asn	agg Arg	tct Ser	gga Gly 540	cac His	tca Ser	ggt Gly	tcc Ser	1632
cat His 545	cac His	agc Ser	cac His	acc Thr	aca Thr 550	tcc Ser	cag Gln	gga Gly	agg Arg	tct Ser 555	gat Asp	gcc Ala	tcc Ser	cat His	ggg Gly 560	1680
cag Gln	tca Ser	gga Gly	tcc Ser	aga Arg 565	agt Ser	gca Ala	agc Ser	aga Arg	caa Gln 570	aca Thr	cga Arg	aat Asn	gag Glu	gaa Glu 575	caa Gln	1728
tca Ser	gga Gly	gac Asp	ggc Gly 580	acc Thr	agg Arg	cac His	tca Ser	ggg Gly 585	tca Ser	cgt Arg	cat His	cat His	gaa Glu 590	gct Ala	tcc Ser	1776
tct Ser	cag Gln	gct Ala 595	gac Asp	agc Ser	tct Ser	aga Arg	cac His 600	tca Ser	cag Gln	gtg Val	ggc Gly	cag Gln 605	gga Gly	caa Gln	tca Ser	1824
tcg Ser 610	ggg Gly	ccc Pro	agg Arg	aca Thr	agt Ser	agg Arg 615	aac Asn	cag Gln	gga Gly	tcc Ser	agt Ser 620	gtt Val	agc Ser	cag Gln	gac Asp	1872
agt Ser 625	gac Asp	agt Ser	cag Gln	gga Gly	cac His 630	tca Ser	gaa Glu	gac Asp	tct Ser	gag Glu 635	agg Arg	tgg Trp	tct Ser	ggg Gly	tct Ser 640	1920
gct Ala	tcc Ser	aga Arg	aac Asn	cat His 645	cat His	gga Gly	tct Ser	gct Ala	cag Gln 650	gag Glu	cag Gln	tca Ser	aga Arg	gat Asp 655	ggc Gly	1968
tcc Ser	aga Arg	cac His	ccc Pro 660	agg Arg	tcc Ser	cat His	cac His	gaa Glu 665	gac Asp	aga Arg	gct Ala	ggt Gly	cat His 670	ggg Gly	cac His	2016
tct Ser	gca Ala	gac Asp 675	agc Ser	tcc Ser	aga Arg	aaa Lys	tca Ser 680	ggc Gly	act Thr	cgt Arg	cac His	aca Thr 685	cag Gln	aat Asn	tcc Ser	2064
tct Ser 690	agt Ser	gga Gly	cag Gln	gct Ala	gcg Ala	tca Ser 695	tcc Ser	cat His	gaa Glu	cag Gln	gca Ala 700	aga Arg	tca Ser	agt Ser	gca Ala	2112
gga Gly 705	gaa Glu	aga Arg	cat His	gga Gly	tcc Ser 710	cgc Arg	cac His	cag Gln	ctc Leu	cag Gln 715	tca Ser	gca Ala	gac Asp	agc Ser	tcc Ser 720	2160
aga Arg	cac His	tca Ser	ggc Gly	act Thr 725	ggg Gly	cac His	gga Gly	caa Gln	gct Ala 730	tca Ser	tct Ser	gca Ala	gtc Val	aga Arg 735	gac Asp	2208
agt Ser	gga Gly	cac His	cga Arg 740	ggg Gly	tcc Ser	agt Ser	ggt Gly	agt Ser 745	cag Gln	gcc Ala	act Thr	gac Asp	agt Ser 750	gag Glu	gga Gly	2256
cat His	tca Ser	gaa Glu 755	gac Asp	tca Ser	gac Asp	aca Thr	cag Gln 760	tca Ser	gtg Val	tca Ser	ggc Gly	cat His 765	gga Gly	cag Gln	gct Ala	2304

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ggt Gly	cac His	cat His	cag Gln	cag Gln	agc Ser	cac His	caa Gln	gag Glu	tcc Ser	gca Ala	cgt Arg	gac Asp	cgg Arg	tca Ser	ggg Gly	2352
770						775					780					
gaa Glu	agg Arg	tct Ser	cga Arg	cgt Arg	tca Ser	ggg Gly	tct Ser	ttc Phe	ctc Leu	tac Tyr	cag Gln	gtg Val	agc Ser	act Thr	cat His	2400
785					790					795					800	
aaa Lys	cag Gln	tct Ser	gag Glu	tcc Ser	tcc Ser	cat His	gga Gly	tgg Trp	aca Thr	ggg Gly	ccc Pro	agc Ser	act Thr	gga Gly	gta Val	2448
				805					810					815		
aga Arg	caa Gln	gga Gly	tcc Ser	cac His	cat His	gag Glu	cag Gln	gca Ala	cga Arg	gac Asp	aac Asn	tcc Ser	agg Arg	cac His	tca Ser	2496
			820					825					830			
gca Ala	tcc Ser	caa Gln	gat Asp	ggt Gly	cag Gln	gac Asp	acc Thr	att Ile	cgt Arg	gga Gly	cac His	ccg Pro	ggg Gly	tca Ser	agc Ser	2544
		835					840					845				
aga Arg	aga Arg	gga Gly	agg Arg	cag Gln	ggg Gly	tcc Ser	cac His	cac His	gag Glu	caa Gln	tcg Ser	gta Val	gat Asp	agg Arg	tct Ser	2592
	850					855					860					
gga Gly	cac His	tca Ser	ggg Gly	tcc Ser	cat His	cac His	agc Ser	cac His	acc Thr	aca Thr	tcc Ser	cag Gln	gga Gly	agg Arg	tct Ser	2640
865					870					875					880	
gat Asp	gcc Ala	tcc Ser	cgt Arg	ggg Gly	cag Gln	tca Ser	gga Gly	tcc Ser	aga Arg	agt Ser	gca Ala	agc Ser	aga Arg	aca Thr	aca Thr	2688
				885					890					895		
cgt Arg	aat Asn	gag Glu	gaa Glu	caa Gln	tca Ser	aga Arg	gac Asp	ggc Gly	tcc Ser	agg Arg	cac His	tca Ser	ggg Gly	tca Ser	cgt Arg	2736
			900					905					910			
cac His	cat His	gaa Glu	gct Ala	tcc Ser	tct Ser	cat His	gcc Ala	gac Asp	atc Ile	tct Ser	aga Arg	cac His	tca Ser	cag Gln	gca Ala	2784
		915					920					925				
ggc Gly	cag Gln	gga Gly	caa Gln	tca Ser	gag Glu	ggg Gly	tcc Ser	agg Arg	aca Thr	agc Ser	agg Arg	cgc Arg	cag Gln	gga Gly	tcc Ser	2832
	930					935					940					
agt Ser	gtt Val	agc Ser	cag Gln	gac Asp	agt Ser	gac Asp	agt Ser	gag Glu	gga Gly	cat His	tca Ser	gaa Glu	gac Asp	tct Ser	gag Glu	2880
945					950					955					960	
agg Arg	tgg Trp	tct Ser	ggg Gly	tct Ser	gct Ala	tcc Ser	aga Arg	aac Asn	cat His	cgt Arg	gga Gly	tct Ser	gct Ala	cag Gln	gag Glu	2928
				965					970					975		
cag Gln	tca Ser	aga Arg	cat His	ggc Gly	tcc Ser	aga Arg	cac His	ccc Pro	agg Arg	tcc Ser	cat His	cac His	gaa Glu	gac Asp	aga Arg	2976
			980					985					990			
gcc Ala	ggt Gly	cac His	ggg Gly	cac His	tct Ser	gca Ala	gac Asp	agc Ser	tcc Ser	aga Arg	caa Gln	tca Ser	gga Gly	act Thr	cct Pro	3024
		995					1000					1005				
cac His	gca Ala	gag Glu	act Thr	tcc Ser	tct Ser	ggt Gly	gga Gly	cag Gln	gct Ala	gcg Ala	tca Ser	tcc Ser	cat His	gaa Glu		3069
	1010					1015					1020					
cag Gln	gca Ala	aga Arg	tca Ser	agt Ser	cca Pro	gga Gly	gaa Glu	aga Arg	cac His	gga Gly	tcc Ser	cgc Arg	cac His	cag Gln		3114
	1025					1030					1035					
cag Gln	tca Ser	gca Ala	gac Asp	agc Ser	tcc Ser	aga Arg	cac His	tca Ser	ggc Gly	att Thr	ccg Arg	cgc Arg	aga Arg	caa Gln		3159

Gln	Ser	Ala	Asp	Ser	Ser	Arg	His	Ser	Gly	Ile	Pro	Arg	Arg	Gln	
1040						1045					1050				
gct	tca	tct	gca	gtc	aga	gac	agt	gga	cac	tgg	ggg	tcc	agt	ggt	3204
Ala	Ser	Ser	Ala	Val	Arg	Asp	Ser	Gly	His	Trp	Gly	Ser	Ser	Gly	
1055						1060					1065				
agt	cag	gcc	agt	gat	agt	gag	gga	cat	tca	gag	gag	tca	gac	aca	3249
Ser	Gln	Ala	Ser	Asp	Ser	Glu	Gly	His	Ser	Glu	Glu	Ser	Asp	Thr	
1070						1075					1080				
cag	tca	gtg	tca	ggc	cat	gga	cag	gat	ggg	ccc	cat	cag	cag	agc	3294
Gln	Ser	Val	Ser	Gly	His	Gly	Gln	Asp	Gly	Pro	His	Gln	Gln	Ser	
1085						1090					1095				
cac	caa	gag	tcc	gca	cgt	gac	tgg	tca	ggg	gga	agg	tct	gga	cgt	3339
His	Gln	Glu	Ser	Ala	Arg	Asp	Trp	Ser	Gly	Gly	Arg	Ser	Gly	Arg	
1100						1105					1110				
tca	ggg	tct	ttc	atc	tac	cag	gtg	agc	act	cat	gaa	cag	tct	gag	3384
Ser	Gly	Ser	Phe	Ile	Tyr	Gln	Val	Ser	Thr	His	Glu	Gln	Ser	Glu	
1115						1120					1125				
tct	gcc	cat	ggg	cgg	acc	agg	acc	agc	act	gga	cga	aga	caa	gga	3429
Ser	Ala	His	Gly	Arg	Thr	Arg	Thr	Ser	Thr	Gly	Arg	Arg	Gln	Gly	
1130						1135					1140				
tcc	cac	cac	gag	cag	gca	cga	gac	agc	tcc	agg	cac	tca	gcg	tcc	3474
Ser	His	His	Glu	Gln	Ala	Arg	Asp	Ser	Ser	Arg	His	Ser	Ala	Ser	
1145						1150					1155				
caa	gag	ggt	cag	gac	acc	att	cgt	gca	cac	ccg	ggg	tca	agg	aga	3519
Gln	Glu	Gly	Gln	Asp	Thr	Ile	Arg	Ala	His	Pro	Gly	Ser	Arg	Arg	
1160						1165					1170				
gga	gga	agg	cag	gga	tcc	cac	cat	gag	caa	tcg	gta	gat	aga	tct	3564
Gly	Gly	Arg	Gln	Gly	Ser	His	His	Glu	Gln	Ser	Val	Asp	Arg	Ser	
1175						1180					1185				
gga	cac	tca	ggg	tcc	cat	cac	agc	cac	acc	aca	tcc	cag	gga	agg	3609
Gly	His	Ser	Gly	Ser	His	His	Ser	His	Thr	Thr	Ser	Gln	Gly	Arg	
1190						1195					1200				
tct	gat	gcc	tcc	cat	ggg	cag	tca	gga	tcc	aga	agt	gca	agc	aga	3654
Ser	Asp	Ala	Ser	His	Gly	Gln	Ser	Gly	Ser	Arg	Ser	Ala	Ser	Arg	
1205						1210					1215				
caa	act	cgt	aag	gac	aaa	caa	tca	gga	gac	ggc	tcc	agg	cac	tca	3699
Gln	Thr	Arg	Lys	Asp	Lys	Gln	Ser	Gly	Asp	Gly	Ser	Arg	His	Ser	
1220						1225					1230				
ggg	tca	cgt	cac	cat	gaa	gct	gcc	tct	tgg	gct	gac	agc	tct	aga	3744
Gly	Ser	Arg	His	His	Glu	Ala	Ala	Ser	Trp	Ala	Asp	Ser	Ser	Arg	
1235						1240					1245				
cac	tca	cag	gtg	gga	cag	gaa	caa	tca	tcg	ggg	tcc	agg	aca	agc	3789
His	Ser	Gln	Val	Gly	Gln	Glu	Gln	Ser	Ser	Gly	Ser	Arg	Thr	Ser	
1250						1255					1260				
agg	cac	cag	gga	tcc	agt	gtt	agc	cag	gac	agt	gac	agt	gag	aga	3834
Arg	His	Gln	Gly	Ser	Ser	Val	Ser	Gln	Asp	Ser	Asp	Ser	Glu	Arg	
1265						1270					1275				
cac	tca	gac	gac	tcc	gag	agg	ttg	tct	ggg	tct	gct	tcc	aga	aac	3879
His	Ser	Asp	Asp	Ser	Glu	Arg	Leu	Ser	Gly	Ser	Ala	Ser	Arg	Asn	
1280						1285					1290				
cat	cat	gga	tct	tct	cgg	gag	cag	tca	aga	gat	ggc	tcc	aga	cac	3924
His	His	Gly	Ser	Ser	Arg	Glu	Gln	Ser	Arg	Asp	Gly	Ser	Arg	His	

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1295						1300					1305					
cct	ggg	ttc	cat	caa	gaa	gac	aga	gcc	agt	cac	ggg	cac	tct	gca		3969
Pro	Gly	Phe	His	Gln	Glu	Asp	Arg	Ala	Ser	His	Gly	His	Ser	Ala		
	1310					1315					1320					
gac	agc	tcc	aga	caa	tca	ggc	act	cat	cac	aca	gag	tct	tcc	tct		4014
Asp	Ser	Ser	Arg	Gln	Ser	Gly	Thr	His	His	Thr	Glu	Ser	Ser	Ser		
	1325					1330					1335					
cat	gga	cag	gct	gtg	tca	tcc	cat	gaa	cag	gca	aga	tca	agt	cca		4059
His	Gly	Gln	Ala	Val	Ser	Ser	His	Glu	Gln	Ala	Arg	Ser	Ser	Pro		
	1340					1345					1350					
gga	gaa	aga	cat	gga	tcc	cgc	cac	cag	cag	tca	gca	gac	agc	tcc		4104
Gly	Glu	Arg	His	Gly	Ser	Arg	His	Gln	Gln	Ser	Ala	Asp	Ser	Ser		
	1355					1360					1365					
aga	cac	tca	ggc	att	ggg	cac	aga	caa	gct	tca	tct	gca	gtc	aga		4149
Arg	His	Ser	Gly	Ile	Gly	His	Arg	Gln	Ala	Ser	Ser	Ala	Val	Arg		
	1370					1375					1380					
gac	agt	gga	cac	cga	ggg	tcc	agt	ggt	agt	cag	gtc	act	aac	agt		4194
Asp	Ser	Gly	His	Arg	Gly	Ser	Ser	Gly	Ser	Gln	Val	Thr	Asn	Ser		
	1385					1390					1395					
gag	gga	cat	tca	gaa	gac	tca	gac	aca	cag	tca	gtg	tca	gcc	cac		4239
Glu	Gly	His	Ser	Glu	Asp	Ser	Asp	Thr	Gln	Ser	Val	Ser	Ala	His		
	1400					1405					1410					
gga	caa	gct	ggg	ccc	cat	cag	cag	agc	cac	aaa	gag	tcc	gca	cgt		4284
Gly	Gln	Ala	Gly	Pro	His	Gln	Gln	Ser	His	Lys	Glu	Ser	Ala	Arg		
	1415					1420					1425					
ggc	cag	tca	ggg	gaa	agc	tct	gga	cgt	tca	agg	tct	ttc	ctc	tac		4329
Gly	Gln	Ser	Gly	Glu	Ser	Ser	Gly	Arg	Ser	Arg	Ser	Phe	Leu	Tyr		
	1430					1435					1440					
cag	gtg	agc	tct	cat	gaa	cag	tct	gag	tcc	aca	cac	gga	cag	act		4374
Gln	Val	Ser	Ser	His	Glu	Gln	Ser	Glu	Ser	Thr	His	Gly	Gln	Thr		
	1445					1450					1455					
gca	ccc	agc	act	gga	gga	aga	caa	gga	tcc	cgc	cat	gag	cag	gca		4419
Ala	Pro	Ser	Thr	Gly	Gly	Arg	Gln	Gly	Ser	Arg	His	Glu	Gln	Ala		
	1460					1465					1470					
cga	aac	agc	tct	agg	cac	tca	gca	tcc	caa	gac	ggt	cag	gac	acc		4464
Arg	Asn	Ser	Ser	Arg	His	Ser	Ala	Ser	Gln	Asp	Gly	Gln	Asp	Thr		
	1475					1480					1485					
att	cgt	gga	cac	ccg	ggg	tca	agc	aga	gga	gga	agg	cag	gga	tcc		4509
Ile	Arg	Gly	His	Pro	Gly	Ser	Ser	Arg	Gly	Gly	Arg	Gln	Gly	Ser		
	1490					1495					1500					
tac	cac	gag	caa	tca	gta	gat	agg	tct	gga	cac	tca	ggg	tac	cat		4554
Tyr	His	Glu	Gln	Ser	Val	Asp	Arg	Ser	Gly	His	Ser	Gly	Tyr	His		
	1505					1510					1515					
cac	agc	cac	acc	aca	ccc	cag	gga	agg	tct	gat	gcc	tcc	cat	ggg		4599
His	Ser	His	Thr	Thr	Pro	Gln	Gly	Arg	Ser	Asp	Ala	Ser	His	Gly		
	1520					1525					1530					
cag	tca	gga	ccc	aga	agt	gca	agc	agg	caa	aca	aga	aat	gag	gaa		4644
Gln	Ser	Gly	Pro	Arg	Ser	Ala	Ser	Arg	Gln	Thr	Arg	Asn	Glu	Glu		
	1535					1540					1545					
caa	tca	gga	gac	ggc	tcc	agg	cac	tca	ggg	tca	cgt	cac	cat	gaa		4689
Gln	Ser	Gly	Asp	Gly	Ser	Arg	His	Ser	Gly	Ser	Arg	His	His	Glu		
	1550					1555					1560					

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cct Pro	tcc Ser 1565	act Thr	cgg Arg	gcc Ala	ggc Gly	agc Ser 1570	tct Ser	aga Arg	cac His	tca Ser	cag Gln 1575	gtg Val	ggc Gly	cag Gln	4734
gga Gly	gaa Glu 1580	tca Ser	gcg Ala	ggg Gly	tcc Ser	aag Lys 1585	aca Thr	agc Ser	agg Arg	cgc Arg	cag Gln 1590	gga Gly	tcc Ser	agt Ser	4779
gtt Val	agt Ser 1595	cag Gln	gac Asp	agg Arg	gac Asp	agt Ser 1600	gag Glu	gga Gly	cac His	tca Ser	gaa Glu 1605	gac Asp	tct Ser	gag Glu	4824
agg Arg	cgg Arg 1610	tct Ser	gag Glu	tcg Ser	gct Ala	tcc Ser 1615	aga Arg	aac Asn	cat His	tat Tyr	gga Gly 1620	tct Ser	gct Ala	cgg Arg	4869
gag Glu	cag Gln 1625	tca Ser	aga Arg	cat His	ggc Gly	tcc Ser 1630	agg Arg	aac Asn	ccc Pro	agg Arg	tcc Ser 1635	cat His	caa Gln	gaa Glu	4914
gat Asp	aga Arg 1640	gcc Ala	agt Ser	cat His	ggg Gly	cac His 1645	tct Ser	gca Ala	gag Glu	agc Ser	tcc Ser 1650	aga Arg	caa Gln	tca Ser	4959
ggc Gly	act Thr 1655	cgt Arg	cat His	gca Ala	gag Glu	act Thr 1660	tcc Ser	tct Ser	ggg Gly	gga Gly	cag Gln 1665	gct Ala	gca Ala	tca Ser	5004
tcc Ser	cag Gln 1670	gaa Glu	cag Gln	gca Ala	agg Arg	tca Ser 1675	agt Ser	cca Pro	gga Gly	gaa Glu	aga Arg 1680	cat His	gga Gly	tcc Ser	5049
cgc Arg	cac His 1685	cag Gln	cag Gln	tca Ser	gca Ala	gac Asp 1690	agc Ser	tcc Ser	aca Thr	gac Asp	tca Ser 1695	ggc Gly	act Thr	ggg Gly	5094
cgc Arg	aga Arg 1700	caa Gln	gat Asp	tca Ser	tct Ser	gta Val 1705	gtc Val	gga Gly	gac Asp	agt Ser	gga Gly 1710	aac Asn	cga Arg	ggg Gly	5139
tcc Ser	agt Ser 1715	ggg Gly	agc Ser	cag Gln	gcc Ala	agt Ser 1720	gac Asp	agc Ser	gag Glu	gga Gly	cac His 1725	tca Ser	gaa Glu	gag Glu	5184
tca Ser	gac Asp 1730	aca Thr	cag Gln	tca Ser	gtg Val	tca Ser 1735	gcc Ala	cac His	gga Gly	cag Gln	gct Ala 1740	ggg Gly	ccc Pro	cat His	5229
cag Gln	cag Gln 1745	agc Ser	cac His	caa Gln	gag Glu	tcc Ser 1750	aca Thr	cgt Arg	ggc Gly	cag Gln	tca Ser 1755	ggg Gly	gaa Glu	agg Arg	5274
tct Ser	gga Gly 1760	cgt Arg	tca Ser	ggg Gly	tct Ser	ttc Phe 1765	ctc Leu	tac Tyr	cag Gln	gtg Val	agc Ser 1770	act Thr	cat His	gaa Glu	5319
cag Gln	tct Ser 1775	gag Glu	tcc Ser	gcc Ala	cat His	gga Gly 1780	cgc Arg	aca Thr	ggg Gly	ccc Pro	agc Ser 1785	act Thr	gga Gly	gga Gly	5364
aga Arg	caa Gln 1790	aga Arg	tcc Ser	cgc Arg	cac His	gag Glu 1795	cag Gln	gca Ala	cga Arg	gac Asp	agc Ser 1800	tcc Ser	agg Arg	cac His	5409
tca Ser	gcg Ala 1805	tcc Ser	caa Gln	gag Glu	ggg Gly	cag Gln 1810	gac Asp	acc Thr	att Ile	cgt Arg	gga Gly 1815	cac His	cca Pro	ggg Gly	5454

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tca Ser	agc Ser 1820	aga Arg	gga Gly	gga Gly	agg Arg	cag Gln 1825	gga Gly	tcc Ser	cac His	tat Tyr	gag Glu 1830	caa Gln	tcg Ser	gta Val	5499
gat Asp	agt Ser 1835	tct Ser	gga Gly	cac His	tca Ser	ggg Gly 1840	tct Ser	cat His	cac His	agc Ser	cac His 1845	acc Thr	acg Thr	tcc Ser	5544
cag Gln	gaa Glu 1850	agg Arg	tct Ser	gat Asp	gtc Val	tcc Ser 1855	cgt Arg	ggg Gly	cag Gln	tca Ser	gga Gly 1860	tcc Ser	aga Arg	agt Ser	5589
gtc Val	agc Ser 1865	aga Arg	caa Gln	aca Thr	cgt Arg	aat Asn 1870	gag Glu	aaa Lys	caa Gln	tca Ser	gga Gly 1875	gac Asp	ggc Gly	tcc Ser	5634
agg Arg	cac His 1880	tca Ser	ggg Gly	tcg Ser	cgt Arg	cac His 1885	cat His	gaa Glu	gct Ala	tcc Ser	tct Ser 1890	cgg Arg	gcc Ala	gac Asp	5679
agc Ser	tct Ser 1895	aga Arg	cac His	tcg Ser	cag Gln	gtg Val 1900	ggc Gly	cag Gln	gga Gly	caa Gln	tca Ser 1905	tca Ser	ggg Gly	ccc Pro	5724
agg Arg	aca Thr 1910	agc Ser	agg Arg	aac Asn	cag Gln	gga Gly 1915	tcc Ser	agt Ser	gtt Val	agc Ser	cag Gln 1920	gac Asp	agt Ser	gac Asp	5769
agt Ser	cag Gln 1925	gga Gly	cac His	tca Ser	gaa Glu	gac Asp 1930	tct Ser	gag Glu	agg Arg	tgg Trp	tct Ser 1935	ggg Gly	tct Ser	gct Ala	5814
tcc Ser	aga Arg 1940	aac Asn	cat His	ctt Leu	gga Gly	tct Ser 1945	gct Ala	tgg Trp	gag Glu	cag Gln	tca Ser 1950	aga Arg	gat Asp	ggc Gly	5859
tcc Ser	aga Arg 1955	cac His	cct Pro	ggg Gly	tcc Ser	cat His 1960	cac His	gaa Glu	gac Asp	aga Arg	gcc Ala 1965	ggg Gly	cac His	ggg Gly	5904
cac His	tct Ser 1970	gca Ala	gac Asp	agc Ser	tcc Ser	aga Arg 1975	caa Gln	tca Ser	ggc Gly	act Thr	cgt Arg 1980	cac His	aca Thr	gag Glu	5949
tct Ser	tcc Ser 1985	tct Ser	cgt Arg	gga Gly	cag Gln	gct Ala 1990	gcg Ala	tca Ser	tcc Ser	cat His	gaa Glu 1995	cag Gln	gca Ala	aga Arg	5994
tca Ser	agt Ser 2000	gca Ala	gga Gly	gaa Glu	aga Arg	cat His 2005	gga Gly	tcc Ser	cac His	cac His	cag Gln 2010	ctc Leu	cag Gln	tca Ser	6039
gca Ala	gac Asp 2015	agc Ser	tcc Ser	aga Arg	cac His	tca Ser 2020	ggc Gly	att Ile	ggg Gly	cat His	gga Gly 2025	caa Gln	gct Ala	tca Ser	6084
tct Ser	gca Ala 2030	gtc Val	aga Arg	gac Asp	agt Ser	gga Gly 2035	cac His	cga Arg	ggg Gly	tac Tyr	agt Ser 2040	ggg Gly	agt Ser	cag Gln	6129
gcc Ala	agt Ser 2045	gac Asp	agt Ser	gag Glu	gga Gly	cat His 2050	tca Ser	gaa Glu	gac Asp	tca Ser	gac Asp 2055	aca Thr	cag Gln	tca Ser	6174
gtg Val	tca Ser 2060	gca Ala	cag Gln	gga Gly	aaa Lys	gct Ala 2065	ggg Gly	ccc Pro	cat His	cag Gln	cag Gln 2070	agc Ser	cac His	aaa Lys	6219
gag	tcc	gca	cgt	ggc	cag	tca	ggg	gaa	agc	tct	gga	cgt	tca	ggg	6264

Glu Ser 2075	Ala Arg	Gly Gln	Ser Ser	Gly Glu Ser Ser	Gly Arg Ser Gly	2080	2085								
tct Ser 2090	ttc Phe	ctc Leu	tac Tyr	cag Gln	gtg Val	agc Ser 2095	act Thr	cat His	gaa Glu	cag Gln	tct Ser 2100	gag Glu	tcc Ser	acc Thr	6309
cat His 2105	gga Gly	cag Gln	tct Ser	gcg Ala	ccc Pro	agc Ser 2110	act Thr	gga Gly	gga Gly	aga Arg	caa Gln 2115	gga Gly	tcc Ser	cat His	6354
tat Tyr 2120	gat Asp	cag Gln	gca Ala	caa Gln	gac Asp	agc Ser 2125	tcc Ser	agg Arg	cac His	tca Ser	gca Ala 2130	tcc Ser	caa Gln	gag Glu	6399
ggt Gly 2135	cag Gln	gac Asp	acc Thr	att Ile	cgt Arg	gga Gly 2140	cac His	ccg Pro	ggg Gly	cca Pro	agc Ser 2145	aga Arg	gga Gly	gga Gly	6444
aga Arg 2150	cag Gln	ggg Gly	tcc Ser	cac His	caa Gln	gag Glu 2155	caa Gln	tcg Ser	gta Val	gat Asp	agg Arg 2160	tct Ser	gga Gly	cac His	6489
tca Ser 2165	ggg Gly	tct Ser	cat His	cac His	agc Ser	cac His 2170	acc Thr	aca Thr	tcc Ser	cag Gln	gga Gly 2175	agg Arg	tct Ser	gat Asp	6534
gcc Ala 2180	tcc Ser	cgt Arg	ggg Gly	cag Gln	tca Ser	gga Gly 2185	tcc Ser	aga Arg	agt Ser	gca Ala	agc Ser 2190	aga Arg	aaa Lys	aca Thr	6579
tat Tyr 2195	gac Asp	aag Lys	gaa Glu	caa Gln	tca Ser	gga Gly 2200	gat Asp	ggc Gly	tct Ser	agg Arg	cac His 2205	tca Ser	ggg Gly	tcg Ser	6624
cat His 2210	cat His	cat His	gaa Glu	gct Ala	tcc Ser	tct Ser 2215	tgg Trp	gcc Ala	gac Asp	agc Ser	tct Ser 2220	aga Arg	cac His	tca Ser	6669
ctg Leu 2225	gtg Val	ggc Gly	cag Gln	gga Gly	caa Gln	tca Ser 2230	tca Ser	ggg Gly	ccc Pro	agg Arg	aca Thr 2235	agc Ser	agg Arg	ccc Pro	6714
cgg Arg 2240	gga Gly	tcc Ser	agt Ser	gtt Val	agc Ser	cag Gln 2245	gac Asp	agt Ser	gac Asp	agt Ser	gag Glu 2250	gga Gly	cac His	tca Ser	6759
gaa Glu 2255	gat Asp	tct Ser	gag Glu	agg Arg	cgg Arg	tct Ser 2260	ggg Gly	tct Ser	gcg Ala	tcc Ser	aga Arg 2265	aac Asn	cat His	cat His	6804
gga Gly 2270	tct Ser	gct Ala	cag Gln	gag Glu	cag Gln	tca Ser 2275	aga Arg	gat Asp	ggc Gly	tcc Ser	aga Arg 2280	cac His	ccc Pro	agg Arg	6849
tcc Ser 2285	cat His	cac His	gaa Glu	gac Asp	aga Arg	gcc Ala 2290	ggt Gly	cat His	ggg Gly	cac His	tct Ser 2295	gca Ala	gag Glu	agc Ser	6894
tcc Ser 2300	aga Arg	caa Gln	tca Ser	ggc Gly	act Thr	cat His 2305	cat His	gca Ala	gag Glu	aat Asn	tcc Ser 2310	tct Ser	ggt Gly	gga Gly	6939
cag Gln 2315	gct Ala	gca Ala	tca Ser	tcc Ser	cat His	gaa Glu 2320	cag Gln	gca Ala	aga Arg	tca Ser	agt Ser 2325	gca Ala	gga Gly	gag Glu	6984
aga Arg	cac His	gga Gly	tcc Ser	cac His	cac His	cag Gln	cag Gln	tca Ser	gca Ala	gac Asp	agc Ser	tcc Ser	aga Arg	cac His	7029



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2330	2335	2340		
tca ggc att ggg cac gga caa gct tca tct gca gtc aga gac agt Ser Gly Ile Gly His Gly Gln Ala Ser Ser Ala Val Arg Asp Ser	2345	2350	2355	7074
gga cac cga ggg tcc agt ggt agt cag gcc agt gac agt gag gga Gly His Arg Gly Ser Ser Gly Ser Gln Ala Ser Asp Ser Glu Gly	2360	2365	2370	7119
cat tca gaa gac tca gac aca cag tca gtg tca gcc cac gga cag His Ser Glu Asp Ser Asp Thr Gln Ser Val Ser Ala His Gly Gln	2375	2380	2385	7164
gct ggg ccc cat cag cag agc cac caa gag tcc aca cgt ggc cgg Ala Gly Pro His Gln Gln Ser His Gln Glu Ser Thr Arg Gly Arg	2390	2395	2400	7209
tca gca gga agg tct gga cgt tca ggg tct ttc ctc tac cag gtg Ser Ala Gly Arg Ser Gly Arg Ser Gly Ser Phe Leu Tyr Gln Val	2405	2410	2415	7254
agc act cat gaa cag tct gag tcc gcc cat gga cgg acc ggg acc Ser Thr His Glu Gln Ser Glu Ser Ala His Gly Arg Thr Gly Thr	2420	2425	2430	7299
agc act gga gga aga caa gga tcc cac cac aag cag gca cga gac Ser Thr Gly Gly Arg Gln Gly Ser His His Lys Gln Ala Arg Asp	2435	2440	2445	7344
agc tcc agg cac tca acg tcc caa gag ggt cag gac acc att cat Ser Ser Arg His Ser Thr Ser Gln Glu Gly Gln Asp Thr Ile His	2450	2455	2460	7389
gga cac ccg ggg tca agc agt gga gga agg cag gga tcc cac tac Gly His Pro Gly Ser Ser Ser Gly Gly Arg Gln Gly Ser His Tyr	2465	2470	2475	7434
gag caa ttg gta gat aga tct gga cac tca ggg tct cat cac agc Glu Gln Leu Val Asp Arg Ser Gly His Ser Gly Ser His His Ser	2480	2485	2490	7479
cac acc aca tcc cag gga agg tct gat gcc tcc cat ggg cac tca His Thr Thr Ser Gln Gly Arg Ser Asp Ala Ser His Gly His Ser	2495	2500	2505	7524
gga tcc aga agt gca agc aga caa act cgt aac gat gaa caa tca Gly Ser Arg Ser Ala Ser Arg Gln Thr Arg Asn Asp Glu Gln Ser	2510	2515	2520	7569
gga gac ggc tcc agg cac tca ggg tcg cgt cac cat gaa gct tcc Gly Asp Gly Ser Arg His Ser Gly Ser Arg His His Glu Ala Ser	2525	2530	2535	7614
tct cgg gcc gac agc tct gga cac tcg cag gtg ggc cag gga caa Ser Arg Ala Asp Ser Ser Gly His Ser Gln Val Gly Gln Gly Gln	2540	2545	2550	7659
tca gag ggg ccc agg aca agc agg aac tgg gga tcc agt ttt agc Ser Glu Gly Pro Arg Thr Ser Arg Asn Trp Gly Ser Ser Phe Ser	2555	2560	2565	7704
cag gac agt gac agt cag gga cac tca gaa gac tct gag agg tgg Gln Asp Ser Asp Ser Gln Gly His Ser Glu Asp Ser Glu Arg Trp	2570	2575	2580	7749
tct ggg tct gct tcc aga aac cat cat gga tct gct cag gag cag Ser Gly Ser Ala Ser Arg Asn His His Gly Ser Ala Gln Glu Gln	2585	2590	2595	7794

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cta Leu	aga Arg 2600	gat Asp	ggc Gly	tcc Ser	aga Arg	cac His 2605	ccc Pro	agg Arg	tcc Ser	cat His	caa Gln 2610	gaa Glu	gac Asp	aga Arg	7839
gct Ala	ggt Gly 2615	cat His	ggg Gly	cac His	tct Ser	gca Ala 2620	gac Asp	agc Ser	tcc Ser	aga Arg	caa Gln 2625	tca Ser	ggc Gly	act Thr	7884
cgt Arg	cac His 2630	aca Thr	cag Gln	act Thr	tcc Ser	tct Ser 2635	ggt Gly	gga Gly	cag Gln	gct Ala	gca Ala 2640	tca Ser	tcc Ser	cat His	7929
gaa Glu	cag Gln 2645	gca Ala	aga Arg	tca Ser	agt Ser	gca Ala 2650	gga Gly	gaa Glu	aga Arg	cat His	gga Gly 2655	tcc Ser	cac His	cac His	7974
cag Gln	cag Gln 2660	tca Ser	gca Ala	gac Asp	agc Ser	tcc Ser 2665	aga Arg	cac His	tca Ser	ggc Gly	att Ile 2670	ggg Gly	cac His	gga Gly	8019
caa Gln	gct Ala 2675	tca Ser	tct Ser	gca Ala	gtc Val	aga Arg 2680	gac Asp	agt Ser	gga Gly	cac His	cga Arg 2685	ggg Gly	tac Tyr	agt Ser	8064
ggt Gly	agt Ser 2690	cag Gln	gcc Ala	agt Ser	gac Asp	aat Asn 2695	gag Glu	gga Gly	cat His	tca Ser	gaa Glu 2700	gac Asp	tca Ser	gac Asp	8109
aca Thr	cag Gln 2705	tca Ser	gtg Val	tca Ser	gcc Ala	cac His 2710	gga Gly	cag Gln	gct Ala	ggg Gly	tcc Ser 2715	cat His	cag Gln	cag Gln	8154
agc Ser	cac His 2720	caa Gln	gag Glu	tcc Ser	gca Ala	cgt Arg 2725	ggc Gly	cgg Arg	tca Ser	ggg Gly	gaa Glu 2730	acg Thr	tct Ser	gga Gly	8199
cat His	tca Ser 2735	gga Gly	tct Ser	ttc Phe	ctc Leu	tac Tyr 2740	cag Gln	gtg Val	agc Ser	act Thr	cat His 2745	gaa Glu	cag Gln	tct Ser	8244
gag Glu	tcc Ser 2750	tcc Ser	cat His	gga Gly	tgg Trp	acg Thr 2755	ggg Gly	ccc Pro	agc Ser	act Thr	aga Arg 2760	gga Gly	aga Arg	caa Gln	8289
gga Gly	tcc Ser 2765	cgc Arg	cat His	gag Glu	cag Gln	gca Ala 2770	caa Gln	gac Asp	agc Ser	tcc Ser	agg Arg 2775	cac His	tca Ser	gca Ala	8334
tcc Ser	caa Gln 2780	gac Asp	ggt Gly	cag Gln	gac Asp	acc Thr 2785	att Ile	cgt Arg	gga Gly	cac His	ccg Pro 2790	ggg Gly	tca Ser	agc Ser	8379
aga Arg	gga Gly 2795	gga Gly	agg Arg	cag Gln	ggg Gly	tac Tyr 2800	cac His	cac His	gag Glu	cat His	tcg Ser 2805	gta Val	gat Asp	agc Ser	8424
tct Ser	gga Gly 2810	cac His	tca Ser	ggg Gly	tcc Ser	cat His 2815	cac His	agc Ser	cac His	acc Thr	aca Thr 2820	tcc Ser	cag Gln	gga Gly	8469
agg Arg	tct Ser 2825	gat Asp	gcc Ala	tcc Ser	cgt Arg	ggg Gly 2830	cag Gln	tca Ser	gga Gly	tcc Ser	aga Arg 2835	agt Ser	gca Ala	agc Ser	8514
aga Arg	aca Thr 2840	aca Thr	cgt Arg	aat Asn	gag Glu	gaa Glu 2845	caa Gln	tca Ser	gga Gly	gac Asp	ggc Gly 2850	tcc Ser	agg Arg	cac His	8559

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tca Ser	ggg Gly 2855	tcg Ser	cgt Arg	cac His	cat His	gaa Glu 2860	gct Ala	tcc Ser	act Thr	cat His	gcc Ala 2865	gac Asp	atc Ile	tct Ser	8604
aga Arg	cac His 2870	tca Ser	cag Gln	gca Ala	gtc Val	cag Gln 2875	gga Gly	caa Gln	tca Ser	gag Glu	ggg Gly 2880	tcc Ser	agg Arg	aga Arg	8649
agc Ser	agg Arg 2885	cgc Arg	cag Gln	gga Gly	tcc Ser	agt Ser 2890	gtg Val	agc Ser	cag Gln	gac Asp	agt Ser 2895	gac Asp	agt Ser	gag Glu	8694
gga Gly	cat His 2900	tca Ser	gaa Glu	gac Asp	tct Ser	gag Glu 2905	agg Arg	tgg Trp	tct Ser	ggg Gly	tct Ser 2910	gct Ala	tcc Ser	aga Arg	8739
aac Asn	cat His 2915	cat His	gga Gly	tct Ser	gct Ala	cag Gln 2920	gag Glu	cag Gln	cta Leu	aga Arg	gat Asp 2925	ggc Gly	tcc Ser	aga Arg	8784
cac His	ccc Pro 2930	agg Arg	tcc Ser	cat His	caa Gln	gaa Glu 2935	gac Asp	aga Arg	gct Ala	ggt Gly	cat His 2940	ggg Gly	cac His	tct Ser	8829
gca Ala	gac Asp 2945	agc Ser	tcc Ser	aga Arg	caa Gln	tca Ser 2950	ggc Gly	act Thr	cgt Arg	cac His	aca Thr 2955	cag Gln	act Thr	tcc Ser	8874
tct Ser	ggt Gly 2960	gga Gly	cag Gln	gct Ala	gca Ala	tca Ser 2965	tcc Ser	cat His	gaa Glu	cag Gln	gca Ala 2970	aga Arg	tca Ser	agt Ser	8919
gca Ala	gga Gly 2975	gaa Glu	aga Arg	cat His	gga Gly	tcc Ser 2980	cac His	cac His	cag Gln	cag Gln	tca Ser 2985	gca Ala	gac Asp	agc Ser	8964
tcc Ser	aga Arg 2990	cac His	tca Ser	ggc Gly	att Ile	ggg Gly 2995	cac His	gga Gly	caa Gln	gct Ala	tca Ser 3000	tct Ser	gca Ala	gtc Val	9009
aga Arg	gac Asp 3005	agt Ser	gga Gly	cac His	cga Arg	ggg Gly 3010	tac Tyr	agt Ser	ggt Gly	agt Ser	cag Gln 3015	gcc Ala	agt Ser	gac Asp	9054
aat Asn	gag Glu 3020	gga Gly	cat His	tca Ser	gaa Glu	gac Asp 3025	tca Ser	gac Asp	aca Thr	cag Gln	tca Ser 3030	gtg Val	tca Ser	gcc Ala	9099
cac His	gga Gly 3035	cag Gln	gct Ala	ggg Gly	tcc Ser	cat His 3040	cag Gln	cag Gln	agc Ser	cac His	caa Gln 3045	gag Glu	tcc Ser	gca Ala	9144
cgt Arg	ggc Gly 3050	cgg Arg	tca Ser	ggg Gly	gaa Glu	acg Thr 3055	tct Ser	gga Gly	cat His	tca Ser	gga Gly 3060	tct Ser	ttc Phe	ctc Leu	9189
tac Tyr	cag Gln 3065	gtg Val	agc Ser	act Thr	cat His	gaa Glu 3070	cag Gln	tct Ser	gag Glu	tcc Ser	tcc Ser 3075	cat His	gga Gly	tgg Trp	9234
acg Thr	ggg Gly 3080	ccc Pro	agc Ser	act Thr	aga Arg	gga Gly 3085	aga Arg	caa Gln	gga Gly	tcc Ser	cgc Arg 3090	cat His	gag Glu	cag Gln	9279
gca Ala	caa Gln 3095	gac Asp	agc Ser	tcc Ser	agg Arg	cac His 3100	tca Ser	gca Ala	tcc Ser	caa Gln	tac Tyr 3105	ggt Gly	cag Gln	gac Asp	9324
acc	att	cgt	gga	cac	ccg	ggg	tca	agc	aga	gga	gga	agg	cag	ggg	9369

Thr	Ile	Arg	Gly	His	Pro	Gly	Ser	Ser	Arg	Gly	Gly	Arg	Gln	Gly		
	3110					3115					3120					
tac	cac	cac	gag	cat	tcg	gta	gat	agc	tct	gga	cac	tca	ggg	tcc	9414	
Tyr	His	His	Glu	His	Ser	Val	Asp	Ser	Ser	Gly	His	Ser	Gly	Ser		
	3125					3130					3135					
cat	cac	agc	cac	acc	aca	tcc	cag	gga	agg	tct	gat	gcc	tcc	cgt	9459	
His	His	Ser	His	Thr	Thr	Ser	Gln	Gly	Arg	Ser	Asp	Ala	Ser	Arg		
	3140					3145					3150					
ggg	cag	tca	gga	tcc	aga	agt	gca	agc	aga	aca	aca	cgt	aat	gag	9504	
Gly	Gln	Ser	Gly	Ser	Arg	Ser	Ala	Ser	Arg	Thr	Thr	Arg	Asn	Glu		
	3155					3160					3165					
gaa	caa	tca	gga	gac	agc	tcc	agg	cac	tca	gtg	tca	cgt	cac	cat	9549	
Glu	Gln	Ser	Gly	Asp	Ser	Ser	Arg	His	Ser	Val	Ser	Arg	His	His		
	3170					3175					3180					
gaa	gct	tcc	act	cat	gcc	gac	atc	tct	aga	cac	tca	cag	gca	gtc	9594	
Glu	Ala	Ser	Thr	His	Ala	Asp	Ile	Ser	Arg	His	Ser	Gln	Ala	Val		
	3185					3190					3195					
cag	gga	caa	tca	gag	ggg	tcc	agg	aga	agc	agg	cgc	cag	gga	tcc	9639	
Gln	Gly	Gln	Ser	Glu	Gly	Ser	Arg	Arg	Ser	Arg	Arg	Gln	Gly	Ser		
	3200					3205					3210					
agt	gtg	agc	cag	gac	agt	gac	agt	gag	gga	cat	tca	gaa	gac	tct	9684	
Ser	Val	Ser	Gln	Asp	Ser	Asp	Ser	Glu	Gly	His	Ser	Glu	Asp	Ser		
	3215					3220					3225					
gag	agg	tgg	tct	ggg	tct	gct	tcc	aga	aac	cat	cgt	gga	tct	gtt	9729	
Glu	Arg	Trp	Ser	Gly	Ser	Ala	Ser	Arg	Asn	His	Arg	Gly	Ser	Val		
	3230					3235					3240					
cag	gag	cag	tca	agg	cac	ggc	tcc	aga	cac	ccc	agg	tcc	cat	cac	9774	
Gln	Glu	Gln	Ser	Arg	His	Gly	Ser	Arg	His	Pro	Arg	Ser	His	His		
	3245					3250					3255					
gaa	gac	aga	gcc	ggt	cac	ggg	cac	tct	gca	gac	cgc	tcc	aga	caa	9819	
Glu	Asp	Arg	Ala	Gly	His	Gly	His	Ser	Ala	Asp	Arg	Ser	Arg	Gln		
	3260					3265					3270					
tca	ggc	act	cgt	cac	gca	gag	act	tcc	tct	ggt	gga	cag	gct	gca	9864	
Ser	Gly	Thr	Arg	His	Ala	Glu	Thr	Ser	Ser	Gly	Gly	Gln	Ala	Ala		
	3275					3280					3285					
tca	tcc	cat	gaa	cag	gca	aga	tca	agt	cca	gga	gag	aga	cac	gga	9909	
Ser	Ser	His	Glu	Gln	Ala	Arg	Ser	Ser	Pro	Gly	Glu	Arg	His	Gly		
	3290					3295					3300					
tcc	cgc	cac	cag	cag	tca	gca	gac	agc	tcc	aga	cac	tca	ggc	att	9954	
Ser	Arg	His	Gln	Gln	Ser	Ala	Asp	Ser	Ser	Arg	His	Ser	Gly	Ile		
	3305					3310					3315					
ccg	cgt	gga	caa	gct	tca	tct	gca	gtc	aga	gac	agt	aga	cac	tgg	9999	
Pro	Arg	Gly	Gln	Ala	Ser	Ser	Ala	Val	Arg	Asp	Ser	Arg	His	Trp		
	3320					3325					3330					
ggg	tcc	agt	ggt	agt	cag	gcc	agt	gat	agt	gag	gga	cat	tca	gaa	10044	
Gly	Ser	Ser	Gly	Ser	Gln	Ala	Ser	Asp	Ser	Glu	Gly	His	Ser	Glu		
	3335					3340					3345					
gag	tca	gac	aca	cag	tca	gtg	tca	ggc	cat	gga	cag	gct	ggg	ccc	10089	
Glu	Ser	Asp	Thr	Gln	Ser	Val	Ser	Gly	His	Gly	Gln	Ala	Gly	Pro		
	3350					3355					3360					
cat	cag	cag	agc	cac	caa	gag	tcc	gca	cgt	gac	cgg	tca	ggg	gga	10134	
His	Gln	Gln	Ser	His	Gln	Glu	Ser	Ala	Arg	Asp	Arg	Ser	Gly	Gly		

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3365						3370						3375					
agg	tct	gga	cgt	tca	ggg	tct	ttc	ctc	tac	cag	gtg	agc	act	cat			10179
Arg	Ser	Gly	Arg	Ser	Gly	Ser	Phe	Leu	Tyr	Gln	Val	Ser	Thr	His			
3380						3385					3390						
gaa	cag	tct	gag	tct	gcc	cat	ggg	cgg	acc	agg	acc	agc	act	gga			10224
Glu	Gln	Ser	Glu	Ser	Ala	His	Gly	Arg	Thr	Arg	Thr	Ser	Thr	Gly			
3395						3400					3405						
cga	aga	caa	gga	tcc	cac	cac	gag	cag	gca	cga	gac	agc	tcc	agg			10269
Arg	Arg	Gln	Gly	Ser	His	His	Glu	Gln	Ala	Arg	Asp	Ser	Ser	Arg			
3410						3415					3420						
cac	tca	gcg	tcc	caa	gag	ggg	cag	gac	acc	att	cgt	gga	cac	ccg			10314
His	Ser	Ala	Ser	Gln	Glu	Gly	Gln	Asp	Thr	Ile	Arg	Gly	His	Pro			
3425						3430					3435						
ggg	tca	agc	aga	aga	gga	agg	cag	gga	tcc	cac	tac	gag	caa	tcg			10359
Gly	Ser	Ser	Arg	Arg	Gly	Arg	Gln	Gly	Ser	His	Tyr	Glu	Gln	Ser			
3440						3445					3450						
gta	gat	agg	tct	gga	cac	tca	ggg	tcc	cat	cac	agc	cac	acc	aca			10404
Val	Asp	Arg	Ser	Gly	His	Ser	Gly	Ser	His	His	Ser	His	Thr	Thr			
3455						3460					3465						
tcc	cag	gga	agg	tct	gat	gcc	tcc	cgt	ggg	cag	tca	gga	tcc	aga			10449
Ser	Gln	Gly	Arg	Ser	Asp	Ala	Ser	Arg	Gly	Gln	Ser	Gly	Ser	Arg			
3470						3475					3480						
agt	gcc	agc	aga	caa	act	cgt	aat	gac	gaa	caa	tca	gga	gat	ggc			10494
Ser	Ala	Ser	Arg	Gln	Thr	Arg	Asn	Asp	Glu	Gln	Ser	Gly	Asp	Gly			
3485						3490					3495						
tcc	agg	cac	tca	tgg	tcg	cat	cac	cat	gaa	gct	tcc	act	cag	gcg			10539
Ser	Arg	His	Ser	Trp	Ser	His	His	His	Glu	Ala	Ser	Thr	Gln	Ala			
3500						3505					3510						
gac	agc	tct	aga	cac	tca	cag	tcc	ggc	cag	gga	caa	tca	gcg	ggg			10584
Asp	Ser	Ser	Arg	His	Ser	Gln	Ser	Gly	Gln	Gly	Gln	Ser	Ala	Gly			
3515						3520					3525						
ccc	agg	aca	agc	agg	aac	cag	gga	tcc	agt	gtt	agc	cag	gac	agt			10629
Pro	Arg	Thr	Ser	Arg	Asn	Gln	Gly	Ser	Ser	Val	Ser	Gln	Asp	Ser			
3530						3535					3540						
gac	agt	cag	gga	cac	tca	gaa	gac	tct	gag	agg	tgg	tct	ggg	tct			10674
Asp	Ser	Gln	Gly	His	Ser	Glu	Asp	Ser	Glu	Arg	Trp	Ser	Gly	Ser			
3545						3550					3555						
gct	tcc	aga	aac	cat	cgt	gga	tct	gct	cag	gag	cag	tca	aga	gat			10719
Ala	Ser	Arg	Asn	His	Arg	Gly	Ser	Ala	Gln	Glu	Gln	Ser	Arg	Asp			
3560						3565					3570						
ggc	tcc	aga	cac	ccc	acg	tcc	cat	cac	gaa	gac	aga	gcc	ggg	cac			10764
Gly	Ser	Arg	His	Pro	Thr	Ser	His	His	Glu	Asp	Arg	Ala	Gly	His			
3575						3580					3585						
ggg	cac	tct	gca	gag	agc	tcc	aga	caa	tca	ggc	act	cat	cat	gca			10809
Gly	His	Ser	Ala	Glu	Ser	Ser	Arg	Gln	Ser	Gly	Thr	His	His	Ala			
3590						3595					3600						
gag	aat	tcc	tct	ggg	gga	cag	gct	gca	tca	tcc	cat	gaa	cag	gca			10854
Glu	Asn	Ser	Ser	Gly	Gly	Gln	Ala	Ala	Ser	Ser	His	Glu	Gln	Ala			
3605						3610					3615						
aga	tca	agt	gca	gga	gag	aga	cat	gga	tcc	cac	cac	cag	cag	tca			10899
Arg	Ser	Ser	Ala	Gly	Glu	Arg	His	Gly	Ser	His	His	Gln	Gln	Ser			
3620						3625					3630						

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gca Ala	gac Asp 3635	agc Ser	tcc Ser	aga Arg	cac His	tca Ser 3640	ggc Gly	att Ile	ggg Gly	cac His	gga Gly 3645	caa Gln	gct Ala	tca Ser	10944
tct Ser	gca Ala 3650	gtc Val	aga Arg	gac Asp	agt Ser	gga Gly 3655	cac His	cga Arg	ggg Gly	tcc Ser	agt Ser 3660	ggt Gly	agt Ser	cag Gln	10989
gcc Ala	agt Ser 3665	gac Asp	agt Ser	gag Glu	gga Gly	cat His 3670	tca Ser	gaa Glu	gac Asp	tca Ser	gac Asp 3675	aca Thr	cag Gln	tca Ser	11034
gtg Val	tca Ser 3680	gcc Ala	cac His	gga Gly	cag Gln	gct Ala 3685	ggg Gly	ccc Pro	cat His	cag Gln	cag Gln 3690	agc Ser	cac His	caa Gln	11079
gag Glu	tcc Ser 3695	aca Thr	cgt Arg	ggc Gly	cgg Arg	tca Ser 3700	gca Ala	gga Gly	agg Arg	tct Ser	gga Gly 3705	cgt Arg	tca Ser	ggg Gly	11124
tct Ser	ttc Phe 3710	ctc Leu	tac Tyr	cag Gln	gtg Val	agc Ser 3715	act Thr	cat His	gaa Glu	cag Gln	tct Ser 3720	gag Glu	tct Ser	gcc Ala	11169
cat His	gga Gly 3725	cgg Arg	gct Ala	ggg Gly	ccc Pro	agt Ser 3730	act Thr	gga Gly	gga Gly	aga Arg	caa Gln 3735	gga Gly	tcc Ser	cgc Arg	11214
cac His	gag Glu 3740	cag Gln	gca Ala	cga Arg	gac Asp	agc Ser 3745	tcc Ser	agg Arg	cac His	tca Ser	gcg Ala 3750	tcc Ser	caa Gln	gag Glu	11259
ggt Gly	cag Gln 3755	gac Asp	acc Thr	att Ile	cgt Arg	gga Gly 3760	cac His	ccg Pro	ggg Gly	tca Ser	agg Arg 3765	aga Arg	gga Gly	gga Gly	11304
aga Arg	cag Gln 3770	gga Gly	tcc Ser	tac Tyr	cac His	gag Glu 3775	caa Gln	tcg Ser	gta Val	gat Asp	agg Arg 3780	tct Ser	gga Gly	cac His	11349
tca Ser	ggg Gly 3785	tcc Ser	cat His	cac His	agc Ser	cac His 3790	acc Thr	aca Thr	tcc Ser	cag Gln	gga Gly 3795	agg Arg	tct Ser	gat Asp	11394
gcc Ala	tcc Ser 3800	cat His	ggg Gly	cag Gln	tca Ser	gga Gly 3805	tcc Ser	aga Arg	agt Ser	gca Ala	agc Ser 3810	aga Arg	gaa Glu	aca Thr	11439
cgt Arg	aat Asn 3815	gag Glu	gaa Glu	cag Gln	tca Ser	gga Gly 3820	gac Asp	ggc Gly	tcc Ser	agg Arg	cac His 3825	tca Ser	ggg Gly	tcg Ser	11484
cgt Arg	cac His 3830	cat His	gaa Glu	gct Ala	tcc Ser	act Thr 3835	cag Gln	gct Ala	gac Asp	agc Ser	tct Ser 3840	aga Arg	cac His	tca Ser	11529
cag Gln	tcc Ser 3845	ggc Gly	cag Gln	ggt Gly	gaa Glu	tca Ser 3850	gcg Ala	ggg Gly	tcc Ser	agg Arg	aga Arg 3855	agc Ser	agg Arg	cgc Arg	11574
cag Gln	gga Gly 3860	tcc Ser	agt Ser	gtt Val	agc Ser	cag Gln 3865	gac Asp	agt Ser	gac Asp	agt Ser	gag Glu 3870	gca Ala	tac Tyr	cca Pro	11619
gag Glu	gac Asp 3875	tct Ser	gag Glu	agg Arg	cga Arg	tct Ser 3880	gag Glu	tct Ser	gct Ala	tcc Ser	aga Arg 3885	aac Asn	cat His	cat His	11664

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gga tct tct cgg gag cag tca aga gat ggc tcc aga cac ccc gga	11709
Gly Ser 3890 Ser Arg Glu Gln 3895 Ser Arg Asp Gly Ser 3900 Arg His Pro Gly	
tcc tct cac cgc gat aca gcc agt cat gta cag tct tca cct gta	11754
Ser Ser 3905 His Arg Asp Thr Ala 3910 Ser His Val Gln Ser 3915 Ser Pro Val	
cag tca gac tct agt acc gct aag gaa cat ggt cac ttt agt agt	11799
Gln Ser 3920 Asp Ser Ser Thr Ala 3925 Lys Glu His Gly His 3930 Phe Ser Ser	
ctt tca caa gat tct gcg tat cac tca gga ata cag tca cgt ggc	11844
Leu Ser 3935 Gln Asp Ser Ala Tyr 3940 His Ser Gly Ile Gln Ser Arg Gly	
agt cct cac agt tct agt tct tat cat tat caa tct gag ggc act	11889
Ser Pro 3950 His Ser Ser Ser Ser Tyr His Tyr Gln Ser 3960 Glu Gly Thr	
gaa agg caa aaa ggt caa tca ggt tta gtt tgg aga cat ggc agc	11934
Glu Arg 3965 Gln Lys Gly Gln Ser 3970 Gly Leu Val Trp Arg 3975 His Gly Ser	
tat ggt agt gca gat tat gat tat ggt gaa tcc ggg ttt aga cac	11979
Tyr Gly 3980 Ser Ala Asp Tyr Asp 3985 Tyr Gly Glu Ser Gly 3990 Phe Arg His	
tct cag cac gga agt gtt agt tac aat tcc aat cct gtt gtt ttc	12024
Ser Gln 3995 His Gly Ser Val Ser 4000 Tyr Asn Ser Asn Pro 4005 Val Val Phe	
aag gaa aga tct gat atc tgt aaa gca agt gcg ttt ggt aaa gat	12069
Lys Glu 4010 Arg Ser Asp Ile Cys 4015 Lys Ala Ser Ala Phe 4020 Gly Lys Asp	
cat cca agg tat tat gca acg tat att aat aag gac cca ggt tta	12114
His Pro 4025 Arg Tyr Tyr Ala Thr 4030 Tyr Ile Asn Lys Asp 4035 Pro Gly Leu	
tgt ggc cat tct agt gat ata tcg aaa caa ctg gga ttt agt cag	12159
Cys Gly 4040 His Ser Ser Asp Ile 4045 Ser Lys Gln Leu Gly 4050 Phe Ser Gln	
tca cag aga tac tat tac tat gag taa	12186
Ser Gln 4055 Arg Tyr Tyr Tyr Tyr 4060 Glu	

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 <211> 4061  
 <212> PRT  
 <213> Homo sapiens

<400> 16

Met Ser Thr Leu Leu Glu Asn Ile Phe Ala Ile Ile Asn Leu Phe Lys  
 1 5 10 15

Gln Tyr Ser Lys Lys Asp Lys Asn Thr Asp Thr Leu Ser Lys Lys Glu  
 20 25 30

Leu Lys Glu Leu Leu Glu Lys Glu Phe Arg Gln Ile Leu Lys Asn Pro  
 35 40 45

Asp Asp Pro Asp Met Val Asp Val Phe Met Asp His Leu Asp Ile Asp

50

55

60

His Asn Lys Lys Ile Asp Phe Thr Glu Phe Leu Leu Met Val Phe Lys  
65 70 75 80

Leu Ala Gln Ala Tyr Tyr Glu Ser Thr Arg Lys Glu Asn Leu Pro Ile  
85 90 95

Ser Gly His Lys His Arg Lys His Ser His His Asp Lys His Glu Asp  
100 105 110

Asn Lys Gln Glu Glu Asn Lys Glu Asn Arg Lys Arg Pro Ser Ser Leu  
115 120 125

Glu Arg Arg Asn Asn Arg Lys Gly Asn Lys Gly Arg Ser Lys Ser Pro  
130 135 140

Arg Glu Thr Gly Gly Lys Arg His Glu Ser Ser Ser Glu Lys Lys Glu  
145 150 155 160

Arg Lys Gly Tyr Ser Pro Thr His Arg Glu Glu Glu Tyr Gly Lys Asn  
165 170 175

His His Asn Ser Ser Lys Lys Glu Lys Asn Lys Thr Glu Asn Thr Arg  
180 185 190

Leu Gly Asp Asn Arg Lys Arg Leu Ser Glu Arg Leu Glu Glu Lys Glu  
195 200 205

Asp Asn Glu Glu Gly Val Tyr Asp Tyr Glu Asn Thr Gly Arg Met Thr  
210 215 220

Gln Lys Trp Ile Gln Ser Gly His Ile Ala Thr Tyr Tyr Thr Ile Gln  
225 230 235 240

Asp Glu Ala Tyr Asp Thr Thr Asp Ser Leu Leu Glu Glu Asn Lys Ile  
245 250 255

Tyr Glu Arg Ser Arg Ser Ser Asp Gly Lys Ser Ser Ser Gln Val Asn  
260 265 270

Arg Ser Arg His Glu Asn Thr Ser Gln Val Pro Leu Gln Glu Ser Arg  
275 280 285

Thr Arg Lys Arg Arg Gly Ser Arg Val Ser Gln Asp Arg Asp Ser Glu  
290 295 300

Gly His Ser Glu Asp Ser Glu Arg His Ser Gly Ser Ala Ser Arg Asn  
305 310 315 320

His His Gly Ser Ala Trp Glu Gln Ser Arg Asp Gly Ser Arg His Pro  
325 330 335



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Arg Ser His Asp 340 Glu Asp Arg Ala Ser 345 His Gly His Ser Ala 350 Asp Ser  
 Ser Arg Gln 355 Ser Gly Thr Arg His 360 Ala Glu Thr Ser Ser 365 Arg Gly Gln  
 Thr Ala 370 Ser Ser His Glu Gln 375 Ala Arg Ser Ser Pro 380 Gly Glu Arg His  
 Gly 385 Ser Gly His Gln Gln 390 Ser Ala Asp Ser Ser 395 Arg His Ser Ala Thr 400  
 Gly Arg Gly Gln Ala 405 Ser Ser Ala Val Ser 410 Asp Arg Gly His Arg 415 Gly  
 Ser Ser Gly Ser 420 Gln Ala Ser Asp Ser 425 Glu Gly His Ser Glu 430 Asn Ser  
 Asp Thr Gln 435 Ser Val Ser Gly His 440 Gly Lys Ala Gly Leu 445 Arg Gln Gln  
 Ser His 450 Gln Glu Ser Thr Arg 455 Gly Arg Ser Gly Glu 460 Arg Ser Gly Arg  
 Ser Gly Ser Ser Leu Tyr 470 Gln Val Ser Thr His 475 Glu Gln Pro Asp Ser 480  
 Ala His Gly Arg Thr 485 Gly Thr Ser Thr Gly 490 Gly Arg Gln Gly Ser 495 His  
 His Glu Gln Ala 500 Arg Asp Ser Ser Arg 505 His Ser Ala Ser Gln 510 Glu Gly  
 Gln Asp Thr 515 Ile Arg Gly His Pro 520 Gly Ser Ser Arg Gly 525 Gly Arg Gln  
 Gly Ser 530 His His Glu Gln Ser 535 Val Asn Arg Ser Gly 540 His Ser Gly Ser  
 His 545 His Ser His Thr Thr 550 Ser Gln Gly Arg Ser 555 Asp Ala Ser His Gly 560  
 Gln Ser Gly Ser Arg 565 Ser Ala Ser Arg Gln 570 Thr Arg Asn Glu Glu 575 Gln  
 Ser Gly Asp Gly 580 Thr Arg His Ser Gly 585 Ser Arg His His Glu 590 Ala Ser  
 Ser Gln Ala 595 Asp Ser Ser Arg His 600 Ser Gln Val Gly Gln 605 Gly Gln Ser

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Ser Gly Pro Arg Thr Ser Arg Asn Gln Gly Ser Ser Val Ser Gln Asp  
610 615 620

Ser Asp Ser Gln Gly His Ser Glu Asp Ser Glu Arg Trp Ser Gly Ser  
625 630 635 640

Ala Ser Arg Asn His His Gly Ser Ala Gln Glu Gln Ser Arg Asp Gly  
645 650 655

Ser Arg His Pro Arg Ser His His Glu Asp Arg Ala Gly His Gly His  
660 665 670

Ser Ala Asp Ser Ser Arg Lys Ser Gly Thr Arg His Thr Gln Asn Ser  
675 680 685

Ser Ser Gly Gln Ala Ala Ser Ser His Glu Gln Ala Arg Ser Ser Ala  
690 695 700

Gly Glu Arg His Gly Ser Arg His Gln Leu Gln Ser Ala Asp Ser Ser  
705 710 715 720

Arg His Ser Gly Thr Gly His Gly Gln Ala Ser Ser Ala Val Arg Asp  
725 730 735

Ser Gly His Arg Gly Ser Ser Gly Ser Gln Ala Thr Asp Ser Glu Gly  
740 745 750

His Ser Glu Asp Ser Asp Thr Gln Ser Val Ser Gly His Gly Gln Ala  
755 760 765

Gly His His Gln Gln Ser His Gln Glu Ser Ala Arg Asp Arg Ser Gly  
770 775 780

Glu Arg Ser Arg Arg Ser Gly Ser Phe Leu Tyr Gln Val Ser Thr His  
785 790 795 800

Lys Gln Ser Glu Ser Ser His Gly Trp Thr Gly Pro Ser Thr Gly Val  
805 810 815

Arg Gln Gly Ser His His Glu Gln Ala Arg Asp Asn Ser Arg His Ser  
820 825 830

Ala Ser Gln Asp Gly Gln Asp Thr Ile Arg Gly His Pro Gly Ser Ser  
835 840 845

Arg Arg Gly Arg Gln Gly Ser His His Glu Gln Ser Val Asp Arg Ser  
850 855 860

Gly His Ser Gly Ser His His Ser His Thr Thr Ser Gln Gly Arg Ser  
865 870 875 880

Asp Ala Ser Arg Gly Gln Ser Gly Ser Arg Ser Ala Ser Arg Thr Thr  
 885 890 895  
  
 Arg Asn Glu Glu Gln Ser Arg Asp Gly Ser Arg His Ser Gly Ser Arg  
 900 905 910  
  
 His His Glu Ala Ser Ser His Ala Asp Ile Ser Arg His Ser Gln Ala  
 915 920 925  
  
 Gly Gln Gly Gln Ser Glu Gly Ser Arg Thr Ser Arg Arg Gln Gly Ser  
 930 935 940  
  
 Ser Val Ser Gln Asp Ser Asp Ser Glu Gly His Ser Glu Asp Ser Glu  
 945 950 955 960  
  
 Arg Trp Ser Gly Ser Ala Ser Arg Asn His Arg Gly Ser Ala Gln Glu  
 965 970 975  
  
 Gln Ser Arg His Gly Ser Arg His Pro Arg Ser His His Glu Asp Arg  
 980 985 990  
  
 Ala Gly His Gly His Ser Ala Asp Ser Ser Arg Gln Ser Gly Thr Pro  
 995 1000 1005  
  
 His Ala Glu Thr Ser Ser Gly Gly Gln Ala Ala Ser Ser His Glu  
 1010 1015 1020  
  
 Gln Ala Arg Ser Ser Pro Gly Glu Arg His Gly Ser Arg His Gln  
 1025 1030 1035  
  
 Gln Ser Ala Asp Ser Ser Arg His Ser Gly Ile Pro Arg Arg Gln  
 1040 1045 1050  
  
 Ala Ser Ser Ala Val Arg Asp Ser Gly His Trp Gly Ser Ser Gly  
 1055 1060 1065  
  
 Ser Gln Ala Ser Asp Ser Glu Gly His Ser Glu Glu Ser Asp Thr  
 1070 1075 1080  
  
 Gln Ser Val Ser Gly His Gly Gln Asp Gly Pro His Gln Gln Ser  
 1085 1090 1095  
  
 His Gln Glu Ser Ala Arg Asp Trp Ser Gly Gly Arg Ser Gly Arg  
 1100 1105 1110  
  
 Ser Gly Ser Phe Ile Tyr Gln Val Ser Thr His Glu Gln Ser Glu  
 1115 1120 1125  
  
 Ser Ala His Gly Arg Thr Arg Thr Ser Thr Gly Arg Arg Gln Gly  
 1130 1135 1140  
  
 Ser His His Glu Gln Ala Arg Asp Ser Ser Arg His Ser Ala Ser  
 1145 1150 1155

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1145															
Gln	Glu	Gly	Gln	Asp	Thr	Ile	Arg	Ala	His	Pro	Gly	Ser	Arg	Arg	
1160															
Gly	Gly	Arg	Gln	Gly	Ser	His	His	Glu	Gln	Ser	Val	Asp	Arg	Ser	
1175															
Gly	His	Ser	Gly	Ser	His	His	Ser	His	Thr	Thr	Ser	Gln	Gly	Arg	
1190															
Ser	Asp	Ala	Ser	His	Gly	Gln	Ser	Gly	Ser	Arg	Ser	Ala	Ser	Arg	
1205															
Gln	Thr	Arg	Lys	Asp	Lys	Gln	Ser	Gly	Asp	Gly	Ser	Arg	His	Ser	
1220															
Gly	Ser	Arg	His	His	Glu	Ala	Ala	Ser	Trp	Ala	Asp	Ser	Ser	Arg	
1235															
His	Ser	Gln	Val	Gly	Gln	Glu	Gln	Ser	Ser	Gly	Ser	Arg	Thr	Ser	
1250															
Arg	His	Gln	Gly	Ser	Ser	Val	Ser	Gln	Asp	Ser	Asp	Ser	Glu	Arg	
1265															
His	Ser	Asp	Asp	Ser	Glu	Arg	Leu	Ser	Gly	Ser	Ala	Ser	Arg	Asn	
1280															
His	His	Gly	Ser	Ser	Arg	Glu	Gln	Ser	Arg	Asp	Gly	Ser	Arg	His	
1295															
Pro	Gly	Phe	His	Gln	Glu	Asp	Arg	Ala	Ser	His	Gly	His	Ser	Ala	
1310															
Asp	Ser	Ser	Arg	Gln	Ser	Gly	Thr	His	His	Thr	Glu	Ser	Ser	Ser	
1325															
His	Gly	Gln	Ala	Val	Ser	Ser	His	Glu	Gln	Ala	Arg	Ser	Ser	Pro	
1340															
Gly	Glu	Arg	His	Gly	Ser	Arg	His	Gln	Gln	Ser	Ala	Asp	Ser	Ser	
1355															
Arg	His	Ser	Gly	Ile	Gly	His	Arg	Gln	Ala	Ser	Ser	Ala	Val	Arg	
1370															
Asp	Ser	Gly	His	Arg	Gly	Ser	Ser	Gly	Ser	Gln	Val	Thr	Asn	Ser	
1385															
Glu	Gly	His	Ser	Glu	Asp	Ser	Asp	Thr	Gln	Ser	Val	Ser	Ala	His	
1400															
1410															

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Gly	Gln	Ala	Gly	Pro	His	Gln	Gln	Ser	His	Lys	Glu	Ser	Ala	Arg
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Gly	Gln	Ser	Gly	Glu	Ser	Ser	Gly	Arg	Ser	Arg	Ser	Phe	Leu	Tyr
	1430					1435					1440			
Gln	Val	Ser	Ser	His	Glu	Gln	Ser	Glu	Ser	Thr	His	Gly	Gln	Thr
	1445					1450					1455			
Ala	Pro	Ser	Thr	Gly	Gly	Arg	Gln	Gly	Ser	Arg	His	Glu	Gln	Ala
	1460					1465					1470			
Arg	Asn	Ser	Ser	Arg	His	Ser	Ala	Ser	Gln	Asp	Gly	Gln	Asp	Thr
	1475					1480					1485			
Ile	Arg	Gly	His	Pro	Gly	Ser	Ser	Arg	Gly	Gly	Arg	Gln	Gly	Ser
	1490					1495					1500			
Tyr	His	Glu	Gln	Ser	Val	Asp	Arg	Ser	Gly	His	Ser	Gly	Tyr	His
	1505					1510					1515			
His	Ser	His	Thr	Thr	Pro	Gln	Gly	Arg	Ser	Asp	Ala	Ser	His	Gly
	1520					1525					1530			
Gln	Ser	Gly	Pro	Arg	Ser	Ala	Ser	Arg	Gln	Thr	Arg	Asn	Glu	Glu
	1535					1540					1545			
Gln	Ser	Gly	Asp	Gly	Ser	Arg	His	Ser	Gly	Ser	Arg	His	His	Glu
	1550					1555					1560			
Pro	Ser	Thr	Arg	Ala	Gly	Ser	Ser	Arg	His	Ser	Gln	Val	Gly	Gln
	1565					1570					1575			
Gly	Glu	Ser	Ala	Gly	Ser	Lys	Thr	Ser	Arg	Arg	Gln	Gly	Ser	Ser
	1580					1585					1590			
Val	Ser	Gln	Asp	Arg	Asp	Ser	Glu	Gly	His	Ser	Glu	Asp	Ser	Glu
	1595					1600					1605			
Arg	Arg	Ser	Glu	Ser	Ala	Ser	Arg	Asn	His	Tyr	Gly	Ser	Ala	Arg
	1610					1615					1620			
Glu	Gln	Ser	Arg	His	Gly	Ser	Arg	Asn	Pro	Arg	Ser	His	Gln	Glu
	1625					1630					1635			
Asp	Arg	Ala	Ser	His	Gly	His	Ser	Ala	Glu	Ser	Ser	Arg	Gln	Ser
	1640					1645					1650			
Gly	Thr	Arg	His	Ala	Glu	Thr	Ser	Ser	Gly	Gly	Gln	Ala	Ala	Ser
	1655					1660					1665			

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Ser Gln Glu Gln Ala Arg Ser Ser Pro Gly Glu Arg His Gly Ser  
 1670 1675 1680  
 Arg His Gln Gln Ser Ala Asp Ser Ser Thr Asp Ser Gly Thr Gly  
 1685 1690 1695  
 Arg Arg Gln Asp Ser Ser Val Val Gly Asp Ser Gly Asn Arg Gly  
 1700 1705 1710  
 Ser Ser Gly Ser Gln Ala Ser Asp Ser Glu Gly His Ser Glu Glu  
 1715 1720 1725  
 Ser Asp Thr Gln Ser Val Ser Ala His Gly Gln Ala Gly Pro His  
 1730 1735 1740  
 Gln Gln Ser His Gln Glu Ser Thr Arg Gly Gln Ser Gly Glu Arg  
 1745 1750 1755  
 Ser Gly Arg Ser Gly Ser Phe Leu Tyr Gln Val Ser Thr His Glu  
 1760 1765 1770  
 Gln Ser Glu Ser Ala His Gly Arg Thr Gly Pro Ser Thr Gly Gly  
 1775 1780 1785  
 Arg Gln Arg Ser Arg His Glu Gln Ala Arg Asp Ser Ser Arg His  
 1790 1795 1800  
 Ser Ala Ser Gln Glu Gly Gln Asp Thr Ile Arg Gly His Pro Gly  
 1805 1810 1815  
 Ser Ser Arg Gly Gly Arg Gln Gly Ser His Tyr Glu Gln Ser Val  
 1820 1825 1830  
 Asp Ser Ser Gly His Ser Gly Ser His His Ser His Thr Thr Ser  
 1835 1840 1845  
 Gln Glu Arg Ser Asp Val Ser Arg Gly Gln Ser Gly Ser Arg Ser  
 1850 1855 1860  
 Val Ser Arg Gln Thr Arg Asn Glu Lys Gln Ser Gly Asp Gly Ser  
 1865 1870 1875  
 Arg His Ser Gly Ser Arg His His Glu Ala Ser Ser Arg Ala Asp  
 1880 1885 1890  
 Ser Ser Arg His Ser Gln Val Gly Gln Gly Gln Ser Ser Gly Pro  
 1895 1900 1905  
 Arg Thr Ser Arg Asn Gln Gly Ser Ser Val Ser Gln Asp Ser Asp  
 1910 1915 1920

Ser Gln Gly His Ser Glu Asp Ser Glu Arg Trp Ser Gly Ser Ala  
1925 1930 1935

Ser Arg Asn His Leu Gly Ser Ala Trp Glu Gln Ser Arg Asp Gly  
1940 1945 1950

Ser Arg His Pro Gly Ser His His Glu Asp Arg Ala Gly His Gly  
1955 1960 1965

His Ser Ala Asp Ser Ser Arg Gln Ser Gly Thr Arg His Thr Glu  
1970 1975 1980

Ser Ser Ser Arg Gly Gln Ala Ala Ser Ser His Glu Gln Ala Arg  
1985 1990 1995

Ser Ser Ala Gly Glu Arg His Gly Ser His His Gln Leu Gln Ser  
2000 2005 2010

Ala Asp Ser Ser Arg His Ser Gly Ile Gly His Gly Gln Ala Ser  
2015 2020 2025

Ser Ala Val Arg Asp Ser Gly His Arg Gly Tyr Ser Gly Ser Gln  
2030 2035 2040

Ala Ser Asp Ser Glu Gly His Ser Glu Asp Ser Asp Thr Gln Ser  
2045 2050 2055

Val Ser Ala Gln Gly Lys Ala Gly Pro His Gln Gln Ser His Lys  
2060 2065 2070

Glu Ser Ala Arg Gly Gln Ser Gly Glu Ser Ser Gly Arg Ser Gly  
2075 2080 2085

Ser Phe Leu Tyr Gln Val Ser Thr His Glu Gln Ser Glu Ser Thr  
2090 2095 2100

His Gly Gln Ser Ala Pro Ser Thr Gly Gly Arg Gln Gly Ser His  
2105 2110 2115

Tyr Asp Gln Ala Gln Asp Ser Ser Arg His Ser Ala Ser Gln Glu  
2120 2125 2130

Gly Gln Asp Thr Ile Arg Gly His Pro Gly Pro Ser Arg Gly Gly  
2135 2140 2145

Arg Gln Gly Ser His Gln Glu Gln Ser Val Asp Arg Ser Gly His  
2150 2155 2160

Ser Gly Ser His His Ser His Thr Thr Ser Gln Gly Arg Ser Asp  
2165 2170 2175

Ala Ser Arg Gly Gln Ser Gly Ser Arg Ser Ala Ser Arg Lys Thr





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Ser Ser Arg His Ser Thr Ser Gln Glu Gly Gln Asp Thr Ile His  
2450 2455 2460

Gly His Pro Gly Ser Ser Ser Gly Gly Arg Gln Gly Ser His Tyr  
2465 2470 2475

Glu Gln Leu Val Asp Arg Ser Gly His Ser Gly Ser His His Ser  
2480 2485 2490

His Thr Thr Ser Gln Gly Arg Ser Asp Ala Ser His Gly His Ser  
2495 2500 2505

Gly Ser Arg Ser Ala Ser Arg Gln Thr Arg Asn Asp Glu Gln Ser  
2510 2515 2520

Gly Asp Gly Ser Arg His Ser Gly Ser Arg His His Glu Ala Ser  
2525 2530 2535

Ser Arg Ala Asp Ser Ser Gly His Ser Gln Val Gly Gln Gly Gln  
2540 2545 2550

Ser Glu Gly Pro Arg Thr Ser Arg Asn Trp Gly Ser Ser Phe Ser  
2555 2560 2565

Gln Asp Ser Asp Ser Gln Gly His Ser Glu Asp Ser Glu Arg Trp  
2570 2575 2580

Ser Gly Ser Ala Ser Arg Asn His His Gly Ser Ala Gln Glu Gln  
2585 2590 2595

Leu Arg Asp Gly Ser Arg His Pro Arg Ser His Gln Glu Asp Arg  
2600 2605 2610

Ala Gly His Gly His Ser Ala Asp Ser Ser Arg Gln Ser Gly Thr  
2615 2620 2625

Arg His Thr Gln Thr Ser Ser Gly Gly Gln Ala Ala Ser Ser His  
2630 2635 2640

Glu Gln Ala Arg Ser Ser Ala Gly Glu Arg His Gly Ser His His  
2645 2650 2655

Gln Gln Ser Ala Asp Ser Ser Arg His Ser Gly Ile Gly His Gly  
2660 2665 2670

Gln Ala Ser Ser Ala Val Arg Asp Ser Gly His Arg Gly Tyr Ser  
2675 2680 2685

Gly Ser Gln Ala Ser Asp Asn Glu Gly His Ser Glu Asp Ser Asp  
2690 2695 2700

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Thr Gln Ser Val Ser Ala His Gly Gln Ala Gly Ser His Gln Gln  
 2705 2710 2715  
 Ser His Gln Glu Ser Ala Arg Gly Arg Ser Gly Glu Thr Ser Gly  
 2720 2725 2730  
 His Ser Gly Ser Phe Leu Tyr Gln Val Ser Thr His Glu Gln Ser  
 2735 2740 2745  
 Glu Ser Ser His Gly Trp Thr Gly Pro Ser Thr Arg Gly Arg Gln  
 2750 2755 2760  
 Gly Ser Arg His Glu Gln Ala Gln Asp Ser Ser Arg His Ser Ala  
 2765 2770 2775  
 Ser Gln Asp Gly Gln Asp Thr Ile Arg Gly His Pro Gly Ser Ser  
 2780 2785 2790  
 Arg Gly Gly Arg Gln Gly Tyr His His Glu His Ser Val Asp Ser  
 2795 2800 2805  
 Ser Gly His Ser Gly Ser His His Ser His Thr Thr Ser Gln Gly  
 2810 2815 2820  
 Arg Ser Asp Ala Ser Arg Gly Gln Ser Gly Ser Arg Ser Ala Ser  
 2825 2830 2835  
 Arg Thr Thr Arg Asn Glu Glu Gln Ser Gly Asp Gly Ser Arg His  
 2840 2845 2850  
 Ser Gly Ser Arg His His Glu Ala Ser Thr His Ala Asp Ile Ser  
 2855 2860 2865  
 Arg His Ser Gln Ala Val Gln Gly Gln Ser Glu Gly Ser Arg Arg  
 2870 2875 2880  
 Ser Arg Arg Gln Gly Ser Ser Val Ser Gln Asp Ser Asp Ser Glu  
 2885 2890 2895  
 Gly His Ser Glu Asp Ser Glu Arg Trp Ser Gly Ser Ala Ser Arg  
 2900 2905 2910  
 Asn His His Gly Ser Ala Gln Glu Gln Leu Arg Asp Gly Ser Arg  
 2915 2920 2925  
 His Pro Arg Ser His Gln Glu Asp Arg Ala Gly His Gly His Ser  
 2930 2935 2940  
 Ala Asp Ser Ser Arg Gln Ser Gly Thr Arg His Thr Gln Thr Ser  
 2945 2950 2955

Ser Gly Gly Gln Ala Ala Ser Ser His Glu Gln Ala Arg Ser Ser  
2960 2965 2970

Ala Gly Glu Arg His Gly Ser His His Gln Gln Ser Ala Asp Ser  
2975 2980 2985

Ser Arg His Ser Gly Ile Gly His Gly Gln Ala Ser Ser Ala Val  
2990 2995 3000

Arg Asp Ser Gly His Arg Gly Tyr Ser Gly Ser Gln Ala Ser Asp  
3005 3010 3015

Asn Glu Gly His Ser Glu Asp Ser Asp Thr Gln Ser Val Ser Ala  
3020 3025 3030

His Gly Gln Ala Gly Ser His Gln Gln Ser His Gln Glu Ser Ala  
3035 3040 3045

Arg Gly Arg Ser Gly Glu Thr Ser Gly His Ser Gly Ser Phe Leu  
3050 3055 3060

Tyr Gln Val Ser Thr His Glu Gln Ser Glu Ser Ser His Gly Trp  
3065 3070 3075

Thr Gly Pro Ser Thr Arg Gly Arg Gln Gly Ser Arg His Glu Gln  
3080 3085 3090

Ala Gln Asp Ser Ser Arg His Ser Ala Ser Gln Tyr Gly Gln Asp  
3095 3100 3105

Thr Ile Arg Gly His Pro Gly Ser Ser Arg Gly Gly Arg Gln Gly  
3110 3115 3120

Tyr His His Glu His Ser Val Asp Ser Ser Gly His Ser Gly Ser  
3125 3130 3135

His His Ser His Thr Thr Ser Gln Gly Arg Ser Asp Ala Ser Arg  
3140 3145 3150

Gly Gln Ser Gly Ser Arg Ser Ala Ser Arg Thr Thr Arg Asn Glu  
3155 3160 3165

Glu Gln Ser Gly Asp Ser Ser Arg His Ser Val Ser Arg His His  
3170 3175 3180

Glu Ala Ser Thr His Ala Asp Ile Ser Arg His Ser Gln Ala Val  
3185 3190 3195

Gln Gly Gln Ser Glu Gly Ser Arg Arg Ser Arg Arg Gln Gly Ser  
3200 3205 3210

Ser Val Ser Gln Asp Ser Asp Ser Glu Gly His Ser Glu Asp Ser

3215

3220

3225

Glu Arg Trp Ser Gly Ser Ala Ser Arg Asn His Arg Gly Ser Val  
 3230 3235 3240

Gln Glu Gln Ser Arg His Gly Ser Arg His Pro Arg Ser His His  
 3245 3250 3255

Glu Asp Arg Ala Gly His Gly His Ser Ala Asp Arg Ser Arg Gln  
 3260 3265 3270

Ser Gly Thr Arg His Ala Glu Thr Ser Ser Gly Gly Gln Ala Ala  
 3275 3280 3285

Ser Ser His Glu Gln Ala Arg Ser Ser Pro Gly Glu Arg His Gly  
 3290 3295 3300

Ser Arg His Gln Gln Ser Ala Asp Ser Ser Arg His Ser Gly Ile  
 3305 3310 3315

Pro Arg Gly Gln Ala Ser Ser Ala Val Arg Asp Ser Arg His Trp  
 3320 3325 3330

Gly Ser Ser Gly Ser Gln Ala Ser Asp Ser Glu Gly His Ser Glu  
 3335 3340 3345

Glu Ser Asp Thr Gln Ser Val Ser Gly His Gly Gln Ala Gly Pro  
 3350 3355 3360

His Gln Gln Ser His Gln Glu Ser Ala Arg Asp Arg Ser Gly Gly  
 3365 3370 3375

Arg Ser Gly Arg Ser Gly Ser Phe Leu Tyr Gln Val Ser Thr His  
 3380 3385 3390

Glu Gln Ser Glu Ser Ala His Gly Arg Thr Arg Thr Ser Thr Gly  
 3395 3400 3405

Arg Arg Gln Gly Ser His His Glu Gln Ala Arg Asp Ser Ser Arg  
 3410 3415 3420

His Ser Ala Ser Gln Glu Gly Gln Asp Thr Ile Arg Gly His Pro  
 3425 3430 3435

Gly Ser Ser Arg Arg Gly Arg Gln Gly Ser His Tyr Glu Gln Ser  
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Val Asp Arg Ser Gly His Ser Gly Ser His His Ser His Thr Thr  
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Ser Gln Gly Arg Ser Asp Ala Ser Arg Gly Gln Ser Gly Ser Arg  
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Ser Ala Ser Arg Gln Thr Arg Asn Asp Glu Gln Ser Gly Asp Gly  
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 Ser Arg His Ser Trp Ser His His His Glu Ala Ser Thr Gln Ala  
 3500 3505 3510  
 Asp Ser Ser Arg His Ser Gln Ser Gly Gln Gly Gln Ser Ala Gly  
 3515 3520 3525  
 Pro Arg Thr Ser Arg Asn Gln Gly Ser Ser Val Ser Gln Asp Ser  
 3530 3535 3540  
 Asp Ser Gln Gly His Ser Glu Asp Ser Glu Arg Trp Ser Gly Ser  
 3545 3550 3555  
 Ala Ser Arg Asn His Arg Gly Ser Ala Gln Glu Gln Ser Arg Asp  
 3560 3565 3570  
 Gly Ser Arg His Pro Thr Ser His His Glu Asp Arg Ala Gly His  
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 Gly His Ser Ala Glu Ser Ser Arg Gln Ser Gly Thr His His Ala  
 3590 3595 3600  
 Glu Asn Ser Ser Gly Gly Gln Ala Ala Ser Ser His Glu Gln Ala  
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 Arg Ser Ser Ala Gly Glu Arg His Gly Ser His His Gln Gln Ser  
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 Ala Asp Ser Ser Arg His Ser Gly Ile Gly His Gly Gln Ala Ser  
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 Ser Ala Val Arg Asp Ser Gly His Arg Gly Ser Ser Gly Ser Gln  
 3650 3655 3660  
 Ala Ser Asp Ser Glu Gly His Ser Glu Asp Ser Asp Thr Gln Ser  
 3665 3670 3675  
 Val Ser Ala His Gly Gln Ala Gly Pro His Gln Gln Ser His Gln  
 3680 3685 3690  
 Glu Ser Thr Arg Gly Arg Ser Ala Gly Arg Ser Gly Arg Ser Gly  
 3695 3700 3705  
 Ser Phe Leu Tyr Gln Val Ser Thr His Glu Gln Ser Glu Ser Ala  
 3710 3715 3720  
 His Gly Arg Ala Gly Pro Ser Thr Gly Gly Arg Gln Gly Ser Arg  
 3725 3730 3735

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His Glu Gln Ala Arg Asp Ser Ser Arg His Ser Ala Ser Gln Glu  
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 Gly Gln Asp Thr Ile Arg Gly His Pro Gly Ser Arg Arg Gly Gly  
 3755 3760 3765  
 Arg Gln Gly Ser Tyr His Glu Gln Ser Val Asp Arg Ser Gly His  
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 Ser Gly Ser His His Ser His Thr Thr Ser Gln Gly Arg Ser Asp  
 3785 3790 3795  
 Ala Ser His Gly Gln Ser Gly Ser Arg Ser Ala Ser Arg Glu Thr  
 3800 3805 3810  
 Arg Asn Glu Glu Gln Ser Gly Asp Gly Ser Arg His Ser Gly Ser  
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 Arg His His Glu Ala Ser Thr Gln Ala Asp Ser Ser Arg His Ser  
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 Gln Ser Gly Gln Gly Glu Ser Ala Gly Ser Arg Arg Ser Arg Arg  
 3845 3850 3855  
 Gln Gly Ser Ser Val Ser Gln Asp Ser Asp Ser Glu Ala Tyr Pro  
 3860 3865 3870  
 Glu Asp Ser Glu Arg Arg Ser Glu Ser Ala Ser Arg Asn His His  
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 Gly Ser Ser Arg Glu Gln Ser Arg Asp Gly Ser Arg His Pro Gly  
 3890 3895 3900  
 Ser Ser His Arg Asp Thr Ala Ser His Val Gln Ser Ser Pro Val  
 3905 3910 3915  
 Gln Ser Asp Ser Ser Thr Ala Lys Glu His Gly His Phe Ser Ser  
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 Leu Ser Gln Asp Ser Ala Tyr His Ser Gly Ile Gln Ser Arg Gly  
 3935 3940 3945  
 Ser Pro His Ser Ser Ser Ser Tyr His Tyr Gln Ser Glu Gly Thr  
 3950 3955 3960  
 Glu Arg Gln Lys Gly Gln Ser Gly Leu Val Trp Arg His Gly Ser  
 3965 3970 3975  
 Tyr Gly Ser Ala Asp Tyr Asp Tyr Gly Glu Ser Gly Phe Arg His  
 3980 3985 3990

Ser Gln His Gly Ser Val Ser Tyr Asn Ser Asn Pro Val Val Phe  
3995 4000 4005

Lys Glu Arg Ser Asp Ile Cys Lys Ala Ser Ala Phe Gly Lys Asp  
4010 4015 4020

His Pro Arg Tyr Tyr Ala Thr Tyr Ile Asn Lys Asp Pro Gly Leu  
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Cys Gly His Ser Ser Asp Ile Ser Lys Gln Leu Gly Phe Ser Gln  
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Ser Gln Arg Tyr Tyr Tyr Tyr Glu  
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<212> DNA  
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gac cag gac aac tcc acg ttg gct ttg ccg tcg gac caa aag atg aaa 96  
Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys  
20 25 30  
aca ggc acg tct ggc agg cag cgc gtg cag gag cag gtg atg atg acc 144  
Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr  
35 40 45  
gtc aag cgg cag aag tcc aag tct tcc cag tcg tcc acc ctg agc cac 192  
Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His  
50 55 60  
tcc aat cga ggt tcc atg tat gat ggc ttg gct gac aat tac aac tat 240  
Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Tyr  
65 70 75 80  
ggg acc acc agc agg agc agc tac tac tcc aag ttc cag gca ggg aat 288  
Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala Gly Asn  
85 90 95  
ggc tca tgg gga tat ccg atc tac aat gga acc ctc aag cgg gag cct 336  
Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu Pro  
100 105 110  
gac aac agg cgc ttc agc tcc tac agc cag atg gag aac tgg agc cgg 384  
Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser Arg  
115 120 125  
cac tac ccc cgg ggc agc tgt aac acc acc ggc gca ggc agc gac atc 432  
His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser Asp Ile  
130 135 140  
tgc ttc atg cag aaa atc aag gcg agc cgc agt gag ccc gac ctc tac 480  
Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu Tyr

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cag Gln	aag Lys	acc Thr	acc Thr 180	cag Gln	aac Asn	cgc Arg	tac Tyr	agc Ser 185	ttt Phe	tac Tyr	agc Ser	acc Thr	tgc Cys 190	agt Ser	ggc Gly	576
cag Gln	aag Lys	gcc Ala 195	ata Ile	aag Lys	aag Lys	tgc Cys	cct Pro 200	gtg Val	cgc Arg	ccg Pro	ccc Pro	tct Ser 205	tgt Cys	gcc Ala	tcc Ser	624
aag Lys	cag Gln 210	gac Asp	cct Pro	gtg Val	tat Tyr	atc Ile 215	ccg Pro	ccc Pro	atc Ile	tcc Ser	tgc Cys 220	aac Asn	aag Lys	gac Asp	ctg Leu	672
tcc Ser 225	ttt Phe	ggc Gly	cac His	tct Ser	agg Arg 230	gcc Ala	agc Ser	tcc Ser	aag Lys	atc Ile 235	tgc Cys	agt Ser	gag Glu	gac Asp	atc Ile 240	720
gag Glu	tgc Cys	agt Ser	ggg Gly	ctg Leu 245	acc Thr	atc Ile	ccc Pro	aag Lys	gct Ala 250	gtg Val	cag Gln	tac Tyr	ctg Leu	agc Ser 255	tcc Ser	768
cag Gln	gat Asp	gag Glu	aag Lys 260	tac Tyr	cag Gln	gcc Ala	att Ile	ggg Gly 265	gcc Ala	tat Tyr	tac Tyr	atc Ile	cag Gln 270	cat His	acc Thr	816
tgc Cys	ttc Phe	cag Gln 275	gat Asp	gaa Glu	tct Ser	gcc Ala	aag Lys 280	caa Gln	cag Gln	gtc Val	tat Tyr	cag Gln 285	ctg Leu	gga Gly	ggc Gly	864
atc Ile	tgc Cys 290	aag Lys	ctg Leu	gtg Val	gac Asp	ctc Leu 295	ctc Leu	cgc Arg	agc Ser	ccc Pro	aac Asn 300	cag Gln	aac Asn	gtc Val	cag Gln	912
cag Gln 305	gcc Ala	gcg Ala	gca Ala	ggg Gly	gcc Ala 310	ctg Leu	cgc Arg	aac Asn	ctg Leu	gtg Val 315	ttc Phe	agg Arg	agc Ser	acc Thr	acc Thr 320	960
aac Asn	aag Lys	ctg Leu	gag Glu	acc Thr 325	cgg Arg	agg Arg	cag Gln	aat Asn	ggg Gly 330	atc Ile	cgc Arg	gag Glu	gca Ala	gtc Val 335	agc Ser	1008
ctc Leu	ctg Leu	agg Arg	aga Arg 340	acc Thr	ggg Gly	aac Asn	gcc Ala	gag Glu 345	atc Ile	cag Gln	aag Lys	cag Gln	ctg Leu 350	act Thr	ggg Gly	1056
ctg Leu	ctc Leu	tgg Trp 355	aac Asn	ctg Leu	tct Ser	tcc Ser	act Thr 360	gac Asp	gag Glu	ctg Leu	aag Lys	gag Glu 365	gaa Glu	ctc Leu	att Ile	1104
gcc Ala 370	gac Asp	gcc Ala	ctg Leu	cct Pro	gtt Val	ctg Leu 375	gcc Ala	gac Asp	cgc Arg	gtc Val	atc Ile 380	att Ile	ccc Pro	ttc Phe	tct Ser	1152
ggc Gly 385	tgg Trp	tgc Cys	gat Asp	ggc Gly	aat Asn 390	agc Ser	aac Asn	atg Met	tcc Ser	cgg Arg 395	gaa Glu	gtg Val	gtg Val	gac Asp	cct Pro 400	1200
gag Glu	gtc Val	ttc Phe	ttc Phe	aat Asn 405	gcc Ala	aca Thr	ggc Gly	tgc Cys	ttg Leu 410	agg Arg	aac Asn	ctg Leu	agc Ser	tcg Ser 415	gcc Ala	1248
gat Asp	gca Ala	ggc Gly	cgc Arg 420	cag Gln	acc Thr	atg Met	cgt Arg	aac Asn 425	tac Tyr	tca Ser	ggg Gly	ctc Leu	att Ile 430	gat Asp	tcc Ser	1296



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ctc Leu	atg Met	gcc Ala 435	tat Tyr	gtc Val	cag Gln	aac Asn	tgt Cys 440	gta Val	gcg Ala	gcc Ala	agc Ser	cgc Arg 445	tgt Cys	gac Asp	gac Asp	1344
aag Lys	tct Ser 450	gtg Val	gaa Glu	aac Asn	tgc Cys	atg Met 455	tgt Cys	gtt Val	ctg Leu	cac His	aac Asn 460	ctc Leu	tcc Ser	tac Tyr	cgc Arg	1392
ctg Leu 465	gac Asp	gcc Ala	gag Glu	gtg Val	ccc Pro 470	acc Thr	cgc Arg	tac Tyr	cgc Arg	cag Gln 475	ctg Leu	gag Glu	tat Tyr	aac Asn	gcc Ala 480	1440
cgc Arg	aac Asn	gcc Ala	tac Tyr 485	acc Thr	gag Glu	aag Lys	tcc Ser	tcc Ser	act Thr 490	ggc Gly	tgc Cys	ttc Phe	agc Ser	aac Asn 495	aag Lys	1488
agc Ser	gac Asp	aag Lys	atg Met 500	atg Met	aac Asn	aac Asn	aac Asn	tat Tyr 505	gac Asp	tgc Cys	ccc Pro	ctg Leu	cct Pro 510	gag Glu	gaa Glu	1536
gag Glu	acc Thr 515	aac Asn	ccc Pro	aag Lys	ggc Gly	agc Ser	ggc Gly 520	tgg Trp	ttg Leu	tac Tyr	cat His	tca Ser 525	gat Asp	gcc Ala	atc Ile	1584
cgc Arg	acc Thr 530	tac Tyr	ctg Leu	aac Asn	ctc Leu	atg Met 535	ggc Gly	aag Lys	agc Ser	aag Lys	aaa Lys 540	gat Asp	gct Ala	acc Thr	ctg Leu	1632
gag Glu 545	gcc Ala	tgt Cys	gct Ala	ggt Gly	gcc Ala 550	ctg Leu	cag Gln	aac Asn	ctg Leu	aca Thr 555	gcc Ala	agc Ser	aag Lys	ggg Gly	ctg Leu 560	1680
atg Met	tcc Ser	agt Ser	ggc Gly 565	atg Met	agc Ser	cag Gln	ttg Leu	att Ile	ggg Gly 570	ctg Leu	aag Lys	gaa Glu	aag Lys	ggc Gly 575	ctg Leu	1728
cca Pro	caa Gln	att Ile	gcc Ala 580	cgc Arg	ctc Leu	ctg Leu	caa Gln	tct Ser 585	ggc Gly	aac Asn	tct Ser	gat Asp	gtg Val 590	gtg Val	cgg Arg	1776
tcc Ser	gga Gly 595	gcc Ala	tcc Ser	ctc Leu	ctg Leu	agc Ser	aac Asn 600	atg Met	tcc Ser	cgc Arg	cac His	cct Pro 605	ctg Leu	ctg Leu	cac His	1824
aga Arg	gtg Val 610	atg Met	ggg Gly	aac Asn	cag Gln	gtg Val 615	ttc Phe	ccg Pro	gag Glu	gtg Val	acc Thr 620	agg Arg	ctc Leu	ctc Leu	acc Thr	1872
agc Ser 625	cac His	act Thr	ggc Gly	aat Asn	acc Thr 630	agc Ser	aac Asn	tcc Ser	gaa Glu	gac Asp 635	atc Ile	ttg Leu	tcc Ser	tcg Ser	gcc Ala 640	1920
tgc Cys	tac Tyr	act Thr	gtg Val	agg Arg 645	aac Asn	ctg Leu	atg Met	gcc Ala	tcg Ser 650	cag Gln	cca Pro	caa Gln	ctg Leu	gcc Ala 655	aag Lys	1968
cag Gln	tac Tyr	ttc Phe	tcc Ser 660	agc Ser	agc Ser	atg Met	ctc Leu	aac Asn 665	aac Asn	atc Ile	atc Ile	aac Asn	ctg Leu 670	tgc Cys	cga Arg	2016
agc Ser	agt Ser	gcc Ala 675	tca Ser	ccc Pro	aag Lys	gcc Ala	gca Ala 680	gaa Glu	gct Ala	gcc Ala	cgg Arg	ctt Leu 685	ctc Leu	ctg Leu	tct Ser	2064
gac Asp	atg Met 690	tgg Trp	tcc Ser	agc Ser	aag Lys	gaa Glu 695	ctg Leu	cag Gln	ggg Gly	gtc Val	ctc Leu 700	aga Arg	cag Gln	caa Gln	ggg Gly	2112

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aac ttc acc tcc cga ttc 2178  
Asn Phe Thr Ser Arg Phe  
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Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr  
35 40 45

Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His  
50 55 60

Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Tyr  
65 70 75 80

Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala Gly Asn  
85 90 95

Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu Pro  
100 105 110

Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser Arg  
115 120 125

His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser Asp Ile  
130 135 140

Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu Tyr  
145 150 155 160

Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser Lys Gly  
165 170 175

Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys Ser Gly  
180 185 190

Gln Lys Ala Ile Lys Lys Cys Pro Val Arg Pro Pro Ser Cys Ala Ser  
195 200 205

Lys Gln Asp Pro Val Tyr Ile Pro Pro Ile Ser Cys Asn Lys Asp Leu  
Seite 70

210

215

220

Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu Asp Ile  
 225 230 235 240

Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu Ser Ser  
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Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln His Thr  
 260 265 270

Cys Phe Gln Asp Glu Ser Ala Lys Gln Gln Val Tyr Gln Leu Gly Gly  
 275 280 285

Ile Cys Lys Leu Val Asp Leu Leu Arg Ser Pro Asn Gln Asn Val Gln  
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Gln Ala Ala Ala Gly Ala Leu Arg Asn Leu Val Phe Arg Ser Thr Thr  
 305 310 315 320

Asn Lys Leu Glu Thr Arg Arg Gln Asn Gly Ile Arg Glu Ala Val Ser  
 325 330 335

Leu Leu Arg Arg Thr Gly Asn Ala Glu Ile Gln Lys Gln Leu Thr Gly  
 340 345 350

Leu Leu Trp Asn Leu Ser Ser Thr Asp Glu Leu Lys Glu Glu Leu Ile  
 355 360 365

Ala Asp Ala Leu Pro Val Leu Ala Asp Arg Val Ile Ile Pro Phe Ser  
 370 375 380

Gly Trp Cys Asp Gly Asn Ser Asn Met Ser Arg Glu Val Val Asp Pro  
 385 390 395 400

Glu Val Phe Phe Asn Ala Thr Gly Cys Leu Arg Asn Leu Ser Ser Ala  
 405 410 415

Asp Ala Gly Arg Gln Thr Met Arg Asn Tyr Ser Gly Leu Ile Asp Ser  
 420 425 430

Leu Met Ala Tyr Val Gln Asn Cys Val Ala Ala Ser Arg Cys Asp Asp  
 435 440 445

Lys Ser Val Glu Asn Cys Met Cys Val Leu His Asn Leu Ser Tyr Arg  
 450 455 460

Leu Asp Ala Glu Val Pro Thr Arg Tyr Arg Gln Leu Glu Tyr Asn Ala  
 465 470 475 480

Arg Asn Ala Tyr Thr Glu Lys Ser Ser Thr Gly Cys Phe Ser Asn Lys  
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Ser Asp Lys Met Met Asn Asn Asn Tyr Asp Cys Pro Leu Pro Glu Glu  
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Glu Thr Asn Pro Lys Gly Ser Gly Trp Leu Tyr His Ser Asp Ala Ile  
515 520 525

Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys Lys Asp Ala Thr Leu  
530 535 540

Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr Ala Ser Lys Gly Leu  
545 550 555 560

Met Ser Ser Gly Met Ser Gln Leu Ile Gly Leu Lys Glu Lys Gly Leu  
565 570 575

Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn Ser Asp Val Val Arg  
580 585 590

Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His Pro Leu Leu His  
595 600 605

Arg Val Met Gly Asn Gln Val Phe Pro Glu Val Thr Arg Leu Leu Thr  
610 615 620

Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp Ile Leu Ser Ser Ala  
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Cys Tyr Thr Val Arg Asn Leu Met Ala Ser Gln Pro Gln Leu Ala Lys  
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Gln Tyr Phe Ser Ser Ser Met Leu Asn Asn Ile Ile Asn Leu Cys Arg  
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Ser Ser Ala Ser Pro Lys Ala Ala Glu Ala Ala Arg Leu Leu Leu Ser  
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Asp Met Trp Ser Ser Lys Gly Leu Gln Gly Val Leu Arg Gln Gln Gly  
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Asn Phe Thr Ser Arg Phe  
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Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys
20 25 30

aca ggc acg tct ggc agg cag cgc gtg cag gag cag gtg atg atg acc      144
Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr
35 40 45

gtc aag cgg cag aag tcc aag tct tcc cag tcg tcc acc ctg agc cac      192
Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His
50 55 60

tcc aat cga ggt tcc atg tat gat ggc ttg gct gac aat tac aac tat      240
Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Tyr
65 70 75 80

ggg acc acc agc agg agc agc tac tac tcc aag ttc cag gca ggg aat      288
Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala Gly Asn
85 90 95

ggc tca tgg gga tat ccg atc tac aat gga acc ctc aag cgg gag cct      336
Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu Pro
100 105 110

gac aac agg cgc ttc agc tcc tac agc cag atg gag aac tgg agc cgg      384
Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser Arg
115 120 125

cac tac ccc cgg ggc agc tgt aac acc acc ggc gca ggc agc gac atc      432
His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser Asp Ile
130 135 140

tgc ttc atg cag aaa atc aag gcg agc cgc agt gag ccc gac ctc tac      480
Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu Tyr
145 150 155 160

tgt gac cca cgg ggc acc ctg cgc aag ggc acg ctg ggc agc aag ggc      528
Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser Lys Gly
165 170 175

cag aag acc acc cag aac cgc tac agc ttt tac agc acc tgc agt ggt      576
Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys Ser Gly
180 185 190

cag aag gcc ata aag aag tgc cct gtg cgc ccg ccc tct tgt gcc tcc      624
Gln Lys Ala Ile Lys Lys Cys Pro Val Arg Pro Pro Ser Cys Ala Ser
195 200 205

aag cag gac cct gtg tat atc ccg ccc atc tcc tgc aac aag gac ctg      672
Lys Gln Asp Pro Val Tyr Ile Pro Pro Ile Ser Cys Asn Lys Asp Leu
210 215 220

tcc ttt ggc cac tct agg gcc agc tcc aag atc tgc agt gag gac atc      720
Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu Asp Ile
225 230 235 240

gag tgc agt ggg ctg acc atc ccc aag gct gtg cag tac ctg agc tcc      768
Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu Ser Ser
245 250 255

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tgc	ttc	cag	gat	gaa	tct	gcc	aag	caa	cag	gtc	tat	cag	ctg	gga	ggc	864
Cys	Phe	Gln	Asp	Glu	Ser	Ala	Lys	Gln	Gln	Val	Tyr	Gln	Leu	Gly	Gly	
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atc	tgc	aag	ctg	gtg	gac	ctc	ctc	cgc	agc	ccc	aac	cag	aac	gtc	cag	912
Ile	Cys	Lys	Leu	Val	Asp	Leu	Leu	Arg	Ser	Pro	Asn	Gln	Asn	Val	Gln	
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Leu	Leu	Arg	Arg	Thr	Gly	Asn	Ala	Glu	Ile	Gln	Lys	Gln	Leu	Thr	Gly	
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ctg	ctc	tgg	aac	ctg	tct	tcc	act	gac	gag	ctg	aag	gag	gaa	ctc	att	1104
Leu	Leu	Trp	Asn	Leu	Ser	Ser	Thr	Asp	Glu	Leu	Lys	Glu	Glu	Leu	Ile	
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gcc	gac	gcc	ctg	cct	gtt	ctg	gcc	gac	cgc	gtc	atc	att	ccc	ttc	tct	1152
Ala	Asp	Ala	Leu	Pro	Val	Leu	Ala	Asp	Arg	Val	Ile	Ile	Pro	Phe	Ser	
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Gly	Trp	Cys	Asp	Gly	Asn	Ser	Asn	Met	Ser	Arg	Glu	Val	Val	Asp	Pro	
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gag	gtc	ttc	ttc	aat	gcc	aca	ggc	tgc	ttg	aga	aag	aga	ctg	ggc	atg	1248
Glu	Val	Phe	Phe	Asn	Ala	Thr	Gly	Cys	Leu	Arg	Lys	Arg	Leu	Gly	Met	
				405				410						415		
cgg	gag	ctt	ctg	gct	ctt	gtt	ccg	caa	agg	gcc	act	agt	agc	agg	gtg	1296
Arg	Glu	Leu	Leu	Ala	Leu	Val	Pro	Gln	Arg	Ala	Thr	Ser	Ser	Arg	Val	
			420					425					430			
aac	ctg	agc	tcg	gcc	gat	gca	ggc	cgc	cag	acc	atg	cgt	aac	tac	tca	1344
Asn	Leu	Ser	Ser	Ala	Asp	Ala	Gly	Arg	Gln	Thr	Met	Arg	Asn	Tyr	Ser	
		435					440					445				
ggg	ctc	att	gat	tcc	ctc	atg	gcc	tat	gtc	cag	aac	tgt	gta	gcg	gcc	1392
Gly	Leu	Ile	Asp	Ser	Leu	Met	Ala	Tyr	Val	Gln	Asn	Cys	Val	Ala	Ala	
	450					455					460					
agc	cgc	tgt	gac	gac	aag	tct	gtg	gaa	aac	tgc	atg	tgt	gtt	ctg	cac	1440
Ser	Arg	Cys	Asp	Asp	Lys	Ser	Val	Glu	Asn	Cys	Met	Cys	Val	Leu	His	
465				470						475					480	
aac	ctc	tcc	tac	cgc	ctg	gac	gcc	gag	gtg	ccc	acc	cgc	tac	cgc	cag	1488
Asn	Leu	Ser	Tyr	Arg	Leu	Asp	Ala	Glu	Val	Pro	Thr	Arg	Tyr	Arg	Gln	
				485				490						495		
ctg	gag	tat	aac	gcc	cgc	aac	gcc	tac	acc	gag	aag	tcc	tcc	act	ggc	1536
Leu	Glu	Tyr	Asn	Ala	Arg	Asn	Ala	Tyr	Thr	Glu	Lys	Ser	Ser	Thr	Gly	
			500					505					510			
tgc	ttc	agc	aac	aag	agc	gac	aag	atg	atg	aac	aac	aac	tat	gac	tgc	1584
Cys	Phe	Ser	Asn	Lys	Ser	Asp	Lys	Met	Met	Asn	Asn	Asn	Tyr	Asp	Cys	
		515					520					525				
ccc	ctg	cct	gag	gaa	gag	acc	aac	ccc	aag	ggc	agc	ggc	tgg	ttg	tac	1632
Pro	Leu	Pro	Glu	Glu	Glu	Thr	Asn	Pro	Lys	Gly	Ser	Gly	Trp	Leu	Tyr	

530	535	540	
cat tca gat gcc atc cgc acc tac ctg aac ctc atg ggc aag agc aag His Ser Asp Ala Ile Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys 545 550 555 560			1680
aaa gat gct acc ctg gag gcc tgt gct ggt gcc ctg cag aac ctg aca Lys Asp Ala Thr Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr 565 570 575			1728
gcc agc aag ggg ctg atg tcc agt ggc atg agc cag ttg att ggg ctg Ala Ser Lys Gly Leu Met Ser Ser Gly Met Ser Gln Leu Ile Gly Leu 580 585 590			1776
aag gaa aag ggc ctg cca caa att gcc cgc ctc ctg caa tct ggc aac Lys Glu Lys Gly Leu Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn 595 600 605			1824
tct gat gtg gtg cgg tcc gga gcc tcc ctc ctg agc aac atg tcc cgc Ser Asp Val Val Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg 610 615 620			1872
cac cct ctg ctg cac aga gtg atg ggg aac cag gtg ttc ccg gag gtg His Pro Leu Leu His Arg Val Met Gly Asn Gln Val Phe Pro Glu Val 625 630 635 640			1920
acc agg ctc ctc acc agc cac act ggc aat acc agc aac tcc gaa gac Thr Arg Leu Leu Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp 645 650 655			1968
atc ttg tcc tcg gcc tgc tac act gtg agg aac ctg atg gcc tcg cag Ile Leu Ser Ser Ala Cys Tyr Thr Val Arg Asn Leu Met Ala Ser Gln 660 665 670			2016
cca caa ctg gcc aag cag tac ttc tcc agc agc atg ctc aac aac atc Pro Gln Leu Ala Lys Gln Tyr Phe Ser Ser Ser Met Leu Asn Asn Ile 675 680 685			2064
atc aac ctg tgc cga agc agt gcc tca ccc aag gcc gca gaa gct gcc Ile Asn Leu Cys Arg Ser Ser Ala Ser Pro Lys Ala Ala Glu Ala Ala 690 695 700			2112
cgg ctt ctc ctg tct gac atg tgg tcc agc aag gaa ctg cag ggt gtc Arg Leu Leu Leu Ser Asp Met Trp Ser Ser Lys Glu Leu Gln Gly Val 705 710 715 720			2160
ctc aga cag caa ggt ttc gat agg aac atg ctg gga acc tta gct ggg Leu Arg Gln Gln Gly Phe Asp Arg Asn Met Leu Gly Thr Leu Ala Gly 725 730 735			2208
gcc aac agc ctc agg aac ttc acc tcc cga ttc Ala Asn Ser Leu Arg Asn Phe Thr Ser Arg Phe 740 745			2241

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 <212> PRT  
 <213> Homo sapiens

<400> 20

Met Asn His Ser Pro Leu Lys Thr Ala Leu Ala Tyr Glu Cys Phe Gln  
 1 5 10 15

Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys  
 20 25 30

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Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr  
35 40 45

Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His  
50 55 60

Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Tyr  
65 70 75 80

Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala Gly Asn  
85 90 95

Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu Pro  
100 105 110

Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser Arg  
115 120 125

His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser Asp Ile  
130 135 140

Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu Tyr  
145 150 155 160

Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser Lys Gly  
165 170 175

Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys Ser Gly  
180 185 190

Gln Lys Ala Ile Lys Lys Cys Pro Val Arg Pro Pro Ser Cys Ala Ser  
195 200 205

Lys Gln Asp Pro Val Tyr Ile Pro Pro Ile Ser Cys Asn Lys Asp Leu  
210 215 220

Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu Asp Ile  
225 230 235 240

Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu Ser Ser  
245 250 255

Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln His Thr  
260 265 270

Cys Phe Gln Asp Glu Ser Ala Lys Gln Gln Val Tyr Gln Leu Gly Gly  
275 280 285

Ile Cys Lys Leu Val Asp Leu Leu Arg Ser Pro Asn Gln Asn Val Gln  
290 295 300



Gln Ala Ala Ala Gly Ala Leu Arg Asn Leu Val Phe Arg Ser Thr Thr  
305 310 315 320

Asn Lys Leu Glu Thr Arg Arg Gln Asn Gly Ile Arg Glu Ala Val Ser  
325 330 335

Leu Leu Arg Arg Thr Gly Asn Ala Glu Ile Gln Lys Gln Leu Thr Gly  
340 345 350

Leu Leu Trp Asn Leu Ser Ser Thr Asp Glu Leu Lys Glu Glu Leu Ile  
355 360 365

Ala Asp Ala Leu Pro Val Leu Ala Asp Arg Val Ile Ile Pro Phe Ser  
370 375 380

Gly Trp Cys Asp Gly Asn Ser Asn Met Ser Arg Glu Val Val Asp Pro  
385 390 395 400

Glu Val Phe Phe Asn Ala Thr Gly Cys Leu Arg Lys Arg Leu Gly Met  
405 410 415

Arg Glu Leu Leu Ala Leu Val Pro Gln Arg Ala Thr Ser Ser Arg Val  
420 425 430

Asn Leu Ser Ser Ala Asp Ala Gly Arg Gln Thr Met Arg Asn Tyr Ser  
435 440 445

Gly Leu Ile Asp Ser Leu Met Ala Tyr Val Gln Asn Cys Val Ala Ala  
450 455 460

Ser Arg Cys Asp Asp Lys Ser Val Glu Asn Cys Met Cys Val Leu His  
465 470 475 480

Asn Leu Ser Tyr Arg Leu Asp Ala Glu Val Pro Thr Arg Tyr Arg Gln  
485 490 495

Leu Glu Tyr Asn Ala Arg Asn Ala Tyr Thr Glu Lys Ser Ser Thr Gly  
500 505 510

Cys Phe Ser Asn Lys Ser Asp Lys Met Met Asn Asn Asn Tyr Asp Cys  
515 520 525

Pro Leu Pro Glu Glu Glu Thr Asn Pro Lys Gly Ser Gly Trp Leu Tyr  
530 535 540

His Ser Asp Ala Ile Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys  
545 550 555 560

Lys Asp Ala Thr Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr  
565 570 575

Ala Ser Lys Gly Leu Met Ser Ser Gly Met Ser Gln Leu Ile Gly Leu  
Seite 77

Lys Glu Lys Gly Leu Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn  
595 600 605

Ser Asp Val Val Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg  
610 615 620

His Pro Leu Leu His Arg Val Met Gly Asn Gln Val Phe Pro Glu Val  
625 630 635 640

Thr Arg Leu Leu Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp  
645 650 655

Ile Leu Ser Ser Ala Cys Tyr Thr Val Arg Asn Leu Met Ala Ser Gln  
660 665 670

Pro Gln Leu Ala Lys Gln Tyr Phe Ser Ser Ser Met Leu Asn Asn Ile  
675 680 685

Ile Asn Leu Cys Arg Ser Ser Ala Ser Pro Lys Ala Ala Glu Ala Ala  
690 695 700

Arg Leu Leu Leu Ser Asp Met Trp Ser Ser Lys Glu Leu Gln Gly Val  
705 710 715 720

Leu Arg Gln Gln Gly Phe Asp Arg Asn Met Leu Gly Thr Leu Ala Gly  
725 730 735

Ala Asn Ser Leu Arg Asn Phe Thr Ser Arg Phe  
740 745

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<211> 2385  
<212> DNA  
<213> Mus musculus

<220>  
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<222> (1)..(2385)

<400> 21		
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Met Ala Val Pro Gly Ser Leu Ala Glu Cys Gly Tyr Ile Arg Thr Val		
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ctg ggc cag cag atc ctg ggt cac ctg gac agc tcc agc ctg gcc ttg		96
Leu Gly Gln Gln Ile Leu Gly His Leu Asp Ser Ser Ser Leu Ala Leu		
20 25 30		
ccc tcc gag gcc aga ctg agg ctg gcc ggc agc agc ggc cgc ggc gac		144
Pro Ser Glu Ala Arg Leu Arg Leu Ala Gly Ser Ser Gly Arg Gly Asp		
35 40 45		
ccg gcg gcc cgg agc cag cgg atc cag gag cag gtg cag cag acc ctg		192
Pro Ala Ala Arg Ser Gln Arg Ile Gln Glu Gln Val Gln Gln Thr Leu		
50 55 60		

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gcc Ala 65	cgc Arg	cgg Arg	ggc Gly	cgg Arg	agc Ser 70	tct Ser	gcg Ala	gtc Val	agc Ser	ggg Gly 75	aac Asn	ctt Leu	cac His	cga Arg	acc Thr 80	240
agc Ser	agt Ser	gtc Val	cct Pro	gag Glu 85	tat Tyr	gtc Val	tac Tyr	aag Lys	cta Leu 90	cac His	gtg Val	gtt Val	gag Glu	aat Asn 95	gac Asp	288
ttt Phe	gtt Val	gga Gly	cgg Arg 100	cag Gln	tca Ser	cct Pro	gtc Val	act Thr 105	agg Arg	gac Asp	tat Tyr	gac Asp	atg Met 110	ctt Leu	aag Lys	336
gct Ala	gga Gly	atg Met 115	act Thr	gcc Ala	act Thr	tat Tyr	gga Gly 120	agt Ser	cgc Arg	tgg Trp	ggg Gly	aga Arg 125	gca Ala	gca Ala	gca Ala	384
cag Gln	tac Tyr 130	agt Ser	tcc Ser	cag Gln	aag Lys	tca Ser 135	gtg Val	gag Glu	gag Glu	aga Arg	tcc Ser 140	tgg Trp	agg Arg	cag Gln	cct Pro	432
ctg Leu 145	agg Arg	aga Arg	ctt Leu	gag Glu	att Ile 150	tcc Ser	cca Pro	gat Asp	agc Ser	agc Ser 155	ccg Pro	gag Glu	aga Arg	gcc Ala	cac His 160	480
tat Tyr	ggg Gly	cac His	agc Ser	gaa Glu 165	tac Tyr	cag Gln	tat Tyr	gcc Ala	tgg Trp 170	cgg Arg	agc Ser	cac His	gtg Val	gtg Val 175	cct Pro	528
ggg Gly	ggg Gly	cgc Arg	ctc Leu 180	acc Thr	ctg Leu	cca Pro	cgc Arg	tat Tyr 185	gct Ala	cgc Arg	tca Ser	gag Glu	atc Ile 190	ctg Leu	ggc Gly	576
cta Leu	cgc Arg	cag Gln 195	gct Ala	ggc Gly	aca Thr	gcc Ala	cgc Arg 200	agg Arg	cca Pro	cct Pro	ggg Gly	tgc Cys 205	ggg Gly	tca Ser	ttc Phe	624
agc Ser	gat Asp 210	gct Ala	gtc Val	ttc Phe	gac Asp	aat Asn 215	ggc Gly	cca Pro	ctc Leu	aag Lys	ccc Pro 220	aca Thr	atg Met	ccc Pro	acc Thr	672
cac His 225	cct Pro	cct Pro	ggc Gly	acc Thr	agc Ser 230	cac His	agt Ser	gcg Ala	ggc Gly	agc Ser 235	ttg Leu	ttg Leu	gaa Glu	gag Glu	acc Thr 240	720
act Thr	gtg Val	cgc Arg	gtg Val	agc Ser 245	cag Gln	gct Ala	cgg Arg	ctt Leu	caa Gln 250	agc Ser	acg Thr	cag Gln	agc Ser	aga Arg 255	acc Thr	768
gcc Ala	cgc Arg	tcc Ser	tcc Ser 260	tgg Trp	ccc Pro	agg Arg	agc Ser	tca Ser 265	gtc Val	cgc Arg	agt Ser	agc Ser	ctg Leu 270	cgg Arg	gag Glu	816
cca Pro	gga Gly	aga Arg 275	atg Met	ctg Leu	acc Thr	acc Thr	gca Ala 280	ggc Gly	cag Gln	gct Ala	gcc Ala	gtg Val 285	ggc Gly	agc Ser	ggg Gly	864
gat Asp	gca Ala 290	cat His	ggg Gly	gac Asp	agg Arg	agt Ser 295	gtc Val	ttc Phe	gct Ala	gac Asp	gcc Ala 300	cag Gln	ctg Leu	ggg Gly	aat Asn	912
gca Ala 305	gac Asp	atc Ile	gaa Glu	atg Met	acc Thr 310	ttg Leu	gag Glu	aga Arg	gct Ala	gtg Val 315	aat Asn	atg Met	ctg Leu	gat Asp	gca Ala 320	960
gac Asp	cat His	gta Val	cca Pro	gta Val 325	tcc Ser	aag Lys	atc Ile	tct Ser	gcc Ala 330	gca Ala	gct Ala	acc Thr	ttc Phe	ata Ile 335	cag Gln	1008

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cat gag agc ttc caa aaa tct gaa gca cgg aaa agg gtc aat caa ctt	1056
His Glu Ser Phe 340 Gln Lys Ser Glu Ala Arg Lys Arg Val Asn Gln Leu 350	
cga ggc atc cct aag ctt cta caa ctg ctc aaa ctt cag aac gaa gat	1104
Arg Gly Ile Pro Lys Leu Leu Gln Leu Leu Lys Leu Gln Asn Glu Asp 365	
gtt caa cgg gct gct tgt ggg gcc ttg aga aac ttg gta ttt gaa gac	1152
Val Gln Arg Ala Ala Cys Gly Ala Leu Arg Asn Leu Val Phe Glu Asp 375 380	
aat gat aac aag ttg gag gta gct gaa ctg aat gga gtg cct cgg cta	1200
Asn Asp Asn Lys Leu Glu Val Ala Glu Leu Asn Gly Val Pro Arg Leu 385 395 400	
ctg cag gtg ctg aag caa acc aga gac ttg gag aca aaa aag caa ata	1248
Leu Gln Val Leu Lys Gln Thr Arg Asp Leu Glu Thr Lys Lys Gln Ile 405 415	
aca ggt ttg ctc tgg aac ctg tcc tct agt gat aaa ctc aag cat ctc	1296
Thr Gly Leu Leu Trp Asn Leu Ser Ser Ser Asp Lys Leu Lys His Leu 420 425 430	
atg ata aca gaa gcc ttg ctc acc ttg aca gag agt gtc atc atc ccc	1344
Met Ile Thr Glu Ala Leu Leu Thr Leu Thr Glu Ser Val Ile Ile Pro 435 440 445	
ttc tcc ggg tgg cct gaa ggc gac tac ccc aaa gcc aat ggc ttg ctt	1392
Phe Ser Gly Trp Pro Glu Gly Asp Tyr Pro Lys Ala Asn Gly Leu Leu 450 455 460	
gat ttt gat ata ttc tac aat gtc act gga tgc cta agg aac atg agc	1440
Asp Phe Asp Ile Phe Tyr Asn Val Thr Gly Cys Leu Arg Asn Met Ser 465 470 475 480	
tct gct ggc ccc gat ggg agg aag atg atg aga agg tgt gat ggt ctc	1488
Ser Ala Gly Pro Asp Gly Arg Lys Met Met Arg Arg Cys Asp Gly Leu 485 490 495	
att gac tca ttg gtc cac tat gtc aga gga act att gca gac tac cag	1536
Ile Asp Ser Leu Val His Tyr Val Arg Gly Thr Ile Ala Asp Tyr Gln 500 505 510	
cca gat gat aag gcc aca gag aac tgt gtg tgc att ctt cat aac ctc	1584
Pro Asp Asp Lys Ala Thr Glu Asn Cys Val Cys Ile Leu His Asn Leu 515 520 525	
tcc tac cag ctg gag gca gag ctc cca gag aaa tat tcc cag agt atc	1632
Ser Tyr Gln Leu Glu Ala Glu Leu Pro Glu Lys Tyr Ser Gln Ser Ile 530 535 540	
tac atg caa aac cgg aat atc cag act aac agt aac aaa agt att ggg	1680
Tyr Met Gln Asn Arg Asn Ile Gln Thr Asn Ser Asn Lys Ser Ile Gly 545 550 555 560	
tgt ttt ggc agc cga agt agg aaa cta aaa gag caa tac caa gac ttg	1728
Cys Phe Gly Ser Arg Ser Arg Lys Leu Lys Glu Gln Tyr Gln Asp Leu 565 570 575	
cag atg cca gag gaa agg agc aat cca cat ggc att gag tgg ctg tgg	1776
Gln Met Pro Glu Glu Arg Ser Asn Pro His Gly Ile Glu Trp Leu Trp 580 585 590	
cat tcc att gtg ata agg atg tat ttg tcc tta att gcc aag agt acc	1824
His Ser Ile Val Ile Arg Met Tyr Leu Ser Leu Ile Ala Lys Ser Thr 595 600 605	
cga aac tat acc caa gag gca tca ctt ggg gct ctc cag aac ctc aca	1872

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Arg	Asn	Tyr	Thr	Gln	Glu	Ala	Ser	Leu	Gly	Ala	Leu	Gln	Asn	Leu	Thr	
610						615					620					
gca	gga	ggc	ggc	ccg	ata	ccc	aca	ttg	gtg	gct	cga	atg	gtt	gtc	caa	1920
Ala	Gly	Gly	Gly	Pro	Ile	Pro	Thr	Leu	Val	Ala	Arg	Met	Val	Val	Gln	
625					630					635					640	
aag	gaa	aat	ggt	ctt	cag	cat	aca	cgg	aag	atg	ctg	cac	gtg	ggt	gat	1968
Lys	Glu	Asn	Gly	Leu	Gln	His	Thr	Arg	Lys	Met	Leu	His	Val	Gly	Asp	
				645					650					655		
ccc	agt	gtg	aaa	aag	act	gcg	gtc	tcc	ctg	ctg	agg	aat	ttg	tca	cgg	2016
Pro	Ser	Val	Lys	Lys	Thr	Ala	Val	Ser	Leu	Leu	Arg	Asn	Leu	Ser	Arg	
			660					665					670			
aat	ctt	tcc	ctg	cag	aat	gaa	att	gct	aaa	gaa	act	cta	cca	gat	ttg	2064
Asn	Leu	Ser	Leu	Gln	Asn	Glu	Ile	Ala	Lys	Glu	Thr	Leu	Pro	Asp	Leu	
		675					680					685				
gtt	tct	ata	att	cct	gac	aca	gtc	cca	agt	act	gac	ctt	ctc	att	gaa	2112
Val	Ser	Ile	Ile	Pro	Asp	Thr	Val	Pro	Ser	Thr	Asp	Leu	Leu	Ile	Glu	
	690					695					700					
acc	aca	gcc	tct	gct	tgc	tat	acg	ttg	aac	aat	tta	atg	caa	aat	agt	2160
Thr	Thr	Ala	Ser	Ala	Cys	Tyr	Thr	Leu	Asn	Asn	Leu	Met	Gln	Asn	Ser	
705					710					715					720	
tac	cag	aat	gca	cga	gac	ctt	ctg	aac	acc	gga	ggt	ctg	cag	aaa	att	2208
Tyr	Gln	Asn	Ala	Arg	Asp	Leu	Leu	Asn	Thr	Gly	Gly	Leu	Gln	Lys	Ile	
				725					730					735		
atg	acc	atc	agc	ata	ggg	gaa	ggc	tat	gcc	ccc	aac	aag	gcc	agc	aaa	2256
Met	Thr	Ile	Ser	Ile	Gly	Glu	Gly	Tyr	Ala	Pro	Asn	Lys	Ala	Ser	Lys	
			740					745					750			
gca	gcc	tct	gtc	ctc	ctt	tac	tct	ctg	tgg	gca	cat	aca	gag	ctg	cat	2304
Ala	Ala	Ser	Val	Leu	Leu	Tyr	Ser	Leu	Trp	Ala	His	Thr	Glu	Leu	His	
		755					760					765				
cac	gcc	tat	aag	aag	gct	cag	ttt	aag	aaa	aca	gac	ttt	gtc	aac	agc	2352
His	Ala	Tyr	Lys	Lys	Ala	Gln	Phe	Lys	Lys	Thr	Asp	Phe	Val	Asn	Ser	
	770					775					780					
cgg	act	gcc	aaa	gcc	tac	cac	tct	ctt	aaa	gac						2385
Arg	Thr	Ala	Lys	Ala	Tyr	His	Ser	Leu	Lys	Asp						
785					790					795						

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 <212> PRT  
 <213> Mus musculus

<400> 22

Met Ala Val Pro Gly Ser Leu Ala Glu Cys Gly Tyr Ile Arg Thr Val  
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Leu Gly Gln Gln Ile Leu Gly His Leu Asp Ser Ser Ser Leu Ala Leu  
 20 25 30

Pro Ser Glu Ala Arg Leu Arg Leu Ala Gly Ser Ser Gly Arg Gly Asp  
 35 40 45

Pro Ala Ala Arg Ser Gln Arg Ile Gln Glu Gln Val Gln Gln Thr Leu  
 50 55 60

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Ala Arg Arg Gly Arg Ser Ser Ala Val Ser Gly Asn Leu His Arg Thr  
65 70 75 80

Ser Ser Val Pro Glu Tyr Val Tyr Lys Leu His Val Val Glu Asn Asp  
85 90 95

Phe Val Gly Arg Gln Ser Pro Val Thr Arg Asp Tyr Asp Met Leu Lys  
100 105 110

Ala Gly Met Thr Ala Thr Tyr Gly Ser Arg Trp Gly Arg Ala Ala Ala  
115 120 125

Gln Tyr Ser Ser Gln Lys Ser Val Glu Glu Arg Ser Trp Arg Gln Pro  
130 135 140

Leu Arg Arg Leu Glu Ile Ser Pro Asp Ser Ser Pro Glu Arg Ala His  
145 150 155 160

Tyr Gly His Ser Glu Tyr Gln Tyr Ala Trp Arg Ser His Val Val Pro  
165 170 175

Gly Gly Arg Leu Thr Leu Pro Arg Tyr Ala Arg Ser Glu Ile Leu Gly  
180 185 190

Leu Arg Gln Ala Gly Thr Ala Arg Arg Pro Pro Gly Cys Gly Ser Phe  
195 200 205

Ser Asp Ala Val Phe Asp Asn Gly Pro Leu Lys Pro Thr Met Pro Thr  
210 215 220

His Pro Pro Gly Thr Ser His Ser Ala Gly Ser Leu Leu Glu Glu Thr  
225 230 235 240

Thr Val Arg Val Ser Gln Ala Arg Leu Gln Ser Thr Gln Ser Arg Thr  
245 250 255

Ala Arg Ser Ser Trp Pro Arg Ser Ser Val Arg Ser Ser Leu Arg Glu  
260 265 270

Pro Gly Arg Met Leu Thr Thr Ala Gly Gln Ala Ala Val Gly Ser Gly  
275 280 285

Asp Ala His Gly Asp Arg Ser Val Phe Ala Asp Ala Gln Leu Gly Asn  
290 295 300

Ala Asp Ile Glu Met Thr Leu Glu Arg Ala Val Asn Met Leu Asp Ala  
305 310 315 320

Asp His Val Pro Val Ser Lys Ile Ser Ala Ala Ala Thr Phe Ile Gln  
325 330 335

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His Glu Ser Phe Gln Lys Ser Glu Ala Arg Lys Arg Val Asn Gln Leu  
340 345 350

Arg Gly Ile Pro Lys Leu Leu Gln Leu Leu Lys Leu Gln Asn Glu Asp  
355 360 365

Val Gln Arg Ala Ala Cys Gly Ala Leu Arg Asn Leu Val Phe Glu Asp  
370 375 380

Asn Asp Asn Lys Leu Glu Val Ala Glu Leu Asn Gly Val Pro Arg Leu  
385 390 395 400

Leu Gln Val Leu Lys Gln Thr Arg Asp Leu Glu Thr Lys Lys Gln Ile  
405 410 415

Thr Gly Leu Leu Trp Asn Leu Ser Ser Ser Asp Lys Leu Lys His Leu  
420 425 430

Met Ile Thr Glu Ala Leu Leu Thr Leu Thr Glu Ser Val Ile Ile Pro  
435 440 445

Phe Ser Gly Trp Pro Glu Gly Asp Tyr Pro Lys Ala Asn Gly Leu Leu  
450 455 460

Asp Phe Asp Ile Phe Tyr Asn Val Thr Gly Cys Leu Arg Asn Met Ser  
465 470 475 480

Ser Ala Gly Pro Asp Gly Arg Lys Met Met Arg Arg Cys Asp Gly Leu  
485 490 495

Ile Asp Ser Leu Val His Tyr Val Arg Gly Thr Ile Ala Asp Tyr Gln  
500 505 510

Pro Asp Asp Lys Ala Thr Glu Asn Cys Val Cys Ile Leu His Asn Leu  
515 520 525

Ser Tyr Gln Leu Glu Ala Glu Leu Pro Glu Lys Tyr Ser Gln Ser Ile  
530 535 540

Tyr Met Gln Asn Arg Asn Ile Gln Thr Asn Ser Asn Lys Ser Ile Gly  
545 550 555 560

Cys Phe Gly Ser Arg Ser Arg Lys Leu Lys Glu Gln Tyr Gln Asp Leu  
565 570 575

Gln Met Pro Glu Glu Arg Ser Asn Pro His Gly Ile Glu Trp Leu Trp  
580 585 590

His Ser Ile Val Ile Arg Met Tyr Leu Ser Leu Ile Ala Lys Ser Thr  
595 600 605

Arg Asn Tyr Thr Gln Glu Ala Ser Leu Gly Ala Leu Gln Asn Leu Thr  
610 615 620

Ala Gly Gly Gly Pro Ile Pro Thr Leu Val Ala Arg Met Val Val Gln  
625 630 635 640

Lys Glu Asn Gly Leu Gln His Thr Arg Lys Met Leu His Val Gly Asp  
645 650 655

Pro Ser Val Lys Lys Thr Ala Val Ser Leu Leu Arg Asn Leu Ser Arg  
660 665 670

Asn Leu Ser Leu Gln Asn Glu Ile Ala Lys Glu Thr Leu Pro Asp Leu  
675 680 685

Val Ser Ile Ile Pro Asp Thr Val Pro Ser Thr Asp Leu Leu Ile Glu  
690 695 700

Thr Thr Ala Ser Ala Cys Tyr Thr Leu Asn Asn Leu Met Gln Asn Ser  
705 710 715 720

Tyr Gln Asn Ala Arg Asp Leu Leu Asn Thr Gly Gly Leu Gln Lys Ile  
725 730 735

Met Thr Ile Ser Ile Gly Glu Gly Tyr Ala Pro Asn Lys Ala Ser Lys  
740 745 750

Ala Ala Ser Val Leu Leu Tyr Ser Leu Trp Ala His Thr Glu Leu His  
755 760 765

His Ala Tyr Lys Lys Ala Gln Phe Lys Lys Thr Asp Phe Val Asn Ser  
770 775 780

Arg Thr Ala Lys Ala Tyr His Ser Leu Lys Asp  
785 790 795

<210> 23  
<211> 2184  
<212> DNA  
<213> Mus musculus

<220>  
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1 5 10 15																			

gac cag gac aac tcc acg ctg gct ttg ccc tct gac caa aag atg aag																			
Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys																			
20 25 30																			96

acc ggc acg tcg ggc agg cag cgc gtg cag gag caa gtg atg atg acc																			
Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr																			
144																			



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	35		40		45													
	gtc	aaa	cgg	cag	aag	tcc	aag	tct	tcc	cag	tcg	tcc	acc	ttg	agt	cac		192
	Val	Lys	Arg	Gln	Lys	Ser	Lys	Ser	Ser	Gln	Ser	Ser	Thr	Leu	Ser	His		
		50					55					60						
	tcc	aac	cga	ggt	tcc	atg	tat	gat	ggg	ctg	gct	gac	aat	tac	aac	aac		240
	Ser	Asn	Arg	Gly	Ser	Met	Tyr	Asp	Gly	Leu	Ala	Asp	Asn	Tyr	Asn	Asn		
	65					70					75					80		
	tac	ggc	acc	acg	agc	aga	agc	agc	tac	ttc	tcc	aag	ttc	cag	gca	ggg		288
	Tyr	Gly	Thr	Thr	Ser	Arg	Ser	Ser	Tyr	Phe	Ser	Lys	Phe	Gln	Ala	Gly		
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	aat	ggc	tcg	tgg	gga	tat	ccg	atc	tac	aat	ggg	acc	ctc	aag	cgg	gag		336
	Asn	Gly	Ser	Trp	Gly	Tyr	Pro	Ile	Tyr	Asn	Gly	Thr	Leu	Lys	Arg	Glu		
				100					105					110				
	ccc	gac	aac	aga	cgc	ttc	agc	tcc	tat	agc	cag	atg	gag	aac	tgg	agc		384
	Pro	Asp	Asn	Arg	Arg	Phe	Ser	Ser	Tyr	Ser	Gln	Met	Glu	Asn	Trp	Ser		
			115					120					125					
	cgg	cac	tat	ccc	cga	ggc	agc	tgt	gcc	acc	ccg	ggc	gct	ggc	agt	gac		432
	Arg	His	Tyr	Pro	Arg	Gly	Ser	Cys	Ala	Thr	Pro	Gly	Ala	Gly	Ser	Asp		
		130					135					140						
	atc	tgc	ttc	atg	cag	aaa	atc	aag	gca	agc	cgc	agt	gag	cct	gac	ctc		480
	Ile	Cys	Phe	Met	Gln	Lys	Ile	Lys	Ala	Ser	Arg	Ser	Glu	Pro	Asp	Leu		
	145					150					155					160		
	tac	tgt	gac	cca	agg	ggc	aca	ctg	cgc	aag	ggc	acc	ctg	ggc	agc	aag		528
	Tyr	Cys	Asp	Pro	Arg	Gly	Thr	Leu	Arg	Lys	Gly	Thr	Leu	Gly	Ser	Lys		
					165					170					175			
	ggc	cac	aag	acc	acc	cag	aac	cga	tgc	agc	ttc	tac	agc	act	tgc	agt		576
	Gly	His	Lys	Thr	Thr	Gln	Asn	Arg	Cys	Ser	Phe	Tyr	Ser	Thr	Cys	Ser		
				180					185					190				
	ggt	cag	aag	gct	gtc	aag	aag	tgt	ccc	gtg	cgg	ccg	ccc	tcc	tgc	acc		624
	Gly	Gln	Lys	Ala	Val	Lys	Lys	Cys	Pro	Val	Arg	Pro	Pro	Ser	Cys	Thr		
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	tcc	aag	caa	gac	ccg	gtg	tat	gtg	ccg	cct	atc	tcc	tgc	aac	aag	gac		672
	Ser	Lys	Gln	Asp	Pro	Val	Tyr	Val	Pro	Pro	Ile	Ser	Cys	Asn	Lys	Asp		
		210					215					220						
	ctg	tcc	ttc	ggc	cac	tcg	agg	gcc	agt	tcc	aag	atc	tgc	agt	gag	gac		720
	Leu	Ser	Phe	Gly	His	Ser	Arg	Ala	Ser	Ser	Lys	Ile	Cys	Ser	Glu	Asp		
	225					230					235					240		
	att	gag	tgt	agt	ggg	ctg	acc	atc	ccc	aag	gct	gtg	cag	tac	ctg	tgc		768
	Ile	Glu	Cys	Ser	Gly	Leu	Thr	Ile	Pro	Lys	Ala	Val	Gln	Tyr	Leu	Cys		
					245					250					255			
	tcc	cag	gat	gag	aag	tac	cag	gcc	atc	gga	gcc	tat	tac	atc	cag	cac		816
	Ser	Gln	Asp	Glu	Lys	Tyr	Gln	Ala	Ile	Gly	Ala	Tyr	Tyr	Ile	Gln	His		
				260					265					270				
	acc	tgc	ttc	cag	gat	gaa	tct	gcc	aag	caa	cag	gtc	tat	cag	ctg	ggg		864
	Thr	Cys	Phe	Gln	Asp	Glu	Ser	Ala	Lys	Gln	Gln	Val	Tyr	Gln	Leu	Gly		
			275					280					285					
	ggc	atc	tgc	aag	ctg	gtg	gac	ctc	ctc	cgc	agc	ccc	aat	cag	aat	gtc		912
	Gly	Ile	Cys	Lys	Leu	Val	Asp	Leu	Leu	Arg	Ser	Pro	Asn	Gln	Asn	Val		
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	cag	cag	gct	gct	gcc	ggg	gcc	ctg	cgc	aac	ctg	gtg	ttc	agg	agc	acc		960
	Gln	Gln	Ala	Ala	Ala	Gly	Ala	Leu	Arg	Asn	Leu	Val	Phe	Arg	Ser	Thr		
	305					310					315					320		

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ccc Pro	aac Asn	aag Lys	ctg Leu	gag Glu 325	acc Thr	agg Arg	agg Arg	cag Gln	aac Asn 330	gga Gly	atc Ile	cgt Arg	gaa Glu	gct Ala 335	gtc Val	1008
agc Ser	ctc Leu	ctg Leu	agg Arg 340	aga Arg	agc Ser	ggg Gly	agc Ser	acg Thr 345	gag Glu	atc Ile	caa Gln	aaa Lys	cag Gln 350	ctg Leu	act Thr	1056
ggg Gly	ctc Leu	ctc Leu 355	tgg Trp	aac Asn	ctg Leu	tct Ser	tcc Ser 360	act Thr	gat Asp	gag Glu	ctg Leu	aag Lys 365	gag Glu	gag Glu	ctg Leu	1104
gtg Val	gcc Ala 370	gac Asp	gcc Ala	ctg Leu	cct Pro	gtt Val 375	ctg Leu	act Thr	gac Asp	cgg Arg	gtc Val 380	atc Ile	att Ile	cct Pro	ttc Phe	1152
tct Ser 385	ggc Gly	tgg Trp	tgt Cys	gat Asp	ggc Gly 390	aac Asn	agc Ser	aac Asn	atg Met	tcc Ser 395	cgg Arg	gaa Glu	gta Val	gtg Val	gac Asp 400	1200
cct Pro	gag Glu	gtc Val	ttc Phe 405	ttc Phe	aat Asn	gct Ala	aca Thr	ggc Gly 410	tgc Cys	ttg Leu	agg Arg	aac Asn	ctg Leu	agt Ser 415	tca Ser	1248
gct Ala	gat Asp	gct Ala	ggc Gly 420	cgc Arg	cag Gln	act Thr	atg Met	cgg Arg 425	aac Asn	tac Tyr	tct Ser	ggg Gly 430	ctc Leu	att Ile	gac Asp	1296
tcc Ser	ctc Leu	atg Met 435	gcc Ala	tat Tyr	gtc Val	cag Gln	aac Asn 440	tgc Cys	gtg Val	gct Ala	gcc Ala	agc Ser 445	cgc Arg	tgc Cys	gat Asp	1344
gac Asp	aag Lys 450	tct Ser	gtg Val	gag Glu	aac Asn	tgc Cys 455	atg Met	tgt Cys	atc Ile	ctg Leu	cat His 460	aac Asn	ctc Leu	tcc Ser	tac Tyr	1392
cgc Arg 465	ctg Leu	gac Asp	gcc Ala	gag Glu	gtg Val 470	ccc Pro	acc Thr	cgc Arg	tac Tyr	cgc Arg 475	cag Gln	ctg Leu	gag Glu	tac Tyr	aat Asn 480	1440
acc Thr	cgc Arg	aac Asn	gcc Ala	tac Tyr 485	acc Thr	gag Glu	aag Lys	tcc Ser 490	tcc Ser	act Thr	ggc Gly	tgc Cys	ttc Phe	agc Ser 495	aac Asn	1488
agg Arg	ggc Gly	gac Asp	aag Lys 500	atg Met	atg Met	aac Asn	aac Asn	aac Asn 505	tat Tyr	gac Asp	tgc Cys	cca Pro	ctt Leu 510	ccg Pro	gag Glu	1536
gaa Glu	gag Glu	acc Thr 515	aac Asn	ccc Pro	aag Lys	ggc Gly	agc Ser 520	agc Ser	tgg Trp	ctg Leu	tac Tyr	cac His 525	tca Ser	gat Asp	gcc Ala	1584
atc Ile	cgg Arg 530	acc Thr	tac Tyr	ctg Leu	aac Asn	ctc Leu 535	atg Met	gga Gly	aag Lys	agc Ser	aag Lys 540	aaa Lys	gat Asp	gct Ala	acc Thr	1632
ttg Leu 545	gag Glu	gcc Ala	tgt Cys	gct Ala	ggg Gly 550	gcc Ala	ctg Leu	caa Gln	aac Asn	ctg Leu 555	aca Thr	gcc Ala	agc Ser	aag Lys	ggg Gly 560	1680
ctg Leu	atg Met	tcc Ser	aat Asn	ggc Gly 565	atg Met	agt Ser	cag Gln	tta Leu	att Ile 570	gga Gly	ata Ile	aag Lys	gaa Glu	aag Lys 575	ggc Gly	1728
ctg Leu	cca Pro	caa Gln	atc Ile 580	gcc Ala	cgt Arg	ctc Leu	ctg Leu	caa Gln 585	tct Ser	ggc Gly	aat Asn	tgc Ser	gat Asp 590	gtg Val	gtg Val	1776

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cgg tcc gga gcc tct ctg ctg agc aac atg tct cgc cac cct gtg ctg	1824
Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His Pro Val Leu	
595 600 605	
cac aga gtg atg gga aac cag gtg ttc cca gag gta acc aga ctc ctc	1872
His Arg Val Met Gly Asn Gln Val Phe Pro Glu Val Thr Arg Leu Leu	
610 615 620	
act agc cac acc ggc aat acc agc aac tct gaa gat atc ttg tcc tca	1920
Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp Ile Leu Ser Ser	
625 630 635 640	
gcc tgc tac act gtg agg aac ctg atg acc tca cag cct cag atg gcc	1968
Ala Cys Tyr Thr Val Arg Asn Leu Met Thr Ser Gln Pro Gln Met Ala	
645 650 655	
aag cag tac ttc tcc aac agc atg ctc aac aat gtc ttc aac ttg tgc	2016
Lys Gln Tyr Phe Ser Asn Ser Met Leu Asn Asn Val Phe Asn Leu Cys	
660 665 670	
cgc aac act gcc tcc tca cct aag gct gca gag gct gcc cgg cta ctc	2064
Arg Asn Thr Ala Ser Ser Pro Lys Ala Ala Glu Ala Ala Arg Leu Leu	
675 680 685	
ctg tct gac atg tgg gcc agc aag gag ctg cag agt gtc ctc agg cag	2112
Leu Ser Asp Met Trp Ala Ser Lys Glu Leu Gln Ser Val Leu Arg Gln	
690 695 700	
caa ggt ttc gat agg aat atg atg gga aac ata gct ggg gcc aac aac	2160
Gln Gly Phe Asp Arg Asn Met Met Gly Asn Ile Ala Gly Ala Asn Asn	
705 710 715 720	
ctc aga aac ttc acc tcc cgg ttc	2184
Leu Arg Asn Phe Thr Ser Arg Phe	
725	

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 <212> PRT  
 <213> Mus musculus  
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Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr	
35 40 45	
Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His	
50 55 60	
Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Asn	
65 70 75 80	
Tyr Gly Thr Thr Ser Arg Ser Ser Tyr Phe Ser Lys Phe Gln Ala Gly	
85 90 95	
Asn Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu	

Pro Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser  
115 120 125

Arg His Tyr Pro Arg Gly Ser Cys Ala Thr Pro Gly Ala Gly Ser Asp  
130 135 140

Ile Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu  
145 150 155 160

Tyr Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser Lys  
165 170 175

Gly His Lys Thr Thr Gln Asn Arg Cys Ser Phe Tyr Ser Thr Cys Ser  
180 185 190

Gly Gln Lys Ala Val Lys Lys Cys Pro Val Arg Pro Pro Ser Cys Thr  
195 200 205

Ser Lys Gln Asp Pro Val Tyr Val Pro Pro Ile Ser Cys Asn Lys Asp  
210 215 220

Leu Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu Asp  
225 230 235 240

Ile Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu Cys  
245 250 255

Ser Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln His  
260 265 270

Thr Cys Phe Gln Asp Glu Ser Ala Lys Gln Gln Val Tyr Gln Leu Gly  
275 280 285

Gly Ile Cys Lys Leu Val Asp Leu Leu Arg Ser Pro Asn Gln Asn Val  
290 295 300

Gln Gln Ala Ala Ala Gly Ala Leu Arg Asn Leu Val Phe Arg Ser Thr  
305 310 315 320

Pro Asn Lys Leu Glu Thr Arg Arg Gln Asn Gly Ile Arg Glu Ala Val  
325 330 335

Ser Leu Leu Arg Arg Ser Gly Ser Thr Glu Ile Gln Lys Gln Leu Thr  
340 345 350

Gly Leu Leu Trp Asn Leu Ser Ser Thr Asp Glu Leu Lys Glu Glu Leu  
355 360 365

Val Ala Asp Ala Leu Pro Val Leu Thr Asp Arg Val Ile Ile Pro Phe  
370 375 380

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Ser Gly Trp Cys Asp Gly Asn Ser Asn Met Ser Arg Glu Val Val Asp  
385 390 395 400

Pro Glu Val Phe Phe Asn Ala Thr Gly Cys Leu Arg Asn Leu Ser Ser  
405 410 415

Ala Asp Ala Gly Arg Gln Thr Met Arg Asn Tyr Ser Gly Leu Ile Asp  
420 425 430

Ser Leu Met Ala Tyr Val Gln Asn Cys Val Ala Ala Ser Arg Cys Asp  
435 440 445

Asp Lys Ser Val Glu Asn Cys Met Cys Ile Leu His Asn Leu Ser Tyr  
450 455 460

Arg Leu Asp Ala Glu Val Pro Thr Arg Tyr Arg Gln Leu Glu Tyr Asn  
465 470 475 480

Thr Arg Asn Ala Tyr Thr Glu Lys Ser Ser Thr Gly Cys Phe Ser Asn  
485 490 495

Arg Gly Asp Lys Met Met Asn Asn Asn Tyr Asp Cys Pro Leu Pro Glu  
500 505 510

Glu Glu Thr Asn Pro Lys Gly Ser Ser Trp Leu Tyr His Ser Asp Ala  
515 520 525

Ile Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys Lys Asp Ala Thr  
530 535 540

Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr Ala Ser Lys Gly  
545 550 555 560

Leu Met Ser Asn Gly Met Ser Gln Leu Ile Gly Ile Lys Glu Lys Gly  
565 570 575

Leu Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn Ser Asp Val Val  
580 585 590

Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His Pro Val Leu  
595 600 605

His Arg Val Met Gly Asn Gln Val Phe Pro Glu Val Thr Arg Leu Leu  
610 615 620

Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp Ile Leu Ser Ser  
625 630 635 640

Ala Cys Tyr Thr Val Arg Asn Leu Met Thr Ser Gln Pro Gln Met Ala  
645 650 655

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Lys Gln Tyr Phe Ser Asn Ser Met Leu Asn Asn Val Phe Asn Leu Cys  
660 665 670

Arg Asn Thr Ala Ser Ser Pro Lys Ala Ala Glu Ala Ala Arg Leu Leu  
675 680 685

Leu Ser Asp Met Trp Ala Ser Lys Glu Leu Gln Ser Val Leu Arg Gln  
690 695 700

Gln Gly Phe Asp Arg Asn Met Met Gly Asn Ile Ala Gly Ala Asn Asn  
705 710 715 720

Leu Arg Asn Phe Thr Ser Arg Phe  
725

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<211> 753  
<212> DNA  
<213> Bos taurus

<220>  
<221> CDS  
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tgc ttc agc aac aag agc gac cgc atg acg aac aac aac tat gat tgc	96
Cys Phe Ser Asn Lys Ser Asp Arg Met Thr Asn Asn Asn Tyr Asp Cys	
20 25 30	
ccg ctt ccc gag gaa gag ccc aac ccc aag ggc agc agc tgg ctg tac	144
Pro Leu Pro Glu Glu Glu Pro Asn Pro Lys Gly Ser Ser Trp Leu Tyr	
35 40 45	
cac tcg gac gcc gtc cgc acc tac ctg aac ctc atg ggc aag agc aag	192
His Ser Asp Ala Val Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys	
50 55 60	
aag gac gcc acc ctg gag gcc tgc gcg ggc gcc ctg cag aac ctg acc	240
Lys Asp Ala Thr Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr	
65 70 75 80	
gcc agc aag ggg ctg atg tcc agt ggc atg agc cag ctg atc ggg ctg	288
Ala Ser Lys Gly Leu Met Ser Ser Gly Met Ser Gln Leu Ile Gly Leu	
85 90 95	
aag gag aag ggc ctg ccc cac atc gcc cgc ctc ctg caa tct ggc aac	336
Lys Glu Lys Gly Leu Pro His Ile Ala Arg Leu Leu Gln Ser Gly Asn	
100 105 110	
tcg gac gtg gtg cgg tcc gga gcc tcg ctc ctg agc aac atg tcc cgc	384
Ser Asp Val Val Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg	
115 120 125	
cac ccc gcg ctg cac agg gtg atg ggg acc caa gtg ttc cca gag gtg	432
His Pro Ala Leu His Arg Val Met Gly Thr Gln Val Phe Pro Glu Val	
130 135 140	
acc aga ctc ctc acc agt cac act ggc aac acc agc aac tcg gag gac	480

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Thr 145	Arg	Leu	Leu	Thr 150	Ser 155	His	Thr	Gly	Asn 155	Thr 155	Ser	Asn	Ser	Glu	Asp 160	
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Ile	Leu	Ala	Ser	Ala 165	Cys	Tyr	Thr	Val	Arg 170	Asn	Leu	Met	Ala	Ser 175	Leu	
ccg	ggc	atg	gcc	aag	cag	cac	ttc	tcc	agc	agc	atg	gtc	aac	aac	atc	576
Pro	Gly	Met	Ala 180	Lys	Gln	His	Phe	Ser 185	Ser	Ser	Met	Val	Asn 190	Asn	Ile	
atc	aac	ctg	tgc	cgc	agc	agc	acc	tcc	ccc	aag	gct	gcg	gag	gcc	gcc	624
Ile	Asn	Leu 195	Cys	Arg	Ser	Ser	Thr 200	Ser	Pro	Lys	Ala	Ala 205	Glu	Ala	Ala	
cgc	ctc	ctc	ctg	tcc	gac	atg	tgg	tcc	agc	agg	gag	ctg	cag	ggg	ctg	672
Arg	Leu 210	Leu	Leu	Ser	Asp	Met 215	Trp	Ser	Ser	Arg	Glu 220	Leu	Gln	Gly	Leu	
ctc	agg	cag	caa	ggt	ttc	gat	agg	agc	atg	ctg	ggg	acc	tta	gcc	ggg	720
Leu	Arg	Gln	Gln	Gly 225	Phe 230	Asp	Arg	Ser	Met	Leu 235	Gly	Thr	Leu	Ala	Gly 240	
gcc	aac	agc	ctc	agg	aac	ttc	acc	tcc	cga	ttc						753
Ala	Asn	Ser	Leu	Arg 245	Asn	Phe	Thr	Ser	Arg 250	Phe						

<210> 26  
 <211> 251  
 <212> PRT  
 <213> Bos taurus

<400> 26

Leu 1	Glu	Tyr	Asn	Ala 5	Arg	Asn	Ala	Tyr	Thr 10	Asp	Lys	Ser	Ser	Thr	Gly 15	
Cys	Phe	Ser	Asn 20	Lys	Ser	Asp	Arg	Met 25	Thr	Asn	Asn	Asn	Tyr 30	Asp	Cys	
Pro	Leu	Pro 35	Glu	Glu	Glu	Pro	Asn 40	Pro	Lys	Gly	Ser	Ser 45	Trp	Leu	Tyr	
His	Ser 50	Asp	Ala	Val	Arg	Thr 55	Tyr	Leu	Asn	Leu	Met 60	Gly	Lys	Ser	Lys	
Lys 65	Asp	Ala	Thr	Leu	Glu 70	Ala	Cys	Ala	Gly	Ala 75	Leu	Gln	Asn	Leu	Thr 80	
Ala	Ser	Lys	Gly	Leu 85	Met	Ser	Ser	Gly	Met 90	Ser	Gln	Leu	Ile	Gly 95	Leu	
Lys	Glu	Lys	Gly 100	Leu	Pro	His	Ile	Ala 105	Arg	Leu	Leu	Gln	Ser 110	Gly	Asn	
Ser	Asp	Val 115	Val	Arg	Ser	Gly	Ala 120	Ser	Leu	Leu	Ser	Asn 125	Met	Ser	Arg	
His 130	Pro	Ala	Leu	His	Arg	Val 135	Met	Gly	Thr	Gln	Val 140	Phe	Pro	Glu	Val	

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Thr Arg Leu Leu Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp  
145 150 155 160

Ile Leu Ala Ser Ala Cys Tyr Thr Val Arg Asn Leu Met Ala Ser Leu  
165 170 175

Pro Gly Met Ala Lys Gln His Phe Ser Ser Ser Met Val Asn Asn Ile  
180 185 190

Ile Asn Leu Cys Arg Ser Ser Thr Ser Pro Lys Ala Ala Glu Ala Ala  
195 200 205

Arg Leu Leu Leu Ser Asp Met Trp Ser Ser Arg Glu Leu Gln Gly Leu  
210 215 220

Leu Arg Gln Gln Gly Phe Asp Arg Ser Met Leu Gly Thr Leu Ala Gly  
225 230 235 240

Ala Asn Ser Leu Arg Asn Phe Thr Ser Arg Phe  
245 250

<210> 27  
<211> 2184  
<212> DNA  
<213> Canis familiaris

<220>  
<221> CDS  
<222> (1)..(2184)

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gac cag gac aac tcc acg ctg gcc ctg ccg tcg gac cag aag atg aag	96
Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys	
20 25 30	
acg ggc acg tcg ggc cgc cag cgc gtg cag gag cag gtg atg atg acc	144
Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr	
35 40 45	
gtc aag cgg cag aag tcc aag tcc tcg cag tcg tcc acc ctg agc cac	192
Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His	
50 55 60	
tcc aac cga ggt tcc atg tac gat ggc ctg gcc gac aat tac aac aac	240
Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Asn	
65 70 75 80	
tat ggg acc acc agc cgg agc agc tac tac tcc aag atg cag gcg gcg	288
Tyr Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Met Gln Ala Ala	
85 90 95	
aat ggc tca tgg gga tat ccg atc tac aac ggg acc ctc aag cgg gag	336
Asn Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu	
100 105 110	



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aat Asn	gac Asp	aac Asn 115	agg Arg	cgc Arg	ttc Phe	agc Ser	tcc Ser 120	tac Tyr	agc Ser	cag Gln	atg Met	gag Glu 125	aac Asn	tgg Trp	ggc Gly	384
cgg Arg	cac His 130	tac Tyr	cca Pro	cgg Arg	ggc Gly	acc Thr 135	tgt Cys	acc Thr	acc Thr	act Thr	ggc Gly 140	gcc Ala	ggc Gly	agc Ser	gac Asp	432
atc Ile 145	tgc Cys	ttc Phe	atg Met	cag Gln	aag Lys 150	atc Ile	aag Lys	gcg Ala	agc Ser	cgc Arg 155	agc Ser	gag Glu	ccg Pro	gac Asp	ctc Leu 160	480
tac Tyr	tgt Cys	gac Asp	cct Pro	cgc Arg 165	ggc Gly	acc Thr	ctg Leu	cgc Arg	aag Lys 170	ggc Gly	acg Thr	ctg Leu	ggc Gly	aac Asn 175	cgg Arg	528
ggc Gly	cag Gln	aag Lys	acc Thr 180	acc Thr	cag Gln	aac Asn	cgc Arg	tac Tyr 185	agc Ser	ttc Phe	tac Tyr	agc Ser	acc Thr 190	tgc Cys	agc Ser	576
ggc Gly	cag Gln	aag Lys 195	gcg Ala	gtc Val	aag Lys	aag Lys	tgt Cys 200	ccc Pro	gtg Val	cgc Arg	ccg Pro	tcc Ser 205	tcc Ser	tgc Cys	acc Thr	624
tcc Ser	aag Lys 210	ccg Pro	gac Asp	ccc Pro	gtg Val	tac Tyr 215	gtc Val	cca Pro	ccc Pro	atc Ile	tcc Ser 220	tgc Cys	aac Asn	aag Lys	gac Asp	672
ctg Leu 225	tcc Ser	ttt Phe	ggc Gly	cac His	tcg Ser 230	agg Arg	gcc Ala	agc Ser	tcc Ser	aag Lys 235	atc Ile	tgc Cys	agt Ser	gag Glu	gat Asp 240	720
att Ile	gag Glu	tgc Cys	agt Ser	ggg Gly 245	ctg Leu	acc Thr	atc Ile	ccc Pro	aag Lys 250	gct Ala	gtg Val	cag Gln	tac Tyr	ctg Leu 255	agc Ser	768
tcc Ser	cag Gln	gac Asp	gag Glu 260	aag Lys	tac Tyr	cag Gln	gcc Ala	atc Ile 265	ggg Gly	gcc Ala	tat Tyr	tac Tyr	atc Ile 270	cag Gln	cac His	816
acc Thr	tgt Cys	ttc Phe 275	cag Gln	gac Asp	gaa Glu	tcg Ser	gcc Ala 280	aaa Lys	caa Gln	cag Gln	gtg Val	tat Tyr 285	cag Gln	ctg Leu	gga Gly	864
ggc Gly	atc Ile 290	tgc Cys	aag Lys	ctg Leu	gtg Val	gac Asp 295	ctc Leu	ctc Leu	cgg Arg	agc Ser	ccc Pro 300	aac Asn	cag Gln	aac Asn	gtg Val	912
cag Gln 305	cag Gln	gct Ala	gcg Ala	gct Ala	ggg Gly 310	gcc Ala	ctg Leu	cgt Arg	aac Asn	ctg Leu 315	gtg Val	ttc Phe	cgg Arg	agt Ser	gtc Val 320	960
acg Thr	aac Asn	aag Lys	ctg Leu	gag Glu 325	acc Thr	cgg Arg	agg Arg	cag Gln	agc Ser 330	ggg Gly	atc Ile	cga Arg	gag Glu	gct Ala 335	gtc Val	1008
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ggg Gly	ctg Leu	ctc Leu 355	tgg Trp	aac Asn	ctg Leu	tcg Ser	tcc Ser 360	act Thr	gac Asp	gag Glu	ctg Leu	aag Lys 365	gag Glu	gag Glu	ctc Leu	1104
atc Ile 370	gcc Ala	gac Asp	gcc Ala	ctg Leu	cct Pro	gtg Val 375	ctg Leu	gcc Ala	gac Asp	cgg Arg	gtc Val 380	atc Ile	atc Ile	ccc Pro	ttc Phe	1152
tcc	ggc	tgg	tgt	gac	ggc	aac	agc	aac	gtg	acc	cgg	gaa	atg	gtg	gac	1200

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Ser 385	Gly	Trp	Cys	Asp	Gly 390	Asn	Ser	Asn	Val	Thr 395	Arg	Glu	Met	Val	Asp 400	
ccc Pro	gaa Glu	gtc Val	ttc Phe	ttc Phe 405	aat Asn	gcc Ala	acc Thr	ggc Gly	tgc Cys 410	ttg Leu	agg Arg	aac Asn	ctg Leu	agc Ser 415	tcg Ser	1248
gcc Ala	gat Asp	gcc Ala	ggc Gly 420	cgc Arg	cag Gln	acc Thr	atg Met	cgg Arg 425	aac Asn	tac Tyr	acg Thr	ggg Gly	ctc Leu 430	att Ile	gac Asp	1296
tcc Ser	ctc Leu	atg Met 435	gcc Ala	tac Tyr	gtc Val	cag Gln	aac Asn 440	tgc Cys	gtg Val	gcc Ala	gcc Ala	agc Ser 445	cgc Arg	tgt Cys	gat Asp	1344
gac Asp	aag Lys 450	tcc Ser	gtg Val	gag Glu	aac Asn	tgc Cys 455	atg Met	tgc Cys	atc Ile	ctg Leu	cac His 460	aac Asn	ctc Leu	tcc Ser	tac Tyr	1392
cgc Arg 465	ctg Leu	gac Asp	gcg Ala	gag Glu	gtg Val 470	ccc Pro	acg Thr	cgc Arg	tac Tyr	cgc Arg 475	cag Gln	ctg Leu	gag Glu	tac Tyr	aac Asn 480	1440
gcg Ala	cgc Arg	aac Asn	gcc Ala	tac Tyr 485	acg Thr	gag Glu	aag Lys	tcc Ser	tcc Ser 490	acc Thr	ggc Gly	tgc Cys	ttc Phe	agc Ser 495	aac Asn	1488
aag Lys	agc Ser	gat Asp	aag Lys 500	atg Met	atg Met	aac Asn	aac Asn	aac Asn 505	tac Tyr	gac Asp	tgc Cys	ccc Pro	ctc Leu 510	ccg Pro	gag Glu	1536
gaa Glu	gag Glu	gcc Ala 515	aac Asn	ccc Pro	aag Lys	ggc Gly	agc Ser 520	agc Ser	tgg Trp	ctg Leu	tac Tyr	cat His 525	tcg Ser	gat Asp	gcc Ala	1584
atc Ile	cgc Arg 530	acc Thr	tac Tyr	ctg Leu	aac Asn	ctc Leu 535	atg Met	ggc Gly	aag Lys	agc Ser	aag Lys 540	aaa Lys	gac Asp	gcc Ala	acc Thr	1632
ttg Leu 545	gag Glu	gcc Ala	tgc Cys	gcc Ala	ggc Gly 550	gcc Ala	ctg Leu	cag Gln	aac Asn	ctg Leu 555	acg Thr	gcc Ala	agc Ser	aag Lys	ggg Gly 560	1680
ctg Leu	atg Met	tcc Ser	agt Ser	ggc Gly 565	atg Met	agc Ser	cag Gln	ctg Leu	atc Ile 570	ggg Gly	ctc Leu	aag Lys	gag Glu	aaa Lys 575	ggc Gly	1728
ctg Leu	ccc Pro	cag Gln	atc Ile 580	gct Ala	cgc Arg	ctc Leu	ctg Leu	caa Gln 585	tca Ser	ggc Gly	aac Asn	tct Ser	gat Asp 590	gtg Val	gtg Val	1776
cgg Arg	tct Ser	gga Gly 595	gcc Ala	tcc Ser	ctc Leu	ctg Leu	agc Ser 600	aac Asn	atg Met	tcc Ser	cgc Arg	cac His 605	ccc Pro	gtg Val	ctg Leu	1824
cac His 610	aga Arg	gcg Ala	atg Met	ggg Gly	aac Asn	cag Gln 615	gta Val	ttc Phe	ccc Pro	gag Glu	gtg Val 620	acc Thr	agg Arg	ctc Leu	ctc Leu	1872
acc Thr 625	agt Ser	cac His	act Thr	ggg Gly	aac Asn 630	acc Thr	agc Ser	aac Asn	tcg Ser	gaa Glu 635	gac Asp	atc Ile	ctg Leu	tcc Ser	tcg Ser 640	1920
gcc Ala	tgc Cys	tac Tyr	acg Thr	gtg Val 645	agg Arg	aac Asn	ctg Leu	atg Met	gcc Ala 650	tcc Ser	cag Gln	ccg Pro	cag Gln	atg Met 655	gcc Ala	1968
aag Lys	cag Gln	tac Tyr	ttc Phe	acc Thr	agc Ser	agc Ser	atg Met	gtc Val	aac Asn	aac Asn	atc Ile	atc Ile	aac Asn	ctg Leu	tgc Cys	2016

cgc	agc	agt	gcc	tca	ccc	aag	gct	gcg	gaa	gct	gcc	cgc	ctc	ctc	ctg	2064
Arg	Ser	Ser	Ala	Ser	Pro	Lys	Ala	Ala	Glu	Ala	Ala	Arg	Leu	Leu	Leu	
		675					680					685				
tct	gac	atg	tgg	tcc	agc	aag	gaa	ctg	cag	ggt	gtc	ctc	aga	cag	caa	2112
Ser	Asp	Met	Trp	Ser	Ser	Lys	Glu	Leu	Gln	Gly	Val	Leu	Arg	Gln	Gln	
		690				695					700					
ggc	ctg	gat	agg	aac	atg	ctg	ggg	gcc	tta	acc	gga	ccc	aac	agc	ctc	2160
Gly	Leu	Asp	Arg	Asn	Met	Leu	Gly	Ala	Leu	Thr	Gly	Pro	Asn	Ser	Leu	
705					710					715					720	
agg	aac	ttc	acc	tcc	cga	ttc	taa									2184
Arg	Asn	Phe	Thr	Ser	Arg	Phe										
				725												

<210> 28  
<211> 727  
<212> PRT  
<213> Canis familiaris

<400> 28

Met	Asn	Pro	Ser	Pro	Leu	Lys	Thr	Ala	Leu	Ala	Tyr	Glu	Cys	Phe	Pro
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			20					25					30		
Thr	Gly	Thr	Ser	Gly	Arg	Gln	Arg	Val	Gln	Glu	Gln	Val	Met	Met	Thr
		35					40					45			
Val	Lys	Arg	Gln	Lys	Ser	Lys	Ser	Ser	Gln	Ser	Ser	Thr	Leu	Ser	His
	50					55					60				
Ser	Asn	Arg	Gly	Ser	Met	Tyr	Asp	Gly	Leu	Ala	Asp	Asn	Tyr	Asn	Asn
65					70					75					80
Tyr	Gly	Thr	Thr	Ser	Arg	Ser	Ser	Tyr	Tyr	Ser	Lys	Met	Gln	Ala	Ala
				85					90					95	
Asn	Gly	Ser	Trp	Gly	Tyr	Pro	Ile	Tyr	Asn	Gly	Thr	Leu	Lys	Arg	Glu
			100					105					110		
Asn	Asp	Asn	Arg	Arg	Phe	Ser	Ser	Tyr	Ser	Gln	Met	Glu	Asn	Trp	Gly
		115					120					125			
Arg	His	Tyr	Pro	Arg	Gly	Thr	Cys	Thr	Thr	Thr	Gly	Ala	Gly	Ser	Asp
	130					135					140				
Ile	Cys	Phe	Met	Gln	Lys	Ile	Lys	Ala	Ser	Arg	Ser	Glu	Pro	Asp	Leu
145					150					155					160
Tyr	Cys	Asp	Pro	Arg	Gly	Thr	Leu	Arg	Lys	Gly	Thr	Leu	Gly	Asn	Arg
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Gly Gln Lys Thr 180 Thr Gln Asn Arg Tyr 185 Ser Phe Tyr Ser Thr 190 Cys Ser

Gly Gln Lys 195 Ala Val Lys Lys Cys 200 Pro Val Arg Pro Ser 205 Ser Cys Thr

Ser Lys 210 Pro Asp Pro Val Tyr 215 Val Pro Pro Ile Ser 220 Cys Asn Lys Asp

Leu 225 Ser Phe Gly His Ser 230 Arg Ala Ser Ser Lys 235 Ile Cys Ser Glu 240 Asp

Ile Glu Cys Ser Gly 245 Leu Thr Ile Pro Lys 250 Ala Val Gln Tyr Leu 255 Ser

Ser Gln Asp Glu 260 Lys Tyr Gln Ala Ile 265 Gly Ala Tyr Tyr Ile 270 Gln His

Thr Cys Phe 275 Gln Asp Glu Ser Ala 280 Lys Gln Gln Val Tyr 285 Gln Leu Gly

Gly Ile 290 Cys Lys Leu Val Asp 295 Leu Leu Arg Ser Pro 300 Asn Gln Asn Val

Gln 305 Gln Ala Ala Ala Gly 310 Ala Leu Arg Asn Leu 315 Val Phe Arg Ser Val 320

Thr Asn Lys Leu Glu 325 Thr Arg Arg Gln Ser 330 Gly Ile Arg Glu Ala 335 Val

Ser Leu Leu Arg 340 Arg Thr Gly Ser Thr 345 Glu Ile Gln Lys Gln 350 Leu Thr

Gly Leu 355 Leu Trp Asn Leu Ser Ser 360 Thr Asp Glu Leu Lys 365 Glu Glu Leu

Ile Ala 370 Asp Ala Leu Pro Val 375 Leu Ala Asp Arg Val 380 Ile Ile Pro Phe

Ser 385 Gly Trp Cys Asp Gly 390 Asn Ser Asn Val Thr 395 Arg Glu Met Val Asp 400

Pro Glu Val Phe 405 Phe Asn Ala Thr Gly Cys 410 Leu Arg Asn Leu Ser 415 Ser

Ala Asp Ala Gly 420 Arg Gln Thr Met Arg 425 Asn Tyr Thr Gly Leu 430 Ile Asp

Ser Leu Met 435 Ala Tyr Val Gln Asn 440 Cys Val Ala Ala Ser 445 Arg Cys Asp

Asp Lys Ser Val Glu Asn Cys Met Cys Ile Leu His Asn Leu Ser Tyr  
 450 455 460  
 Arg Leu Asp Ala Glu Val Pro Thr Arg Tyr Arg Gln Leu Glu Tyr Asn  
 465 470 475 480  
 Ala Arg Asn Ala Tyr Thr Glu Lys Ser Ser Thr Gly Cys Phe Ser Asn  
 485 490 495  
 Lys Ser Asp Lys Met Met Asn Asn Asn Tyr Asp Cys Pro Leu Pro Glu  
 500 505 510  
 Glu Glu Ala Asn Pro Lys Gly Ser Ser Trp Leu Tyr His Ser Asp Ala  
 515 520 525  
 Ile Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys Lys Asp Ala Thr  
 530 535 540  
 Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr Ala Ser Lys Gly  
 545 550 555 560  
 Leu Met Ser Ser Gly Met Ser Gln Leu Ile Gly Leu Lys Glu Lys Gly  
 565 570 575  
 Leu Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn Ser Asp Val Val  
 580 585 590  
 Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His Pro Val Leu  
 595 600 605  
 His Arg Ala Met Gly Asn Gln Val Phe Pro Glu Val Thr Arg Leu Leu  
 610 615 620  
 Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp Ile Leu Ser Ser  
 625 630 635 640  
 Ala Cys Tyr Thr Val Arg Asn Leu Met Ala Ser Gln Pro Gln Met Ala  
 645 650 655  
 Lys Gln Tyr Phe Thr Ser Ser Met Val Asn Asn Ile Ile Asn Leu Cys  
 660 665 670  
 Arg Ser Ser Ala Ser Pro Lys Ala Ala Glu Ala Ala Arg Leu Leu Leu  
 675 680 685  
 Ser Asp Met Trp Ser Ser Lys Glu Leu Gln Gly Val Leu Arg Gln Gln  
 690 695 700  
 Gly Leu Asp Arg Asn Met Leu Gly Ala Leu Thr Gly Pro Asn Ser Leu  
 705 710 715 720  
 Arg Asn Phe Thr Ser Arg Phe

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<211> 813  
<212> DNA  
<213> Danio rerio

<220>  
<221> CDS  
<222> (1)..(813)

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Met Ala Ser Ser Asn Asn Thr Ser Pro Glu Gly Gly Ser Pro Pro His
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cag aac cgc att cgc cag tcg ttg gag aac tgc gtt tgc att ttg cac      96
Gln Asn Arg Ile Arg Gln Ser Leu Glu Asn Cys Val Cys Ile Leu His
                               20          25          30

aac ctg acc tat cag ctg gag acc gag atg ccg act ctc ttc aac aaa     144
Asn Leu Thr Tyr Gln Leu Glu Thr Thr Met Pro Thr Leu Phe Asn Lys
                               35          40          45

ata aac gct ctg gcc agt cag tct cac aac cgc tcc agt tcc tct gac     192
Ile Asn Ala Leu Ala Ser Gln Ser His Asn Arg Ser Ser Ser Ser Asp
                               50          55          60

gct ggt cct atc atc tgc ttc agg tta cag agc cag aaa ctc aag cag     240
Ala Gly Pro Ile Ile Cys Phe Arg Leu Gln Ser Gln Lys Leu Lys Gln
65                               70          75          80

agg ggt ttt gac tat cct gtg atg gag gat aac aac cct gaa ggt gtg     288
Arg Gly Phe Asp Tyr Pro Val Met Glu Asp Asn Asn Pro Glu Gly Val
                               85          90          95

ggc tgg ctc ttc cac tct aaa gcg ctg cag ttt tac ctc aat ctg ctg     336
Gly Trp Leu Phe His Ser Lys Ala Leu Gln Phe Tyr Leu Asn Leu Leu
                               100         105         110

agt tcc agt gaa cgg gac gcc aca ctg gag gcc tgt tgt gga acc ctg     384
Ser Ser Ser Glu Arg Asp Ala Thr Leu Glu Ala Cys Cys Gly Thr Leu
                               115         120         125

cag aac ctc aca gcc aat gaa ggc ata gtt gtt gtg cgt ctg act gta     432
Gln Asn Leu Thr Ala Asn Glu Gly Ile Val Val Val Arg Leu Thr Val
                               130         135         140

tgt tgt gtg tgt gtt ttg ctc tat aaa gca cct cag tct ctg ccg cag     480
Cys Cys Val Cys Val Leu Leu Tyr Lys Ala Pro Gln Ser Leu Pro Gln
145          150          155         160

ctg gtg ggt ttc ctg aac tct ggt ctt tcc aag aaa gaa tct tct cct     528
Leu Val Gly Phe Leu Asn Ser Gly Leu Ser Lys Lys Glu Ser Ser Pro
                               165         170         175

gaa tat gac agt gcg atg gcc acc gct ctg cgc agc gca aac act ctg     576
Glu Tyr Asp Ser Ala Met Ala Thr Ala Leu Arg Ser Ala Asn Thr Leu
                               180         185         190

att aat gcg gat cct gat act ggc aag aac ctg ctg aac aac agc ctg     624
Ile Asn Ala Asp Pro Asp Thr Gly Lys Asn Leu Leu Asn Asn Ser Leu
                               195         200         205

atc aac aac ctc tac aac atg agt ctc aat agg gat ctt caa aag tcc     672
Ile Asn Asn Leu Tyr Asn Met Ser Leu Asn Arg Asp Leu Gln Lys Ser
210          215         220

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agc aaa gcg tca gca ctt ctt ctt cac aat ctg tgg tcg aat aag aat 720  
Ser Lys Ala Ser Ala Leu Leu Leu His Asn Leu Trp Ser Asn Lys Asn  
225 230 235 240

atc caa agc ttt ctt aaa aag aac ggc atg aaa aag aag tcc ttt gtg 768  
Ile Gln Ser Phe Leu Lys Lys Asn Gly Met Lys Lys Lys Ser Phe Val  
245 250 255

aat gaa gtg acg tca gca gct ctg aaa tct cat ctg gtt att gac 813  
Asn Glu Val Thr Ser Ala Ala Leu Lys Ser His Leu Val Ile Asp  
260 265 270

<210> 30  
<211> 271  
<212> PRT  
<213> Danio rerio

<400> 30

Met Ala Ser Ser Asn Asn Thr Ser Pro Glu Gly Gly Ser Pro Pro His  
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Gln Asn Arg Ile Arg Gln Ser Leu Glu Asn Cys Val Cys Ile Leu His  
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Asn Leu Thr Tyr Gln Leu Glu Thr Glu Met Pro Thr Leu Phe Asn Lys  
35 40 45

Ile Asn Ala Leu Ala Ser Gln Ser His Asn Arg Ser Ser Ser Ser Asp  
50 55 60

Ala Gly Pro Ile Ile Cys Phe Arg Leu Gln Ser Gln Lys Leu Lys Gln  
65 70 75 80

Arg Gly Phe Asp Tyr Pro Val Met Glu Asp Asn Asn Pro Glu Gly Val  
85 90 95

Gly Trp Leu Phe His Ser Lys Ala Leu Gln Phe Tyr Leu Asn Leu Leu  
100 105 110

Ser Ser Ser Glu Arg Asp Ala Thr Leu Glu Ala Cys Cys Gly Thr Leu  
115 120 125

Gln Asn Leu Thr Ala Asn Glu Gly Ile Val Val Val Arg Leu Thr Val  
130 135 140

Cys Cys Val Cys Val Leu Leu Tyr Lys Ala Pro Gln Ser Leu Pro Gln  
145 150 155 160

Leu Val Gly Phe Leu Asn Ser Gly Leu Ser Lys Lys Glu Ser Ser Pro  
165 170 175

Glu Tyr Asp Ser Ala Met Ala Thr Ala Leu Arg Ser Ala Asn Thr Leu  
180 185 190

Ile Asn Ala Asp Pro Asp Thr Gly Lys Asn Leu Leu Asn Asn Ser Leu  
195 200 205

Ile Asn Asn Leu Tyr Asn Met Ser Leu Asn Arg Asp Leu Gln Lys Ser  
210 215 220

Ser Lys Ala Ser Ala Leu Leu Leu His Asn Leu Trp Ser Asn Lys Asn  
225 230 235 240

Ile Gln Ser Phe Leu Lys Lys Asn Gly Met Lys Lys Lys Ser Phe Val  
245 250 255

Asn Glu Val Thr Ser Ala Ala Leu Lys Ser His Leu Val Ile Asp  
260 265 270

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<212> DNA  
<213> Rattus norvegicus

<220>  
<221> CDS  
<222> (1)..(2184)

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gac cag gac aac tcc acg ctc gct ttg ccc tct gac cag aag atg aag 96  
Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys  
20 25 30  
acc ggc acg tcg ggc agg cag cgt gtg cag gag cag gtg atg atg acg 144  
Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr  
35 40 45  
gtc aaa cgg cag aag tcc aag tct tcg cag tcg tcc acc ttg agt cac 192  
Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His  
50 55 60  
tcc aac cga ggt tcc atg tac gat ggg ctg gtt gac aat tac aac aac 240  
Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Val Asp Asn Tyr Asn Asn  
65 70 75 80  
tat ggc acc acg agc aga agc agc tac ttc tcc aag ttc caa gca ggg 288  
Tyr Gly Thr Thr Ser Arg Ser Ser Tyr Phe Ser Lys Phe Gln Ala Gly  
85 90 95  
aat ggc tcc tgg gga tat ccg atc tat aat ggg acc ctc aag cgg gag 336  
Asn Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu  
100 105 110  
cct gac aac aga cgc ttc agc tcc tat agc cag atg gag aac tgg agc 384  
Pro Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser  
115 120 125  
cgg cac tat ccc cga ggg agc tgt gcc acc aca ggc gct ggc agt gac 432  
Arg His Tyr Pro Arg Gly Ser Cys Ala Thr Thr Gly Ala Gly Ser Asp  
130 135 140  
atc tgc ttc atg cag aaa atc aag gca agc cgc agc gag cct gac ctc 480  
Ile Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu  
Seite 100



145	150	155	160	
tac Tyr	tgt Cys	gac Asp	ccg Pro	agg Arg 165
ggc Gly	caa Gln	aag Lys	acc Thr 180	acc Thr
ggt Gly	cag Gln	aag Lys 195	gct Ala	gtc Val
tcc Ser	aag Lys 210	caa Gln	gac Asp	cca Pro
atg Met 225	tcc Ser	ttt Phe	ggc Gly	cac His
att Ile	gag Glu	tgt Cys	agc Ser	ggg Gly 245
tcc Ser	cag Gln	gac Asp	gag Glu 260	aag Lys
acc Thr	tgc Cys	ttc Phe 275	cag Gln	gat Asp
ggc Gly	atc Ile 290	tgc Cys	aag Lys	ctg Leu
cag Gln 305	cag Gln	gct Ala	gct Ala	gcc Ala
act Thr	aac Asn	aag Lys	ctg Leu	gag Glu 325
agc Ser	ctc Leu	ctg Leu	agg Arg 340	aga Arg
ggg Gly	ctg Leu	ctc Leu	tgg Trp 355	aac Asn
gtg Val 370	gcc Ala	gat Asp	gcc Ala	ctg Leu
tct Ser 385	ggc Gly	tgg Trp	tgt Cys	gat Asp
ccc Pro	gag Glu	gtc Val	ttc Phe	ttc Phe 405
gct Ala	gat Asp	gct Ala	ggc Gly 420	cgc Arg

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gac	aag	tct	gtg	gag	aac	tgc	atg	tgt	atc	ctg	cat	aac	ctc	tca	tac	1392
Asp	Lys	Ser	Val	Glu	Asn	Cys	Met	Cys	Ile	Leu	His	Asn	Leu	Ser	Tyr	
	450					455					460					
cgc	ctg	gac	gcc	gag	gtg	ccc	acc	cgc	tac	cgg	cag	ctg	gag	tac	aac	1440
Arg	Leu	Asp	Ala	Glu	Val	Pro	Thr	Arg	Tyr	Arg	Gln	Leu	Glu	Tyr	Asn	
465					470					475					480	
acc	cgc	aat	gcc	tac	acc	gag	aag	tcc	tcc	act	ggc	tgc	ttc	agc	aac	1488
Thr	Arg	Asn	Ala	Tyr	Thr	Glu	Lys	Ser	Ser	Thr	Gly	Cys	Phe	Ser	Asn	
				485					490					495		
agg	ggt	gac	aag	atg	atg	aac	aac	aac	tat	gac	tgc	cca	ctc	cct	gag	1536
Arg	Gly	Asp	Lys	Met	Met	Asn	Asn	Asn	Tyr	Asp	Cys	Pro	Leu	Pro	Glu	
			500					505					510			
gaa	gag	acc	aac	ccc	aag	ggc	agc	agc	tgg	ctg	tac	cac	tca	gat	gcc	1584
Glu	Glu	Thr	Asn	Pro	Lys	Gly	Ser	Ser	Trp	Leu	Tyr	His	Ser	Asp	Ala	
		515					520					525				
atc	cgc	acc	tac	ctg	aac	ctc	atg	ggc	aag	agc	aag	aaa	gac	gct	acc	1632
Ile	Arg	Thr	Tyr	Leu	Asn	Leu	Met	Gly	Lys	Ser	Lys	Lys	Asp	Ala	Thr	
	530					535					540					
ttg	gag	gcc	tgt	gcc	ggg	gcc	ctg	cag	aac	ctg	acc	gcc	agc	aag	ggc	1680
Leu	Glu	Ala	Cys	Ala	Gly	Ala	Leu	Gln	Asn	Leu	Thr	Ala	Ser	Lys	Gly	
545					550					555					560	
ctg	atg	tcg	aat	ggt	atg	agt	cag	ttg	att	gga	ata	aag	gaa	aag	ggc	1728
Leu	Met	Ser	Asn	Gly	Met	Ser	Gln	Leu	Ile	Gly	Ile	Lys	Glu	Lys	Gly	
				565					570					575		
ttg	cca	caa	ata	gcc	cgt	ctc	ctg	caa	tct	ggc	aat	tcg	gat	gtg	gtg	1776
Leu	Pro	Gln	Ile	Ala	Arg	Leu	Leu	Gln	Ser	Gly	Asn	Ser	Asp	Val	Val	
			580					585					590			
cgg	tct	ggg	gcc	tct	ctg	ctg	agc	aac	atg	tct	cgc	cac	cct	gtg	ctg	1824
Arg	Ser	Gly	Ala	Ser	Leu	Leu	Ser	Asn	Met	Ser	Arg	His	Pro	Val	Leu	
		595					600					605				
cac	aga	gtg	atg	ggg	aat	cag	gtg	ttc	cca	gag	gta	acc	aga	ctc	ctc	1872
His	Arg	Val	Met	Gly	Asn	Gln	Val	Phe	Pro	Glu	Val	Thr	Arg	Leu	Leu	
	610					615					620					
act	agc	cac	acc	ggc	aat	acc	agc	aac	tct	gaa	gat	atc	ctg	tcc	tct	1920
Thr	Ser	His	Thr	Gly	Asn	Thr	Ser	Asn	Ser	Glu	Asp	Ile	Leu	Ser	Ser	
625					630					635					640	
gcc	tgc	tac	act	gtg	agg	aac	ctg	atg	acc	tcg	cag	cct	cag	atg	gcc	1968
Ala	Cys	Tyr	Thr	Val	Arg	Asn	Leu	Met	Thr	Ser	Gln	Pro	Gln	Met	Ala	
				645					650					655		
aag	cag	tac	ttc	tcc	aac	agc	atg	ctc	aac	aat	gtc	ttc	aac	ttg	tgc	2016
Lys	Gln	Tyr	Phe	Ser	Asn	Ser	Met	Leu	Asn	Asn	Val	Phe	Asn	Leu	Cys	
			660					665					670			
cgc	aac	agt	gcc	tcc	tca	cct	aag	gct	gcc	gag	gct	gcc	cgg	cta	ctc	2064
Arg	Asn	Ser	Ala	Ser	Ser	Pro	Lys	Ala	Ala	Glu	Ala	Ala	Arg	Leu	Leu	
		675					680					685				
ctg	tct	gac	atg	tgg	gcc	agc	aag	gag	ctg	cag	agt	gtc	ctc	agg	cag	2112
Leu	Ser	Asp	Met	Trp	Ala	Ser	Lys	Glu	Leu	Gln	Ser	Val	Leu	Arg	Gln	
	690					695					700					

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caa ggt ttc gat agg aac atg atg gga aac ata gct ggg gcc aac aac 2160  
Gln Gly Phe Asp Arg Asn Met Met Gly Asn Ile Ala Gly Ala Asn Asn  
705 710 715 720

ttc aga aac ttc acc tcc cgg ttc 2184  
Phe Arg Asn Phe Thr Ser Arg Phe  
725

<210> 32  
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<212> PRT  
<213> Rattus norvegicus  
<400> 32

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Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys  
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Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr  
35 40 45

Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His  
50 55 60

Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Val Asp Asn Tyr Asn Asn  
65 70 75 80

Tyr Gly Thr Thr Ser Arg Ser Ser Tyr Phe Ser Lys Phe Gln Ala Gly  
85 90 95

Asn Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu  
100 105 110

Pro Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser  
115 120 125

Arg His Tyr Pro Arg Gly Ser Cys Ala Thr Thr Gly Ala Gly Ser Asp  
130 135 140

Ile Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu  
145 150 155 160

Tyr Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Gly Lys  
165 170 175

Gly Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys Ser  
180 185 190

Gly Gln Lys Ala Val Lys Lys Cys Pro Val Arg Pro Pro Ser Cys Thr  
195 200 205

Ser Lys Gln Asp Pro Val Cys Met Pro Pro Ile Ser Cys Asn Lys Asp  
Seite 103

210

215

220

Met Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu Asp  
 225 230 235 240

Ile Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu Cys  
 245 250 255

Ser Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln His  
 260 265 270

Thr Cys Phe Gln Asp Glu Ser Ala Lys Gln Gln Val Tyr Gln Leu Gly  
 275 280 285

Gly Ile Cys Lys Leu Val Asp Leu Leu Arg Ser Pro Asn Gln Asn Val  
 290 295 300

Gln Gln Ala Ala Ala Gly Ala Leu Arg Asn Leu Val Phe Arg Ser Thr  
 305 310 315 320

Thr Asn Lys Leu Glu Thr Arg Arg Gln Asn Gly Ile Arg Glu Ala Val  
 325 330 335

Ser Leu Leu Arg Arg Ser Gly Ser Thr Glu Ile Gln Lys Gln Leu Thr  
 340 345 350

Gly Leu Leu Trp Asn Leu Ser Ser Thr Asp Glu Leu Lys Glu Glu Leu  
 355 360 365

Val Ala Asp Ala Leu Pro Val Leu Thr Asp Arg Val Ile Ile Pro Phe  
 370 375 380

Ser Gly Trp Cys Asp Gly Asn Ser Asn Met Ser Arg Glu Val Val Asp  
 385 390 395 400

Pro Glu Val Phe Phe Asn Ala Thr Gly Cys Leu Arg Asn Leu Ser Ser  
 405 410 415

Ala Asp Ala Gly Arg Gln Thr Met Arg Asn Tyr Ser Gly Leu Ile Asp  
 420 425 430

Ser Leu Met Ala Tyr Val Gln Asn Cys Val Ala Ala Ser Arg Cys Asp  
 435 440 445

Asp Lys Ser Val Glu Asn Cys Met Cys Ile Leu His Asn Leu Ser Tyr  
 450 455 460

Arg Leu Asp Ala Glu Val Pro Thr Arg Tyr Arg Gln Leu Glu Tyr Asn  
 465 470 475 480

Thr Arg Asn Ala Tyr Thr Glu Lys Ser Ser Thr Gly Cys Phe Ser Asn  
 485 490 495

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Arg Gly Asp Lys Met Met Asn Asn Asn Tyr Asp Cys Pro Leu Pro Glu  
500 505 510

Glu Glu Thr Asn Pro Lys Gly Ser Ser Trp Leu Tyr His Ser Asp Ala  
515 520 525

Ile Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys Lys Asp Ala Thr  
530 535 540

Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr Ala Ser Lys Gly  
545 550 555 560

Leu Met Ser Asn Gly Met Ser Gln Leu Ile Gly Ile Lys Glu Lys Gly  
565 570 575

Leu Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn Ser Asp Val Val  
580 585 590

Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His Pro Val Leu  
595 600 605

His Arg Val Met Gly Asn Gln Val Phe Pro Glu Val Thr Arg Leu Leu  
610 615 620

Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp Ile Leu Ser Ser  
625 630 635 640

Ala Cys Tyr Thr Val Arg Asn Leu Met Thr Ser Gln Pro Gln Met Ala  
645 650 655

Lys Gln Tyr Phe Ser Asn Ser Met Leu Asn Asn Val Phe Asn Leu Cys  
660 665 670

Arg Asn Ser Ala Ser Ser Pro Lys Ala Ala Glu Ala Ala Arg Leu Leu  
675 680 685

Leu Ser Asp Met Trp Ala Ser Lys Glu Leu Gln Ser Val Leu Arg Gln  
690 695 700

Gln Gly Phe Asp Arg Asn Met Met Gly Asn Ile Ala Gly Ala Asn Asn  
705 710 715 720

Phe Arg Asn Phe Thr Ser Arg Phe  
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<212> DNA  
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<220>

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aac tgt gta gcg gcc agc cgc tgt gac gac aag tct gtg gaa aac tgc 96  
Asn Cys Val Ala Ala Ser Arg Cys Asp Asp Lys Ser Val Glu Asn Cys  
20 25 30

atg tgt gtt ctg cac aac ctc tcc tac cgc ctg gac gcc gag gtg ccc 144  
Met Cys Val Leu His Asn Leu Ser Tyr Arg Leu Asp Ala Glu Val Pro  
35 40 45

acc cgc tac cgc cag ctg gag tat aac gcc cgc aac gcc tac acc gag 192  
Thr Arg Tyr Arg Gln Leu Glu Tyr Asn Ala Arg Asn Ala Tyr Thr Glu  
50 55 60

aag tcc tcc acc ggc tgc ttc agc aac aag agc gac aag atg atg aac 240  
Lys Ser Ser Thr Gly Cys Phe Ser Asn Lys Ser Asp Lys Met Met Asn  
65 70 75 80

aac aac tat gac tgc ccc ctg cct gag gaa gag acc aac ccc aag ggc 288  
Asn Asn Tyr Asp Cys Pro Leu Pro Glu Glu Glu Thr Asn Pro Lys Gly  
85 90 95

agc ggc tgg ttg tac cat tca gat gcc atc cgc acc tac ctg aac ctc 336  
Ser Gly Trp Leu Tyr His Ser Asp Ala Ile Arg Thr Tyr Leu Asn Leu  
100 105 110

atg ggc aag agg cag tgt tgc tgt ctg cgt gtc cac ctt gga atc tgg 384  
Met Gly Lys Arg Gln Cys Cys Cys Leu Arg Val His Leu Gly Ile Trp  
115 120 125

ctg aac tgg ctg gga gga cca aga ctg cgg ctg ggg tgg gca ggg aag 432  
Leu Asn Trp Leu Gly Gly Pro Arg Leu Arg Leu Gly Trp Ala Gly Lys  
130 135 140

gga agc cgg ggg ctg ctg 450  
Gly Ser Arg Gly Leu Leu  
145 150

<210> 34

<211> 150

<212> PRT

<213> Pan troglodytes

<400> 34

Met Arg Asn Tyr Ser Gly Leu Ile Asp Ser Leu Met Ala Tyr Val Gln  
1 5 10 15

Asn Cys Val Ala Ala Ser Arg Cys Asp Asp Lys Ser Val Glu Asn Cys  
20 25 30

Met Cys Val Leu His Asn Leu Ser Tyr Arg Leu Asp Ala Glu Val Pro  
35 40 45

Thr Arg Tyr Arg Gln Leu Glu Tyr Asn Ala Arg Asn Ala Tyr Thr Glu  
50 55 60

Lys Ser Ser Thr Gly Cys Phe Ser Asn Lys Ser Asp Lys Met Met Asn

65

70

75

80

Asn Asn Tyr Asp Cys Pro Leu Pro Glu Glu Glu Thr Asn Pro Lys Gly  
85 90 95

Ser Gly Trp Leu Tyr His Ser Asp Ala Ile Arg Thr Tyr Leu Asn Leu  
100 105 110

Met Gly Lys Arg Gln Cys Cys Cys Leu Arg Val His Leu Gly Ile Trp  
115 120 125

Leu Asn Trp Leu Gly Gly Pro Arg Leu Arg Leu Gly Trp Ala Gly Lys  
130 135 140

Gly Ser Arg Gly Leu Leu  
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<210> 35  
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<220>  
<221> CDS  
<222> (1)..(5154)

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1 5 10 15

cag ggg cag ttg gac ctc cat atg gga agg atg gtc ttc cag ctg ggg 96  
Gln Gly Gln Leu Asp Leu His Met Gly Arg Met Val Phe Gln Leu Gly  
20 25 30

ctg gtg ttg ctg gtg cag gtt tgg ctg gtg cag ggg cag ttg ggt ctc 144  
Leu Val Leu Leu Val Gln Val Trp Leu Val Gln Gly Gln Leu Gly Leu  
35 40 45

cat atg gga agg atg gtc ttc cag ctg ggg ctg gtg ttg gtg gtg cag 192  
His Met Gly Arg Met Val Phe Gln Leu Gly Leu Val Leu Val Val Gln  
50 55 60

gga gta aag aag tca tgg gat ctg tcc atg gtc agg atg ctc tgc ttg 240  
Gly Val Lys Lys Ser Trp Asp Leu Ser Met Val Arg Met Leu Cys Leu  
65 70 75 80

gca gag ctc aag gat ata cat gac tta aca gga acc tgg ttt aag gat 288  
Ala Glu Leu Lys Asp Ile His Asp Leu Thr Gly Thr Trp Phe Lys Asp  
85 90 95

ggg tta aag tta aca agc atg gac gga gtc tct ttg gag aag gaa ggt 336  
Gly Leu Lys Leu Thr Ser Met Asp Gly Val Ser Leu Glu Lys Glu Gly  
100 105 110

ctg gtc cac aaa ctc gtt att agc aaa gta gaa gat atc cat gct ggg 384  
Leu Val His Lys Leu Val Ile Ser Lys Val Glu Glu Asp Ile His Ala Gly  
115 120 125

aag tat agg ttt gaa gct gga gat ata aaa act gaa gct tca att ttt 432  
Lys Tyr Arg Phe Glu Ala Gly Asp Ile Lys Thr Glu Ala Ser Ile Phe  
130 135 140

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agc Ser	tct Ser	gca Ala	aat Asn	gat Asp 165	gtt Val	acc Thr	att Ile	cag Gln	tgg Trp 170	aat Asn	ccc Pro	cca Pro	aag Lys	gat Asp 175	gat Asp	528
ggg Gly	ggc Gly	aaa Lys	cca Pro 180	gtg Val	caa Gln	aac Asn	tat Tyr	att Ile 185	att Ile	gag Glu	aaa Lys	cag Gln	caa Gln 190	gta Val	ggc Gly	576
aag Lys	agc Ser	gac Asp 195	tgg Trp	gtg Val	gct Ala	gtg Val	gga Gly 200	gaa Glu	acc Thr	ccc Pro	agg Arg	agc Ser 205	tgt Cys	act Thr	act Thr	624
ttc Phe	act Thr 210	acc Thr	agc Ser	aaa Lys	gtg Val	gaa Glu 215	caa Gln	gac Asp	atg Met	agc Ser	tac Tyr 220	tac Tyr	ttc Phe	aga Arg	gtg Val	672
aga Arg 225	gct Ala	gtg Val	aat Asn	gca Ala	gag Glu 230	gga Gly	acc Thr	agc Ser	gat Asp	gca Ala 235	ttg Leu	gaa Glu	tca Ser	gat Asp	gag Glu 240	720
gtg Val	gtg Val	act Thr	atc Ile	agt Ser 245	aaa Lys	gat Asp	cct Pro	ccc Pro	gag Glu 250	atc Ile	att Ile	ggc Gly	gtc Val	agc Ser 255	aaa Lys	768
gac Asp	acc Thr	atc Ile	aca Thr 260	ata Ile	tcc Ser	tgg Trp	aaa Lys	aca Thr 265	cct Pro	cgg Arg	aga Arg	gct Ala	ggc Gly 270	agc Ser	tcc Ser	816
cga Arg	att Ile	tgc Ser 275	gga Gly	tac Tyr	atc Ile	gtt Val	cag Gln 280	aaa Lys	cgc Arg	aag Lys	atg Met	ggc Gly 285	agc Ser	atg Met	acc Thr	864
tgg Trp 290	gtg Val	cca Pro	gtc Val	aac Asn	agt Ser	gtg Val 295	ccc Pro	gta Val	gca Ala	gac Asp	aag Lys 300	aag Lys	ctg Leu	aaa Lys	ata Ile	912
act Thr 305	gat Asp	ctc Leu	aag Lys	aag Lys	ggc Gly 310	ctg Leu	cag Gln	tat Tyr	gag Glu	ttt Phe 315	tgt Cys	gtg Val	gca Ala	gct Ala	gtc Val 320	960
aat Asn	gct Ala	tct Ser	ggc Gly	ata Ile 325	gga Gly	gat Asp	atg Met	agt Ser	gca Ala 330	ccg Pro	tca Ser	caa Gln	tct Ser	gtc Val 335	ttt Phe	1008
gct Ala	cgg Arg	gac Asp	tcc Ser 340	aca Thr	aca Thr	aaa Lys	gag Glu	gga Gly 345	agt Ser	gcc Ala	gtg Val	gaa Glu	ggc Gly 350	tac Tyr	aac Asn	1056
gtg Val	gag Glu	atg Met 355	cgg Arg	tct Ser	tct Ser	aac Asn	aac Asn 360	ctc Leu	agc Ser	tgg Trp	acc Thr	aaa Lys 365	tgc Cys	aac Asn	att Ile	1104
ttt Phe	cct Pro 370	ata Ile	gag Glu	acg Thr	acc Thr	act Thr 375	tac Tyr	aaa Lys	gtt Val	aaa Lys	ggc Gly 380	ctg Leu	caa Gln	acc Thr	aag Lys	1152
ggg Gly 385	acg Thr	tac Tyr	ttc Phe	cta Leu	cgt Arg 390	gat Asp	ggg Gly	gtt Val	cct Pro	ctt Leu 395	cca Pro	agc Ser	cgt Arg	gct Ala	aaa Lys 400	1200
ata Ile	agc Ser	acc Thr	caa Gln	gat Asp 405	gat Asp	acc Thr	tcc Ser	cag Gln	ctg Leu 410	ctg Leu	att Ile	aaa Lys	gca Ala	gct Ala 415	cag Gln	1248



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aaa	aga	gaa	acg	ttc	agc	ttc	caa	ggt	caa	ggt	aca	gat	atc	cca	caa	1344
Lys	Arg	Glu	Thr	Phe	Ser	Phe	Gln	Val	Gln	Val	Thr	Asp	Ile	Pro	Gln	
		435					440					445				
cca	ccc	gga	cct	att	gaa	ctg	aga	gag	aat	gtg	cca	aat	ata	gtg	aca	1392
Pro	Pro	Gly	Pro	Ile	Glu	Leu	Arg	Glu	Asn	Val	Pro	Asn	Ile	Val	Thr	
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gta	acc	tgg	gag	cca	tca	aca	tct	gag	aaa	tgg	gaa	agt	aat	ctc	ttc	1440
Val	Thr	Trp	Glu	Pro	Ser	Thr	Ser	Glu	Lys	Trp	Glu	Ser	Asn	Leu	Phe	
		465			470					475					480	
tac	aca	gtc	ctg	aaa	cgt	gaa	tca	cgg	aaa	ggc	ttg	tgg	cac	gtg	atc	1488
Tyr	Thr	Val	Leu	Lys	Arg	Glu	Ser	Arg	Lys	Gly	Leu	Trp	His	Val	Ile	
				485					490					495		
ggg	gac	ctg	atc	tac	acc	aac	aaa	ttc	act	tac	acc	aaa	gtg	atc	cca	1536
Gly	Asp	Leu	Ile	Tyr	Thr	Asn	Lys	Phe	Thr	Tyr	Thr	Lys	Val	Ile	Pro	
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Gly	Arg	Asp	Tyr	Tyr	Phe	Arg	Val	Val	Ala	Lys	Asn	His	Leu	Gly	Ser	
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Ser	Cys	Pro	Ser	Asp	Thr	Val	Gln	Pro	Trp	Arg	Ile	Arg	Lys	Pro	Lys	
	530					535					540					
gct	gac	att	caa	gtc	aga	cca	cag	agg	tac	aag	ggg	ggt	aat	cag	aac	1680
Ala	Asp	Ile	Gln	Val	Arg	Pro	Gln	Arg	Tyr	Lys	Gly	Val	Asn	Gln	Asn	
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Gln	Pro	Pro	Arg	Phe	Leu	Val	Pro	Leu	Lys	Pro	His	Val	Val	Thr	Thr	
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Lys	Val	Thr	Trp	Tyr	Lys	Asp	Gly	Lys	Asp	Leu	Ser	Asn	Asn	Pro	Ser	
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Ser	Gly	Arg	Ala	Phe	Ser	Arg	Ala	Ser	Leu	Thr	Ile	Lys	Ala	Gln	Leu	
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Ser	Ala	Gly	Ser	Ser	Ser	Gln	His	Arg	Ser	Ser	Ala	Val	Val	Trp	His	
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Ile	Val	Ala	Phe	Val	Leu	Thr	His	Cys	Thr	Lys	Arg	Lys	Gly	Phe	His	
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agc Ser	tct Ser	ccc Pro	ttc Phe	ccc Pro 725	gca Ala	gca Ala	ttt Phe	cgg Arg 730	agc Ser	tgg Trp	ggc Gly	agc Ser	tcg Ser	ctg Leu 735	tgt Cys		2208
gca Ala	ggg Gly	gga Gly	ggt Gly 740	gag Glu	gag Glu	gag Glu	tgc Cys	ggg Gly 745	gat Asp	ctg Leu	cct Pro	aca Thr	gag Glu 750	aat Asn	ggg Gly		2256
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aag Lys	gaa Glu	aac Asn	agc Ser	gca Ala 805	gtg Val	ccg Pro	cgt Arg	gtg Val	gaa Glu 810	gga Gly	gcg Ala	cct Pro	tcc Ser	gat Asp 815	ccc Pro		2448
ccg Pro	gga Gly	ggg Gly	aag Lys 820	gac Asp	ctt Leu	cca Pro	cga Arg	ggg Gly 825	gcc Ala	gag Glu	caa Gln	cgc Arg	cga Arg 830	ggc Gly	tgt Cys		2496
gcg Ala	cac His	gag Glu 835	gag Glu	ggc Gly	agg Arg	ttt Phe	tcc Ser 840	tcg Ser	ggg Gly	aga Arg	aac Asn	ctc Leu 845	ggg Gly	aag Lys	tgt Cys		2544
cag Gln 850	ctg Leu	agc Ser	cac His	ggc Gly	tca Ser	gaa Glu 855	aat Asn	gcc Ala	att Ile	atc Ile	gtg Val 860	gga Gly	gat Asp	gca Ala	ccg Pro		2592
cat His 865	ccc Pro	cgg Arg	ctc Leu	agc Ser	tcc Ser 870	gtc Val	tgt Cys	ccc Pro	ccc Pro	ccc Pro 875	ctc Leu	ccc Pro	cgc Arg	cga Arg	gca Ala 880		2640
ccg Pro	ccg Pro	ggc Gly	agc Ser	agc Ser 885	acg Thr	ccg Pro	agg Arg	tgc Cys	cgc Arg 890	ggt Gly	ggc Gly	aca Thr	gca Ala	gag Glu 895	ccg Pro		2688
cca Pro	tca Ser	gcc Ala	acg Thr 900	gcg Ala	ggg Gly	acg Thr	gct Ala	gcg Ala 905	ctc Leu	ccc Pro	cgg Arg	cgg Arg	att Ile 910	tcg Ser	cag Gln		2736
ccg Pro	tct Ser	gca Ala 915	gac Asp	acc Thr	ttc Phe	agc Ser	tca Ser 920	gga Gly	gcg Ala	cct Pro	gac Asp	aag Lys 925	ttt Phe	gaa Glu	cag Gln		2784
aaa Lys	gcc Ala 930	ccg Pro	cac His	cgc Arg	tcc Ser	ggg Gly 935	agc Ser	agc Ser	att Ile	ggg Gly	cca Pro 940	gcg Ala	agc Ser	cct Pro	ttg Leu		2832
att Ile 945	gcg Ala	atc Ile	agg Arg	cag Gln	ctg Leu 950	gca Ala	gga Gly	atc Ile	cca Pro	gag Glu 955	ctg Leu	ggg Gly	gtg Val	agg Arg	gca Ala 960		2880
gca Ala	gag Glu	ctg Leu	cct Pro	gcc Ala	ctg Leu	cag Gln	ggc Gly	cgc Arg	gag Glu	cgg Arg	cgg Arg	cgg Arg	cgg Arg	gga Gly	gcg Ala		2928

ccg	tgt	gca	tat	gag	tgc	ttc	caa	gac	cag	gcc	agc	tcc	acg	ctg	gcc	2976
Pro	Leu	Ala	Tyr	Glu	Cys	Phe	Gln	Asp	Gln	Ala	Ser	Ser	Thr	Leu	Ala	
			980					985					990			
ctg	ccc	tcg	gat	cac	aag	ctg	aaa	acc	aag	ggc	acg	gga	aag	cag	cgg	3024
Leu	Pro	Ser	Asp	His	Lys	Leu	Lys	Thr	Lys	Gly	Thr	Gly	Lys	Gln	Arg	
		995					1000					1005				
gtc	cag	gag	cag	gtg	atg	atg	acg	gtg	aag	cgg	cag	aag	cag	aag		3069
Val	Gln	Glu	Gln	Val	Met	Met	Thr	Val	Lys	Arg	Gln	Lys	Gln	Lys		
	1010					1015					1020					
tcg	tcg	gtg	tcg	tcg	agc	gtg	ggg	cac	tcc	aac	cga	ggg	tcc	atg		3114
Ser	Ser	Val	Ser	Ser	Ser	Val	Gly	His	Ser	Asn	Arg	Gly	Ser	Met		
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Tyr	Asp	Cys	Val	Ala	Asp	Gly	Tyr	Gly	Tyr	Gly	Thr	Ser	Arg	Gly		
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agt	tat	tac	acc	aaa	acc	caa	atg	gga	aac	agc	agc	tgg	gga	tat		3204
Ser	Tyr	Tyr	Thr	Lys	Thr	Gln	Met	Gly	Asn	Ser	Ser	Trp	Gly	Tyr		
	1055					1060					1065					
ccg	ctg	tac	aac	ggg	acc	ctg	aag	cgg	gat	gcg	gag	aac	cgg	cgc		3249
Pro	Leu	Tyr	Asn	Gly	Thr	Leu	Lys	Arg	Asp	Ala	Glu	Asn	Arg	Arg		
	1070					1075					1080					
tac	agc	tcc	tac	agc	cag	atg	gag	ggc	tgg	ggc	agc	aag	cac	tac		3294
Tyr	Ser	Ser	Tyr	Ser	Gln	Met	Glu	Gly	Trp	Gly	Ser	Lys	His	Tyr		
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Ser	Lys	Ala	Val	Cys	Ser	Pro	Asn	Arg	Ala	Gly	Ser	Asp	Tyr	Cys		
	1100					1105					1110					
ttt	gtg	cag	aac	atc	aag	agc	agc	cgg	agc	gag	ccc	gac	ctc	tac		3384
Phe	Val	Gln	Asn	Ile	Lys	Ser	Ser	Arg	Ser	Glu	Pro	Asp	Leu	Tyr		
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tgc	gaa	cca	ccg	cgg	ggc	aca	ctg	agg	aag	agt	cag	gtt	ggg	ggg		3429
Cys	Glu	Pro	Pro	Arg	Gly	Thr	Leu	Arg	Lys	Ser	Gln	Val	Gly	Gly		
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cgg	gca	gag	cac	aag	gcg	acc	ttg	aac	cgc	cag	agc	atc	tac	agc		3474
Arg	Ala	Glu	His	Lys	Ala	Thr	Leu	Asn	Arg	Gln	Ser	Ile	Tyr	Ser		
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agc	tgc	agc	acc	cag	cag	gga	act	acc	agg	aca	agt	aaa	aaa	ata		3519
Ser	Cys	Ser	Thr	Gln	Gln	Gly	Thr	Thr	Arg	Thr	Ser	Lys	Lys	Ile		
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cca	gca	cgg	gcc	ctc	tcc	tgc	ccc	tcc	agc	aac	aag	ccc	gat	gtg		3564
Pro	Ala	Arg	Ala	Leu	Ser	Cys	Pro	Ser	Ser	Asn	Lys	Pro	Asp	Val		
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Val	Tyr	Ala	Gln	Pro	Val	Met	Ser	Cys	Lys	Gln	Asp	Ala	Val	Tyr		
	1190					1195					1200					
gga	cag	gct	cag	tct	ggc	tcc	aag	tta	gag	aag	gag	gtc	tgc	atc		3654
Gly	Gln	Ala	Gln	Ser	Gly	Ser	Lys	Leu	Glu	Lys	Glu	Val	Cys	Ile		
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ttc	agg	ggc	tgc	tgc	atc	act	gtc	cgg	cag	ctc	tac	gca	gga	ctt		3699
Phe	Arg	Gly	Cys	Cys	Ile	Thr	Val	Arg	Gln	Leu	Tyr	Ala	Gly	Leu		
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atc Ile	cca Pro 1235	cct Pro	ccc Pro	ata Ile	ata Ile	tgt Cys 1240	ggt Gly	gac Asp	gag Glu	ata Ile	gat Asp 1245	ggt Gly	ggc Gly	acg Thr	3744
atg Met	acc Thr 1250	atc Ile	cag Gln	aaa Lys	gcc Ala	ata Ile 1255	cag Gln	ctc Leu	ctg Leu	tgc Cys	tcc Ser 1260	tct Ser	gat Asp	gac Asp	3789
aaa Lys	tac Tyr 1265	cag Gln	gcc Ala	atg Met	ggg Gly	gct Ala 1270	tat Tyr	tac Tyr	ctc Leu	cag Gln	cac His 1275	acc Thr	tgc Cys	ttc Phe	3834
cag Gln	gat Asp 1280	gag Glu	tct Ser	gcc Ala	aag Lys	caa Gln 1285	gag Glu	gtc Val	tat Tyr	cgg Arg	ctg Leu 1290	ggg Gly	ggg Gly	att Ile	3879
gcc Ala	aag Lys 1295	ctc Leu	gtt Val	gag Glu	ctg Leu	ctc Leu 1300	cgc Arg	agc Ser	aca Thr	aac Asn	cag Gln 1305	aac Asn	gta Val	cag Gln	3924
cgg Arg	gcg Ala 1310	gca Ala	gcc Ala	gga Gly	gcc Ala	ctc Leu 1315	cgg Arg	aat Asn	ttg Leu	gtc Val	ttc Phe 1320	agg Arg	aat Asn	cca Pro	3969
acc Thr	aac Asn 1325	aag Lys	ata Ile	gaa Glu	acc Thr	cgg Arg 1330	cgg Arg	cag Gln	aac Asn	ggg Gly	ata Ile 1335	agg Arg	gag Glu	tgt Cys	4014
gtg Val	agc Ser 1340	ctc Leu	ctg Leu	agg Arg	agg Arg	acg Thr 1345	ggg Gly	aac Asn	acc Thr	gaa Glu	att Ile 1350	cag Gln	aag Lys	cag Gln	4059
ctg Leu	aca Thr 1355	ggt Gly	ctg Leu	ctc Leu	tgg Trp	aac Asn 1360	ctc Leu	tcc Ser	tcc Ser	act Thr	gat Asp 1365	gaa Glu	tta Leu	aag Lys	4104
gag Glu	gag Glu 1370	ttg Leu	ata Ile	cag Gln	gag Glu	gcc Ala 1375	ctc Leu	ccc Pro	gtc Val	ttg Leu	aca Thr 1380	gac Asp	tgc Cys	gtt Val	4149
atc Ile	atc Ile 1385	cct Pro	ttc Phe	tct Ser	ggc Gly	tgg Trp 1390	tct Ser	gat Asp	ggt Gly	ggc Gly	tgc Cys 1395	aac Asn	agg Arg	aca Thr	4194
agg Arg	gaa Glu 1400	atc Ile	atc Ile	gac Asp	ccc Pro	gaa Glu 1405	gta Val	ttc Phe	ttc Phe	aat Asn	gct Ala 1410	aca Thr	ggg Gly	tgc Cys	4239
ttg Leu	aga Arg 1415	aac Asn	ctc Leu	agt Ser	tct Ser	gca Ala 1420	gac Asp	atg Met	gga Gly	cgt Arg	cag Gln 1425	acc Thr	atg Met	cga Arg	4284
aac Asn	tac Tyr 1430	cct Pro	ggc Gly	ttg Leu	atc Ile	gat Asp 1435	tcc Ser	gtc Val	atg Met	acc Thr	tat Tyr 1440	gcc Ala	cag Gln	aac Asn	4329
tgc Cys	gtg Val 1445	gct Ala	tct Ser	aac Asn	cga Arg	cct Pro 1450	gat Asp	gac Asp	aag Lys	tct Ser	gtg Val 1455	gag Glu	aac Asn	tgc Cys	4374
atc Ile	tgc Cys 1460	atc Ile	ctg Leu	cac His	aac Asn	ctc Leu 1465	tcc Ser	tac Tyr	cgc Arg	ctg Leu	gat Asp 1470	gct Ala	gag Glu	gtt Val	4419
ccc Pro	aac Asn 1475	aaa Lys	tac Tyr	acc Thr	caa Gln	ctc Leu 1480	aac Asn	cac His	atg Met	gcc Ala	cgg Arg 1485	agc Ser	gtt Val	tac Tyr	4464

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Met Glu Asn Asp Glu Tyr Gly Val Pro Leu Pro Glu Glu Asp Phe	
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aag ccc aag gga ccc agc tgg ctg tac cac tcg gat gcc atc cgc	4599
Lys Pro Lys Gly Pro Ser Trp Leu Tyr His Ser Asp Ala Ile Arg	
1520 1525 1530	
acc tac ctg tcc ctg atg gat cac agc aag aag gat gcc acc ctg	4644
Thr Tyr Leu Ser Leu Met Asp His Ser Lys Lys Asp Ala Thr Leu	
1535 1540 1545	
gag gct tgt gct ggg gcc ctg cag aac ctc act gcg agc cga ggg	4689
Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr Ala Ser Arg Gly	
1550 1555 1560	
ctg atg tcc aat gcc atg agc caa ctg att ggg gtg aag gaa aaa	4734
Leu Met Ser Asn Ala Met Ser Gln Leu Ile Gly Val Lys Glu Lys	
1565 1570 1575	
ggt ttg cct cgc att gca cgg ctg ctg cag tcc aac agc tcc gaa	4779
Gly Leu Pro Arg Ile Ala Arg Leu Leu Gln Ser Asn Ser Ser Glu	
1580 1585 1590	
gtt gtc cgg tcc ggt gct tct ttg ctg agc aac atg tcc cga cat	4824
Val Val Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His	
1595 1600 1605	
cct atc ctg cac aaa acc atg gct cac cag gtg ctc cca gat gta	4869
Pro Ile Leu His Lys Thr Met Ala His Gln Val Leu Pro Asp Val	
1610 1615 1620	
tca cgt ctg ctg tca ttc cag tct gga aat acc aac agc tat ggc	4914
Ser Arg Leu Leu Ser Phe Gln Ser Gly Asn Thr Asn Ser Tyr Gly	
1625 1630 1635	
gag atc atg aca tca gct tgt tac act ctg agg aac ctc atc atg	4959
Glu Ile Met Thr Ser Ala Cys Tyr Thr Leu Arg Asn Leu Ile Met	
1640 1645 1650	
tcc aac cca cac ctg ggg aag tgt tac ttg aca agc aac atg ctc	5004
Ser Asn Pro His Leu Gly Lys Cys Tyr Leu Thr Ser Asn Met Leu	
1655 1660 1665	
aat aat gta gtg agc ctg tgc cga aat ggc tcc tgt cca aaa gca	5049
Asn Asn Val Val Ser Leu Cys Arg Asn Gly Ser Cys Pro Lys Ala	
1670 1675 1680	
gcc gaa gct gct cgc ctc ctc ctg aca gac ctt tgg tcg aac agg	5094
Ala Glu Ala Ala Arg Leu Leu Leu Thr Asp Leu Trp Ser Asn Arg	
1685 1690 1695	
gag ctc cag agt gtg ctc aag cag gag ctg gtg aag ctg tgc acg	5139
Glu Leu Gln Ser Val Leu Lys Gln Glu Leu Val Lys Leu Cys Thr	
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Gly Ala Ala Asp	
1715	

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 <211> 1717  
 <212> PRT  
 <213> Gallus gallus

<400> 36

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Met Val Phe Gln Leu Gly Leu Val Leu Leu Val Gln Val Trp Leu Val
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Gln Gly Gln Leu Asp Leu His Met Gly Arg Met Val Phe Gln Leu Gly
20     25     30

Leu Val Leu Leu Val Gln Val Trp Leu Val Gln Gly Gln Leu Gly Leu
35     40     45

His Met Gly Arg Met Val Phe Gln Leu Gly Leu Val Leu Val Val Gln
50     55     60

Gly Val Lys Lys Ser Trp Asp Leu Ser Met Val Arg Met Leu Cys Leu
65     70     75     80

Ala Glu Leu Lys Asp Ile His Asp Leu Thr Gly Thr Trp Phe Lys Asp
85     90     95

Gly Leu Lys Leu Thr Ser Met Asp Gly Val Ser Leu Glu Lys Glu Gly
100    105    110

Leu Val His Lys Leu Val Ile Ser Lys Val Glu Asp Ile His Ala Gly
115    120    125

Lys Tyr Arg Phe Glu Ala Gly Asp Ile Lys Thr Glu Ala Ser Ile Phe
130    135    140

Val Glu Asp Lys Pro Gln Pro Pro Ala Gly Pro Met Lys Ile Val Glu
145    150    155    160

Ser Ser Ala Asn Asp Val Thr Ile Gln Trp Asn Pro Pro Lys Asp Asp
165    170    175

Gly Gly Lys Pro Val Gln Asn Tyr Ile Ile Glu Lys Gln Gln Val Gly
180    185    190

Lys Ser Asp Trp Val Ala Val Gly Glu Thr Pro Arg Ser Cys Thr Thr
195    200    205

Phe Thr Thr Ser Lys Val Glu Gln Asp Met Ser Tyr Tyr Phe Arg Val
210    215    220

Arg Ala Val Asn Ala Glu Gly Thr Ser Asp Ala Leu Glu Ser Asp Glu
225    230    235    240

Val Val Thr Ile Ser Lys Asp Pro Pro Glu Ile Ile Gly Val Ser Lys
245    250    255

Asp Thr Ile Thr Ile Ser Trp Lys Thr Pro Arg Arg Ala Gly Ser Ser
260    265    270

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Arg Ile Ser Gly Tyr Ile Val Gln Lys Arg Lys Met Gly Ser Met Thr  
275 280 285

Trp Val Pro Val Asn Ser Val Pro Val Ala Asp Lys Lys Leu Lys Ile  
290 295 300

Thr Asp Leu Lys Lys Gly Leu Gln Tyr Glu Phe Cys Val Ala Ala Val  
305 310 315 320

Asn Ala Ser Gly Ile Gly Asp Met Ser Ala Pro Ser Gln Ser Val Phe  
325 330 335

Ala Arg Asp Ser Thr Thr Lys Glu Gly Ser Ala Val Glu Gly Tyr Asn  
340 345 350

Val Glu Met Arg Ser Ser Asn Asn Leu Ser Trp Thr Lys Cys Asn Ile  
355 360 365

Phe Pro Ile Glu Thr Thr Thr Tyr Lys Val Lys Gly Leu Gln Thr Lys  
370 375 380

Gly Thr Tyr Phe Leu Arg Asp Gly Val Pro Leu Pro Ser Arg Ala Lys  
385 390 395 400

Ile Ser Thr Gln Asp Asp Thr Ser Gln Leu Leu Ile Lys Ala Ala Gln  
405 410 415

Phe Thr Asp Ser Gly Ile Tyr Thr Val Glu Leu Thr Ser Gly Thr Gly  
420 425 430

Lys Arg Glu Thr Phe Ser Phe Gln Val Gln Val Thr Asp Ile Pro Gln  
435 440 445

Pro Pro Gly Pro Ile Glu Leu Arg Glu Asn Val Pro Asn Ile Val Thr  
450 455 460

Val Thr Trp Glu Pro Ser Thr Ser Glu Lys Trp Glu Ser Asn Leu Phe  
465 470 475 480

Tyr Thr Val Leu Lys Arg Glu Ser Arg Lys Gly Leu Trp His Val Ile  
485 490 495

Gly Asp Leu Ile Tyr Thr Asn Lys Phe Thr Tyr Thr Lys Val Ile Pro  
500 505 510

Gly Arg Asp Tyr Tyr Phe Arg Val Val Ala Lys Asn His Leu Gly Ser  
515 520 525

Ser Cys Pro Ser Asp Thr Val Gln Pro Trp Arg Ile Arg Lys Pro Lys  
530 535 540

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Ala Asp Ile Gln Val Arg Pro Gln Arg Tyr Lys Gly Val Asn Gln Asn  
545 550 555 560

Gln Pro Pro Arg Phe Leu Val Pro Leu Lys Pro His Val Val Thr Thr  
565 570 575

Gly Ser Glu Cys Arg Met Ser Cys Ala Val Gly Gly His Pro Pro Pro  
580 585 590

Lys Val Thr Trp Tyr Lys Asp Gly Lys Asp Leu Ser Asn Asn Pro Ser  
595 600 605

Tyr Phe Gly Thr Asn Asp Phe Gly Val Cys Ser Leu Val Ile Leu Gly  
610 615 620

Val Ser Lys Ala Asp Glu Gly Asp Tyr Thr Val Glu Ala Thr Asn Glu  
625 630 635 640

Ser Gly Arg Ala Phe Ser Arg Ala Ser Leu Thr Ile Lys Ala Gln Leu  
645 650 655

Ser Ala Gly Ser Ser Ser Gln His Arg Ser Ser Ala Val Val Trp His  
660 665 670

Ile Val Ala Phe Val Leu Thr His Cys Thr Lys Arg Lys Gly Phe His  
675 680 685

Asn Arg Val Glu Pro Arg Ala Ser Ser Arg His Arg Arg Ala Arg Ser  
690 695 700

Leu Pro Lys Leu Gly Pro Val Ile Ser Ala Pro Ser Pro Val Gly Thr  
705 710 715 720

Ser Ser Pro Phe Pro Ala Ala Phe Arg Ser Trp Gly Ser Ser Leu Cys  
725 730 735

Ala Gly Gly Gly Glu Glu Glu Cys Gly Asp Leu Pro Thr Glu Asn Gly  
740 745 750

Arg Glu Ala Ala Gly Asp Gly Gln His Leu Asn Gln Ser Gly Gly Gly  
755 760 765

Ser Leu Gly Ala Ala Lys Ala Thr Thr Arg Glu Pro Glu Pro Met Gly  
770 775 780

Ile Gln Leu Ala Val Gly Ala Ala Ser Gly Ala Gln Asp Ala Gly Gly  
785 790 795 800

Lys Glu Asn Ser Ala Val Pro Arg Val Glu Gly Ala Pro Ser Asp Pro  
805 810 815



Pro Gly Gly Lys Asp Leu Pro Arg Gly Ala Glu Gln Arg Arg Gly Cys  
820 825 830

Ala His Glu Glu Gly Arg Phe Ser Ser Gly Arg Asn Leu Gly Lys Cys  
835 840 845

Gln Leu Ser His Gly Ser Glu Asn Ala Ile Ile Val Gly Asp Ala Pro  
850 855 860

His Pro Arg Leu Ser Ser Val Cys Pro Pro Pro Leu Pro Arg Arg Ala  
865 870 875 880

Pro Pro Gly Ser Ser Thr Pro Arg Cys Arg Gly Gly Thr Ala Glu Pro  
885 890 895

Pro Ser Ala Thr Ala Gly Thr Ala Ala Leu Pro Arg Arg Ile Ser Gln  
900 905 910

Pro Ser Ala Asp Thr Phe Ser Ser Gly Ala Pro Asp Lys Phe Glu Gln  
915 920 925

Lys Ala Pro His Arg Ser Gly Ser Ser Ile Gly Pro Ala Ser Pro Leu  
930 935 940

Ile Ala Ile Arg Gln Leu Ala Gly Ile Pro Glu Leu Gly Val Arg Ala  
945 950 955 960

Ala Glu Leu Pro Ala Leu Gln Gly Arg Glu Arg Arg Arg Arg Gly Ala  
965 970 975

Pro Leu Ala Tyr Glu Cys Phe Gln Asp Gln Ala Ser Ser Thr Leu Ala  
980 985 990

Leu Pro Ser Asp His Lys Leu Lys Thr Lys Gly Thr Gly Lys Gln Arg  
995 1000 1005

Val Gln Glu Gln Val Met Met Thr Val Lys Arg Gln Lys Gln Lys  
1010 1015 1020

Ser Ser Val Ser Ser Ser Val Gly His Ser Asn Arg Gly Ser Met  
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Tyr Asp Cys Val Ala Asp Gly Tyr Gly Tyr Gly Thr Ser Arg Gly  
1040 1045 1050

Ser Tyr Tyr Thr Lys Thr Gln Met Gly Asn Ser Ser Trp Gly Tyr  
1055 1060 1065

Pro Leu Tyr Asn Gly Thr Leu Lys Arg Asp Ala Glu Asn Arg Arg  
1070 1075 1080

Tyr Ser Ser Tyr Ser Gln Met Glu Gly Trp Gly Ser Lys His Tyr  
Seite 117

1085

1090

1095

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Phe	Val	Gln	Asn	Ile	Lys	Ser	Ser	Arg	Ser	Glu	Pro	Asp	Leu	Tyr
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Cys	Glu	Pro	Pro	Arg	Gly	Thr	Leu	Arg	Lys	Ser	Gln	Val	Gly	Gly
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Ser	Cys	Ser	Thr	Gln	Gln	Gly	Thr	Thr	Arg	Thr	Ser	Lys	Lys	Ile
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Pro	Ala	Arg	Ala	Leu	Ser	Cys	Pro	Ser	Ser	Asn	Lys	Pro	Asp	Val
	1175					1180					1185			
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Phe	Arg	Gly	Cys	Cys	Ile	Thr	Val	Arg	Gln	Leu	Tyr	Ala	Gly	Leu
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Lys	Tyr	Gln	Ala	Met	Gly	Ala	Tyr	Tyr	Leu	Gln	His	Thr	Cys	Phe
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Gln	Asp	Glu	Ser	Ala	Lys	Gln	Glu	Val	Tyr	Arg	Leu	Gly	Gly	Ile
	1280					1285					1290			
Ala	Lys	Leu	Val	Glu	Leu	Leu	Arg	Ser	Thr	Asn	Gln	Asn	Val	Gln
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Arg	Ala	Ala	Ala	Gly	Ala	Leu	Arg	Asn	Leu	Val	Phe	Arg	Asn	Pro
	1310					1315					1320			
Thr	Asn	Lys	Ile	Glu	Thr	Arg	Arg	Gln	Asn	Gly	Ile	Arg	Glu	Cys
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Val	Ser	Leu	Leu	Arg	Arg	Thr	Gly	Asn	Thr	Glu	Ile	Gln	Lys	Gln
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	1370					1375					1380			
Ile	Ile	Pro	Phe	Ser	Gly	Trp	Ser	Asp	Gly	Gly	Cys	Asn	Arg	Thr
	1385					1390					1395			
Arg	Glu	Ile	Ile	Asp	Pro	Glu	Val	Phe	Phe	Asn	Ala	Thr	Gly	Cys
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Leu	Arg	Asn	Leu	Ser	Ser	Ala	Asp	Met	Gly	Arg	Gln	Thr	Met	Arg
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Asn	Tyr	Pro	Gly	Leu	Ile	Asp	Ser	Val	Met	Thr	Tyr	Ala	Gln	Asn
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Cys	Val	Ala	Ser	Asn	Arg	Pro	Asp	Asp	Lys	Ser	Val	Glu	Asn	Cys
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Pro	Asn	Lys	Tyr	Thr	Gln	Leu	Asn	His	Met	Ala	Arg	Ser	Val	Tyr
	1475					1480					1485			
Met	Asp	Lys	Thr	Leu	Thr	Gly	Cys	Phe	Asn	Ser	Arg	Ser	Gly	Lys
	1490					1495					1500			
Met	Glu	Asn	Asp	Glu	Tyr	Gly	Val	Pro	Leu	Pro	Glu	Glu	Asp	Phe
	1505					1510					1515			
Lys	Pro	Lys	Gly	Pro	Ser	Trp	Leu	Tyr	His	Ser	Asp	Ala	Ile	Arg
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Thr	Tyr	Leu	Ser	Leu	Met	Asp	His	Ser	Lys	Lys	Asp	Ala	Thr	Leu
	1535					1540					1545			
Glu	Ala	Cys	Ala	Gly	Ala	Leu	Gln	Asn	Leu	Thr	Ala	Ser	Arg	Gly
	1550					1555					1560			
Leu	Met	Ser	Asn	Ala	Met	Ser	Gln	Leu	Ile	Gly	Val	Lys	Glu	Lys
	1565					1570					1575			
Gly	Leu	Pro	Arg	Ile	Ala	Arg	Leu	Leu	Gln	Ser	Asn	Ser	Ser	Glu
	1580					1585					1590			
Val	Val	Arg	Ser	Gly	Ala	Ser	Leu	Leu	Ser	Asn	Met	Ser	Arg	His
	1595					1600					1605			

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Pro Ile Leu His Lys Thr Met Ala His Gln Val Leu Pro Asp Val  
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Ser Arg Leu Leu Ser Phe Gln Ser Gly Asn Thr Asn Ser Tyr Gly  
1625 1630 1635

Glu Ile Met Thr Ser Ala Cys Tyr Thr Leu Arg Asn Leu Ile Met  
1640 1645 1650

Ser Asn Pro His Leu Gly Lys Cys Tyr Leu Thr Ser Asn Met Leu  
1655 1660 1665

Asn Asn Val Val Ser Leu Cys Arg Asn Gly Ser Cys Pro Lys Ala  
1670 1675 1680

Ala Glu Ala Ala Arg Leu Leu Leu Thr Asp Leu Trp Ser Asn Arg  
1685 1690 1695

Glu Leu Gln Ser Val Leu Lys Gln Glu Leu Val Lys Leu Cys Thr  
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Gly Ala Ala Asp  
1715

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Asp Val Thr Arg Lys Ala Pro Glu Pro Gly Ala Gly Ser Val Phe Trp	
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gga gag ggc ggc agg gtt tgg gca ccg cac cat gga gac cgg gtg agg	96
Gly Glu Gly Gly Arg Val Trp Ala Pro His His Gly Asp Arg Val Arg	
20 25 30	
ggc agc acg tct ggg agt tac act gcg cct tgg gaa cgg gac cgt gca	144
Gly Ser Thr Ser Gly Ser Tyr Thr Ala Pro Trp Glu Arg Asp Arg Ala	
35 40 45	
gtc cct cat gag gcg gac gga ccc gcg ggg agg ctt gag ccg gca ggt	192
Val Pro His Glu Ala Asp Gly Pro Ala Gly Arg Leu Glu Pro Ala Gly	
50 55 60	
gga atg cca gtt ccg ggg cag act tcc ctg atg gag gag gca ctg cag	240
Gly Met Pro Val Pro Gly Gln Thr Ser Leu Met Glu Glu Ala Leu Gln	
65 70 75 80	
aag atc acg cag gca gca ccc agc aat act ggc atg gag cct gaa acc	288
Lys Ile Thr Gln Ala Ala Pro Ser Asn Thr Gly Met Glu Pro Glu Thr	
85 90 95	
act gca act aac att ttg gca tct gta aaa gaa cag gag ctg cag ttt	336

Thr	Ala	Thr	Asn	Ile	Leu	Ala	Ser	Val	Lys	Glu	Gln	Glu	Leu	Gln	Phe	
			100					105					110			
gaa	agg	ctc	acc	aga	gaa	ctt	gag	gtg	gaa	aga	cag	atc	ggt	gcc	aat	384
Glu	Arg	Leu	Thr	Arg	Glu	Leu	Glu	Val	Glu	Arg	Gln	Ile	Val	Ala	Asn	
		115					120					125				
cag	cta	gaa	aga	tgc	cga	ctc	ggg	gcc	gag	tca	ccg	agt	atc	gcc	agt	432
Gln	Leu	Glu	Arg	Cys	Arg	Leu	Gly	Ala	Glu	Ser	Pro	Ser	Ile	Ala	Ser	
	130					135					140					
gta	agt	tct	act	gaa	aag	tca	ttt	ccc	tgg	aga	tcg	gga	gat	gtg	cca	480
Val	Ser	Ser	Thr	Glu	Lys	Ser	Phe	Pro	Trp	Arg	Ser	Gly	Asp	Val	Pro	
145					150					155					160	
gcc	gga	ggt	ccc	tcc	aaa	ccg	aga	ttg	tcg	gat	tcc	agt	cac	cct	aac	528
Ala	Gly	Gly	Pro	Ser	Lys	Pro	Arg	Leu	Ser	Asp	Ser	Ser	His	Pro	Asn	
				165					170					175		
cac	ttc	ttg	ata	aga	tca	gag	ccg	gaa	ccg	atg	gca	gtg	tac	tct	cct	576
His	Phe	Leu	Ile	Arg	Ser	Glu	Pro	Glu	Pro	Met	Ala	Val	Tyr	Ser	Pro	
			180					185					190			
gag	caa	agc	tct	ctc	cat	gaa	agt	gag	ggg	tcg	atg	ggt	aac	tcc	agg	624
Glu	Gln	Ser	Ser	Leu	His	Glu	Ser	Glu	Gly	Ser	Met	Gly	Asn	Ser	Arg	
		195					200					205				
agc	tca	act	caa	atg	aat	tca	tac	tct	gac	agc	ggc	tac	caa	gag	gca	672
Ser	Ser	Thr	Gln	Met	Asn	Ser	Tyr	Ser	Asp	Ser	Gly	Tyr	Gln	Glu	Ala	
	210					215					220					
ggc	agc	ttt	cat	aac	aac	aac	ata	ggg	aag	gcc	gaa	ctg	cga	gcc	cag	720
Gly	Ser	Phe	His	Asn	Asn	Asn	Ile	Gly	Lys	Ala	Glu	Leu	Arg	Ala	Gln	
225				230						235					240	
ctg	tcg	ttt	acg	ggg	tcc	aca	ggc	aac	cat	gtt	gta	cgg	aat	tcc	agg	768
Leu	Ser	Phe	Thr	Gly	Ser	Thr	Gly	Asn	His	Val	Val	Arg	Asn	Ser	Arg	
				245				250						255		
gct	gaa	ggc	cag	act	tta	gtc	caa	ccg	cca	cca	cca	aat	aca	atg	gca	816
Ala	Glu	Gly	Gln	Thr	Leu	Val	Gln	Pro	Pro	Pro	Pro	Asn	Thr	Met	Ala	
			260					265					270			
ggc	agc	cga	gct	gtg	cgg	agg	gtc	agc	tct	gtc	cca	tca	agg	tcg	cag	864
Gly	Ser	Arg	Ala	Val	Arg	Arg	Val	Ser	Ser	Val	Pro	Ser	Arg	Ser	Gln	
		275					280					285				
tca	cct	tct	tat	gtc	att	gga	tct	gga	gtt	tcc	cct	tct	aga	ggg	tca	912
Ser	Pro	Ser	Tyr	Val	Ile	Gly	Ser	Gly	Val	Ser	Pro	Ser	Arg	Gly	Ser	
	290					295					300					
ctg	aga	act	tct	gtc	gga	agt	gga	tat	ggt	tct	cca	aca	att	tcc	gat	960
Leu	Arg	Thr	Ser	Val	Gly	Ser	Gly	Tyr	Gly	Ser	Pro	Thr	Ile	Ser	Asp	
305					310					315					320	
cca	cgg	cca	ctt	gcc	act	tca	aac	aca	tac	tct	tct	act	aca	ttg	cct	1008
Pro	Arg	Pro	Leu	Ala	Thr	Ser	Asn	Thr	Tyr	Ser	Ser	Thr	Thr	Leu	Pro	
				325					330					335		
tct	cag	aga	gct	gct	tct	ccg	tat	aca	tca	cac	agg	gcc	aac	tca	ccg	1056
Ser	Gln	Arg	Ala	Ala	Ser	Pro	Tyr	Thr	Ser	His	Arg	Ala	Asn	Ser	Pro	
			340				345						350			
aca	gtc	aca	ctc	agg	att	ggt	tca	ctt	aac	agc	aga	cag	ctg	gcc	aat	1104
Thr	Val	Thr	Leu	Arg	Ile	Gly	Ser	Leu	Asn	Ser	Arg	Gln	Leu	Ala	Asn	
		355					360					365				
cct	aat	aca	atg	act	tca	tct	tac	cag	aca	ctg	gga	agt	tct	gcc	cga	1152
Pro	Asn	Thr	Met	Thr	Ser	Ser	Tyr	Gln	Thr	Leu	Gly	Ser	Ser	Ala	Arg	

## 380

gtt Val 385	ggc Gly	tca Ser	ccg Pro	ttg Leu	act Thr 390	tta Leu	tct Ser	gat Asp	gca Ala	cat His 395	agt Ser	aga Arg	gtt Val	ggc Gly	tca Ser 400	1200
tct Ser	tcc Ser	caa Gln	gct Ala	cct Pro 405	atg Met	gga Gly	tcc Ser	tct Ser	tcc Ser 410	tct Ser	cca Pro	aag Lys	cgg Arg	gct Ala 415	ggc Gly	1248
atg Met	act Thr	gca Ala	gtc Val 420	ccc Pro	cag Gln	cac His	atg Met	gga Gly 425	aca Thr	tta Leu	caa Gln	aga Arg	aac Asn 430	ttg Leu	cat His	1296
gat Asp	att Ile	gac Asp 435	cag Gln	tac Tyr	gga Gly	cag Gln	caa Gln 440	cat His	tat Tyr	gac Asp	atc Ile	tat Tyr 445	gaa Glu	agg Arg	atg Met	1344
gtt Val	cca Pro 450	tca Ser	aga Arg	cca Pro	gat Asp	agc Ser 455	ctt Leu	aca Thr	ggc Gly	tta Leu	aga Arg 460	agt Ser	tct Ser	tat Tyr	gca Ala	1392
agt Ser 465	caa Gln	cac His	agt Ser	caa Gln	ctt Leu 470	gga Gly	cag Gln	gaa Glu	ctg Leu	aga Arg 475	tca Ser	aca Thr	gta Val	tca Ser	ccc Pro 480	1440
gac Asp	ctg Leu	cag Gln	atc Ile	acg Thr 485	cca Pro	ata Ile	tat Tyr	gaa Glu	ggg Gly 490	agg Arg	act Thr	tat Tyr	tat Tyr	agt Ser 495	cca Pro	1488
gtc Val	tac Tyr	cgc Arg	aac Asn 500	gcc Ala	aac Asn	cat His	gcg Ala	gcc Ala 505	ata Ile	gag Glu	ctc Leu	agg Arg	caa Gln 510	ggc Gly	tca Ser	1536
cat His	aca Thr	gca Ala 515	atc Ile	tat Tyr	cgt Arg	aca Thr	gga Gly 520	tca Ser	ggg Gly	tct Ser	ggc Gly	aac Asn 525	cta Leu	cag Gln	agg Arg	1584
acc Thr	atg Met 530	agc Ser	aat Asn	cgt Arg	agc Ser	aca Thr 535	ctt Leu	gca Ala	tac Tyr	caa Gln	aga Arg 540	aat Asn	aat Asn	tat Tyr	gcg Ala	1632
ctc Leu 545	aac Asn	aca Thr	gcg Ala	gct Ala	aat Asn 550	tat Tyr	gca Ala	gag Glu	cca Pro	tac Tyr 555	aga Arg	tca Ser	atg Met	cag Gln	tat Tyr 560	1680
cga Arg	ata Ile	tca Ser	gaa Glu	tcc Ser 565	ggc Gly	tac Tyr	aac Asn	agg Arg	atg Met 570	ccg Pro	cat His	aca Thr	gca Ala	ccc Pro 575	cca Pro	1728
gac Asp	gat Asp	ggc Gly	acc Thr 580	aca Thr	agg Arg	tct Ser	cct Pro	tcc Ser 585	att Ile	gac Asp	agc Ser	atc Ile	cag Gln 590	aag Lys	gac Asp	1776
cca Pro	agg Arg	gag Glu 595	ttt Phe	gct Ala	tgg Trp	cgg Arg	gac Asp 600	ccg Pro	gag Glu	tta Leu	cca Pro	gaa Glu 605	gtc Val	att Ile	tat Tyr	1824
atg Met	ctt Leu 610	cag Gln	cat His	cac His	ttt Phe	cct Pro 615	tcg Ser	gtg Val	caa Gln	gcc Ala	aat Asn 620	gcc Ala	gct Ala	gct Ala	tac Tyr	1872
ctg Leu 625	cag Gln	cac His	ctc Leu	tgc Cys	ttt Phe 630	gga Gly	gac Asp	cac His	aaa Lys	acc Thr 635	aag Lys	ata Ile	gag Glu	gtg Val	tgc Cys 640	1920
cgg Arg	ctg Leu	gga Gly	ggg Gly	atc Ile 645	aaa Lys	cac His	ttg Leu	gta Val	gac Asp 650	ctt Leu	ctt Leu	gat Asp	aac Asn	aag Lys 655	gta Val	1968

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ggc Gly	aaa Lys	tct Ser 675	act Thr	gat Asp	gaa Glu	aat Asn	aag Lys 680	att Ile	gcc Ala	gtg Val	aaa Lys	aat Asn 685	gcg Ala	ggg Gly	ggc Gly	2064
gtt Val	cct Pro 690	gcc Ala	ctt Leu	tta Leu	aga Arg	cta Leu 695	ctg Leu	aga Arg	aaa Lys	aca Thr	aat Asn 700	gac Asp	caa Gln	gaa Glu	gta Val	2112
cgg Arg 705	gaa Glu	ctt Leu	gtc Val	act Thr	gga Gly 710	gtc Val	ctg Leu	tgg Trp	aac Asn	tta Leu 715	tct Ser	tcc Ser	tgt Cys	gat Asp	gct Ala 720	2160
gta Val	aag Lys	atg Met	act Thr	att Ile 725	atc Ile	cgt Arg	gac Asp	gct Ala	tta Leu 730	tct Ser	ccc Pro	ctc Leu	act Thr	aac Asn 735	act Thr	2208
gtg Val	ata Ile	gtg Val	cca Pro 740	cat His	tcg Ser	ggc Gly	ttc Phe	aat Asn 745	aat Asn	tct Ser	tct Ser	ttc Phe	gac Asp 750	gac Asp	gat Asp	2256
cac His	aaa Lys	atg Met 755	aaa Lys	ttt Phe	cag Gln	tct Ser	tca Ser 760	tca Ser	gtc Val	ctg Leu	cgc Arg	aac Asn 765	act Thr	acc Thr	ggc Gly	2304
tgc Cys	atg Met 770	aga Arg	aac Asn	ctg Leu	agt Ser	tcg Ser 775	gca Ala	ggg Gly	gaa Glu	gag Glu	gca Ala 780	cgc Arg	aag Lys	cag Gln	atg Met	2352
aga Arg 785	tac Tyr	tgt Cys	gaa Glu	ggg Gly	ctg Leu 790	gtc Val	gat Asp	tct Ser	ctg Leu 795	ctc Leu	ttc Phe	gtg Val	atc Ile	caa Gln	acc Thr 800	2400
tgt Cys	gtg Val	aac Asn	act Thr	tct Ser 805	gat Asp	ttt Phe	gac Asp	agc Ser	aag Lys 810	acc Thr	gtg Val	gag Glu	aac Asn	tgt Cys 815	gtc Val	2448
tgc Cys	aca Thr	ctg Leu	aga Arg 820	aac Asn	ttg Leu	tct Ser	tat Tyr	cgt Arg 825	ctg Leu	gaa Glu	tta Leu	gaa Glu	gtt Val 830	cct Pro	cag Gln	2496
gct Ala	cga Arg	atg Met 835	ctg Leu	gga Gly	ata Ile	aat Asn	gaa Glu 840	atg Met	gac Asp	ggc Gly	ttc Phe	tgc Cys 845	aag Lys	gaa Glu	tcc Ser	2544
ccc Pro	agc Ser 850	aaa Lys	gac Asp	tct Ser	gac Asp	tcc Ser 855	agc Ser	tgt Cys	tgg Trp	ggg Gly	aaa Lys 860	aag Lys	aag Lys	aaa Lys	aag Lys	2592
aaa Lys 865	aga Arg	aag Lys	ccc Pro	ccg Pro	cag Gln 870	gaa Glu	gac Asp	ttg Leu	tgg Trp	gat Asp 875	gga Gly	gtt Val	ggt Gly	cct Pro	att Ile 880	2640
cct Pro	ggg Gly	ctt Leu	tcc Ser	cag Gln 885	tcc Ser	ccc Pro	aaa Lys	gga Gly	gtg Val 890	gaa Glu	atg Met	ctg Leu	tgg Trp	cac His 895	cca Pro	2688
tca Ser	gta Val	gtc Val	aag Lys 900	cca Pro	tat Tyr	ctg Leu	act Thr	ctt Leu 905	cta Leu	gcg Ala	gaa Glu	agc Ser	tct Ser 910	aac Asn	cct Pro	2736
gca Ala	aca Thr	ctg Leu 915	gag Glu	ggt Gly	tct Ser	gct Ala	ggg Gly 920	tct Ser	tta Leu	cag Gln	aat Asn	ctg Leu 925	tct Ser	gcc Ala	ggg Gly	2784

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aac tgg aag ttt gca gca tac atc aga gct gcg gta agg aag gag aag Asn Trp Lys Phe Ala Ala Tyr Ile Arg Ala Ala Val Arg Lys Glu Lys 930 935 940	2832
gga ctt cct att ctg gtt gaa ctc ctg aga atg gat aat gat agg gtt Gly Leu Pro Ile Leu Val Glu Leu Leu Arg Met Asp Asn Asp Arg Val 945 950 955 960	2880
gtt tct tct gtt gct aca gca tta aga aat atg gca tta gat gtc cgc Val Ser Ser Val Ala Thr Ala Leu Arg Asn Met Ala Leu Asp Val Arg 965 970 975	2928
aac aaa gag ctt att ggt aaa tat gct atg cgg gac ttg gca aac cga Asn Lys Glu Leu Ile Gly Lys Tyr Ala Met Arg Asp Leu Ala Asn Arg 980 985 990	2976
ctc cct gga ggt aat ggg cca aac att tta tct gac gac act gtg gct Leu Pro Gly Gly Asn Gly Pro Asn Ile Leu Ser Asp Asp Thr Val Ala 995 1000 1005	3024
gca atc tgt tgt gct ttg aac gag gta tca agc aag aac atg gag Ala Ile Cys Cys Ala Leu Asn Glu Val Ser Ser Lys Asn Met Glu 1010 1015 1020	3069
aat gct aaa gct ctg gct gac aca gga gga att gag aag ctg gtg Asn Ala Lys Ala Leu Ala Asp Thr Gly Gly Ile Glu Lys Leu Val 1025 1030 1035	3114
aat atc aca aaa gga aag gga gac aga tct tca ctg aaa gtg gtt Asn Ile Thr Lys Gly Lys Gly Asp Arg Ser Ser Leu Lys Val Val 1040 1045 1050	3159
aaa gct gcc gcc caa gtc cta aac aca tta tgg caa tat cga gac Lys Ala Ala Ala Gln Val Leu Asn Thr Leu Trp Gln Tyr Arg Asp 1055 1060 1065	3204
ctt cgt agc att tat aag aag gac ggc tgg aat cag tct cat ttt Leu Arg Ser Ile Tyr Lys Lys Asp Gly Trp Asn Gln Ser His Phe 1070 1075 1080	3249
atc act cca gta tca aca cta gag cgt gag cgt ttc aag tct cac Ile Thr Pro Val Ser Thr Leu Glu Arg Glu Arg Phe Lys Ser His 1085 1090 1095	3294
cct tcc tta tcc acc acc aat cag cag atg tca ccc atg atc cag Pro Ser Leu Ser Thr Thr Asn Gln Gln Met Ser Pro Met Ile Gln 1100 1105 1110	3339
tca gtg ggc agc acc tcc tct tca cca gca ctg tta gga ata cgg Ser Val Gly Ser Thr Ser Ser Ser Pro Ala Leu Leu Gly Ile Arg 1115 1120 1125	3384
gaa cct cac tct ggt tat gag aga aca caa ccc tct atg caa tac Glu Pro His Ser Gly Tyr Glu Arg Thr Gln Pro Ser Met Gln Tyr 1130 1135 1140	3429
tat aac agc cag gga gac ccc atc tct aac aag gaa atg tac act Tyr Asn Ser Gln Gly Asp Pro Ile Ser Asn Lys Glu Met Tyr Thr 1145 1150 1155	3474
ggg tcc agc aaa gca tct ccg atc tac atc ggc tcc tat tca tca Gly Ser Ser Lys Ala Ser Pro Ile Tyr Ile Gly Ser Tyr Ser Ser 1160 1165 1170	3519
cca gca cga gag cag aac agg cgg cag cag cat cac cag ctg tac Pro Ala Arg Glu Gln Asn Arg Arg Gln Gln His His Gln Leu Tyr 1175 1180 1185	3564
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Tyr Ser His Glu Asp Ser Asn Arg Lys Asn Tyr Asp Ala Tyr Arg  
1190 1195 1200

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Gly	Glu	Gly	Gly 20	Arg	Val	Trp	Ala	Pro 25	His	His	Gly	Asp	Arg 30	Val	Arg
Gly	Ser	Thr 35	Ser	Gly	Ser	Tyr	Thr 40	Ala	Pro	Trp	Glu	Arg 45	Asp	Arg	Ala
Val	Pro 50	His	Glu	Ala	Asp	Gly 55	Pro	Ala	Gly	Arg	Leu 60	Glu	Pro	Ala	Gly
Gly 65	Met	Pro	Val	Pro	Gly 70	Gln	Thr	Ser	Leu	Met 75	Glu	Glu	Ala	Leu	Gln 80
Lys	Ile	Thr	Gln	Ala 85	Ala	Pro	Ser	Asn	Thr 90	Gly	Met	Glu	Pro	Glu 95	Thr
Thr	Ala	Thr	Asn 100	Ile	Leu	Ala	Ser	Val 105	Lys	Glu	Gln	Glu	Leu 110	Gln	Phe
Glu	Arg	Leu 115	Thr	Arg	Glu	Leu	Glu 120	Val	Glu	Arg	Gln	Ile 125	Val	Ala	Asn
Gln	Leu 130	Glu	Arg	Cys	Arg	Leu 135	Gly	Ala	Glu	Ser	Pro 140	Ser	Ile	Ala	Ser
Val 145	Ser	Ser	Thr	Glu	Lys 150	Ser	Phe	Pro	Trp	Arg 155	Ser	Gly	Asp	Val	Pro 160

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Ala Gly Gly Pro Ser<sub>165</sub> Lys Pro Arg Leu Ser<sub>170</sub> Asp Ser Ser His Pro Asn<sub>175</sub>

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Glu Gln Ser<sub>195</sub> Ser Leu His Glu Ser<sub>200</sub> Glu Gly Ser Met Gly<sub>205</sub> Asn Ser Arg

Ser Ser<sub>210</sub> Thr Gln Met Asn Ser<sub>215</sub> Tyr Ser Asp Ser Gly<sub>220</sub> Tyr Gln Glu Ala

Gly Ser Phe His Asn Asn<sub>230</sub> Asn Ile Gly Lys Ala<sub>235</sub> Glu Leu Arg Ala Gln<sub>240</sub>

Leu Ser Phe Thr Gly<sub>245</sub> Ser Thr Gly Asn His<sub>250</sub> Val Val Arg Asn Ser<sub>255</sub> Arg

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Gly Ser Arg<sub>275</sub> Ala Val Arg Arg Val<sub>280</sub> Ser Ser Val Pro Ser<sub>285</sub> Arg Ser Gln

Ser Pro<sub>290</sub> Ser Tyr Val Ile Gly<sub>295</sub> Ser Gly Val Ser Pro<sub>300</sub> Ser Arg Gly Ser

Leu Arg Thr Ser Val Gly<sub>310</sub> Ser Gly Tyr Gly Ser<sub>315</sub> Pro Thr Ile Ser Asp<sub>320</sub>

Pro Arg Pro Leu Ala<sub>325</sub> Thr Ser Asn Thr Tyr<sub>330</sub> Ser Ser Thr Thr Leu Pro<sub>335</sub>

Ser Gln Arg Ala<sub>340</sub> Ala Ser Pro Tyr Thr<sub>345</sub> Ser His Arg Ala Asn Ser Pro<sub>350</sub>

Thr Val Thr<sub>355</sub> Leu Arg Ile Gly Ser<sub>360</sub> Leu Asn Ser Arg Gln<sub>365</sub> Leu Ala Asn

Pro Asn<sub>370</sub> Thr Met Thr Ser Ser<sub>375</sub> Tyr Gln Thr Leu Gly<sub>380</sub> Ser Ser Ala Arg

Val Gly Ser Pro Leu Thr<sub>390</sub> Leu Ser Asp Ala His<sub>395</sub> Ser Arg Val Gly Ser<sub>400</sub>

Ser Ser Gln Ala Pro<sub>405</sub> Met Gly Ser Ser Ser<sub>410</sub> Ser Pro Lys Arg Ala Gly<sub>415</sub>

Met Thr Ala Val<sub>420</sub> Pro Gln His Met Gly<sub>425</sub> Thr Leu Gln Arg Asn<sub>430</sub> Leu His

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 450 455 460  
 Ser Gln His Ser Gln Leu Gly Gln Glu Leu Arg Ser Thr Val Ser Pro  
 465 470 475 480  
 Asp Leu Gln Ile Thr Pro Ile Tyr Glu Gly Arg Thr Tyr Tyr Ser Pro  
 485 490 495  
 Val Tyr Arg Asn Ala Asn His Ala Ala Ile Glu Leu Arg Gln Gly Ser  
 500 505 510  
 His Thr Ala Ile Tyr Arg Thr Gly Ser Gly Ser Gly Asn Leu Gln Arg  
 515 520 525  
 Thr Met Ser Asn Arg Ser Thr Leu Ala Tyr Gln Arg Asn Asn Tyr Ala  
 530 535 540  
 Leu Asn Thr Ala Ala Asn Tyr Ala Glu Pro Tyr Arg Ser Met Gln Tyr  
 545 550 555 560  
 Arg Ile Ser Glu Ser Gly Tyr Asn Arg Met Pro His Thr Ala Pro Pro  
 565 570 575  
 Asp Asp Gly Thr Thr Arg Ser Pro Ser Ile Asp Ser Ile Gln Lys Asp  
 580 585 590  
 Pro Arg Glu Phe Ala Trp Arg Asp Pro Glu Leu Pro Glu Val Ile Tyr  
 595 600 605  
 Met Leu Gln His His Phe Pro Ser Val Gln Ala Asn Ala Ala Ala Tyr  
 610 615 620  
 Leu Gln His Leu Cys Phe Gly Asp His Lys Thr Lys Ile Glu Val Cys  
 625 630 635 640  
 Arg Leu Gly Gly Ile Lys His Leu Val Asp Leu Leu Asp Asn Lys Val  
 645 650 655  
 Leu Glu Val Gln Lys Asn Ala Cys Gly Ala Leu Arg Asn Leu Val Tyr  
 660 665 670  
 Gly Lys Ser Thr Asp Glu Asn Lys Ile Ala Val Lys Asn Ala Gly Gly  
 675 680 685  
 Val Pro Ala Leu Leu Arg Leu Leu Arg Lys Thr Asn Asp Gln Glu Val  
 690 695 700

Arg Glu Leu Val Thr Gly Val Leu Trp Asn Leu Ser Ser Cys Asp Ala  
705 710 715 720

Val Lys Met Thr Ile Ile Arg Asp Ala Leu Ser Pro Leu Thr Asn Thr  
725 730 735

Val Ile Val Pro His Ser Gly Phe Asn Asn Ser Ser Phe Asp Asp Asp  
740 745 750

His Lys Met Lys Phe Gln Ser Ser Val Leu Arg Asn Thr Thr Gly  
755 760 765

Cys Met Arg Asn Leu Ser Ser Ala Gly Glu Glu Ala Arg Lys Gln Met  
770 775 780

Arg Tyr Cys Glu Gly Leu Val Asp Ser Leu Leu Phe Val Ile Gln Thr  
785 790 795 800

Cys Val Asn Thr Ser Asp Phe Asp Ser Lys Thr Val Glu Asn Cys Val  
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Asn Trp Lys Phe Ala Ala Tyr Ile Arg Ala Ala Val Arg Lys Glu Lys  
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Gly Leu Pro Ile Leu Val Glu Leu Leu Arg Met Asp Asn Asp Arg Val  
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Val Ser Ser Val Ala Thr Ala Leu Arg Asn Met Ala Leu Asp Val Arg  
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Leu Pro Gly Gly Asn Gly Pro Asn Ile Leu Ser Asp Asp Thr Val Ala  
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Ala Ile Cys Cys Ala Leu Asn Glu Val Ser Ser Lys Asn Met Glu  
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Lys Ala Ala Ala Gln Val Leu Asn Thr Leu Trp Gln Tyr Arg Asp  
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Gly Gly Gly Gly Thr Ser Arg Met Tyr Tyr Ser Arg Arg Gly Val Ile		
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Asp Gly Ile Gln Leu Thr Arg Ser Arg Glu Leu Asp Glu Cys Phe Ala		
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Gln Ala Asn Asp Gln Met Glu Ile Leu Asp Ser Leu Ile Arg Glu Met		
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Arg Gln Met Gly Gln Pro Cys Asp Ala Tyr Gln Lys Arg Leu Leu Gln		
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Leu Gln Glu Gln Met Arg Ala Leu Tyr Lys Ala Ile Ser Val Pro Arg		
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Val Arg Arg Ala Ser Ser Lys Gly Gly Gly Gly Tyr Thr Cys Gln Ser		
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cac His 225	aac Asn	tcc Ser	atc Ile	ggc Gly	gac Asp 230	tat Tyr	cgc Arg	tgg Trp	cag Gln	ctg Leu 235	gac Asp	aaa Lys	atc Ile	aaa Lys	gcc Ala 240	720
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tgc Cys	gag Glu 290	gag Glu	gag Glu	gag Glu	ctg Leu	ctg Leu 295	tac Tyr	gac Asp	tgg Trp	agc Ser	gac Asp 300	aag Lys	aac Asn	acc Thr	aac Asn	912
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gat Asp	gtt Val 370	cat His	ctg Leu	aaa Lys	gaa Glu	aat Asn 375	gct Ala	gcc Ala	tac Tyr	ttt Phe	cag Gln 380	ttt Phe	ttt Phe	gaa Glu	gag Glu	1152
gcg Ala 385	cag Gln	tct Ser	act Thr	gaa Glu	gca Ala 390	tac Tyr	ctg Leu	aag Lys	ggg Gly	ctc Leu 395	cag Gln	gac Asp	tcc Ser	atc Ile	agg Arg 400	1200
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cag Gln	atc Ile	aag Lys	gag Glu 420	ctg Leu	gag Glu	aaa Lys	gaa Glu	cga Arg 425	gag Glu	aaa Lys	atc Ile	ctt Leu	gaa Glu 430	tac Tyr	aag Lys	1296
cgt Arg	cag Gln	gtg Val 435	cag Gln	aac Asn	ttg Leu	gta Val	aac Asn 440	aag Lys	tct Ser	aag Lys	aag Lys	att Ile 445	gta Val	cag Gln	ctg Leu	1344
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gct Gly	ctc Gly	tgt Gly	gac Gly	tac Gly	aaa Gly	caa Gly	gat Gly	cag Gly	aaa Gly	atc Gly	gtg Gly	cat Gly	aag Gly	ggg Gly	gat Gly	1440

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cct Pro	cct Pro	ccg Pro 515	aac Asn	cca Pro	ctg Leu	gcc Ala	gtg Val 520	gac Asp	ctc Leu	tct Ser	tgc Cys	aag Lys 525	att Ile	gag Glu	cag Gln	1584
tac Tyr	tac Tyr 530	gaa Glu	gcc Ala	atc Ile	ttg Leu	gct Ala 535	ctg Leu	tgg Trp	aac Asn	cag Gln	ctc Leu 540	tac Tyr	atc Ile	aac Asn	atg Met	1632
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acc Thr	aac Asn	aga Arg	gaa Glu 660	aat Asn	gac Asp	aag Lys	caa Gln	gaa Glu 665	aca Thr	tgg Trp	atg Met	ctg Leu	atg Met 670	gag Glu	ctg Leu	2016
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aag Lys	aag Lys 1400	tca Ser	gtg Val	gaa Glu	gaa Glu	gtt Val 1405	gct Ala	tct Ser	gaa Glu	atc Ile	cag Gln 1410	cca Pro	ttc Phe	ctt Leu	4239
cgg Arg	ggt Gly 1415	gca Ala	gga Gly	tct Ser	atc Ile	gct Ala 1420	gga Gly	gca Ala	tct Ser	gct Ala	tct Ser 1425	cct Pro	aag Lys	gaa Glu	4284
aaa Lys	tac Tyr 1430	tct Ser	ttg Leu	gta Val	gag Glu	gcc Ala 1435	aag Lys	aga Arg	aag Lys	aaa Lys	tta Leu 1440	atc Ile	agc Ser	cca Pro	4329
gaa Glu	tcc Ser 1445	aca Thr	gtc Val	atg Met	ctt Leu	ctg Leu 1450	gag Glu	gcc Ala	cag Gln	gca Ala	gct Ala 1455	aca Thr	ggt Gly	ggt Gly	4374
ata Ile	att Ile 1460	gat Asp	ccc Pro	cat His	cgg Arg	aat Asn 1465	gag Glu	aag Lys	ctg Leu	act Thr	gtc Val 1470	gac Asp	agt Ser	gcc Ala	4419
ata Ile	gct Ala 1475	cgg Arg	gac Asp	ctc Leu	att Ile	gac Asp 1480	ttc Phe	gat Asp	gac Asp	cgt Arg	cag Gln 1485	cag Gln	ata Ile	tat Tyr	4464
gca Ala	gca Ala 1490	gaa Glu	aaa Lys	gct Ala	atc Ile	act Thr 1495	ggt Gly	ttt Phe	gat Asp	gat Asp	cca Pro 1500	ttt Phe	tca Ser	ggc Gly	4509
aag Lys	aca Thr 1505	gta Val	tct Ser	gtt Val	tca Ser	gaa Glu 1510	gcc Ala	atc Ile	aag Lys	aaa Lys	aat Asn 1515	ttg Leu	att Ile	gat Asp	4554
aga Arg	gaa Glu 1520	acc Thr	gga Gly	atg Met	cgc Arg	ctg Leu 1525	ctg Leu	gaa Glu	gcc Ala	cag Gln	att Ile 1530	gct Ala	tca Ser	ggg Gly	4599
ggt Gta	gta Gac	cct Gtg	aac	agt	gtc	ttt	ttg	cca	aaa	gat	gtc	4644			

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Gly	Val	Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys	Asp	Val	
1535						1540					1545				
gcc	tgt	gcc	cgg	ggg	ctg	att	gat	aga	gat	tgt	tat	cga	tcc	ctg	4689
Ala	Leu	Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg	Ser	Leu	
1550						1555					1560				
aat	gat	ccc	cga	gat	agt	cag	aaa	aac	ttt	gtg	gat	cca	gtc	acc	4734
Asn	Asp	Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro	Val	Thr	
1565						1570					1575				
aaa	aag	aag	gtc	agt	tac	gtg	cag	ctg	aag	gaa	cgg	tgc	aga	atc	4779
Lys	Lys	Lys	Val	Ser	Tyr	Val	Gln	Leu	Lys	Glu	Arg	Cys	Arg	Ile	
1580						1585					1590				
gaa	cca	cat	act	ggg	ctg	ctc	ttg	ctt	tca	gta	cag	aag	aga	agc	4824
Glu	Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys	Arg	Ser	
1595						1600					1605				
atg	tcc	ttc	caa	gga	atc	aga	caa	cct	gtg	acc	gtc	act	gag	cta	4869
Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr	Glu	Leu	
1610						1615					1620				
gta	gat	tct	ggg	ata	ttg	aga	ccg	tcc	act	gtc	aat	gaa	ctg	gaa	4914
Val	Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	Leu	Glu	
1625						1630					1635				
tct	ggg	cag	att	tct	tat	gac	gag	gtt	ggg	gag	aga	att	aag	gac	4959
Ser	Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	Lys	Asp	
1640						1645					1650				
ttc	ctc	cag	ggg	tca	agc	tgc	ata	gca	ggc	ata	tac	aat	gag	acc	5004
Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	Glu	Thr	
1655						1660					1665				
aca	aaa	cag	aag	ctt	ggc	att	tat	gag	gcc	atg	aaa	att	ggc	tta	5049
Thr	Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly	Leu	
1670						1675					1680				
gtc	cga	cct	ggg	act	gct	ctg	gag	ttg	ctg	gaa	gcc	caa	gca	gct	5094
Val	Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	
1685						1690					1695				
act	ggc	ttt	ata	gtg	gat	cct	gtt	agc	aac	ttg	agg	tta	cca	gtg	5139
Thr	Gly	Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu	Pro	Val	
1700						1705					1710				
gag	gaa	gcc	tac	aag	aga	ggg	ctg	gtg	ggc	att	gag	ttc	aaa	gag	5184
Glu	Glu	Ala	Tyr	Lys	Arg	Gly	Leu	Val	Gly	Ile	Glu	Phe	Lys	Glu	
1715						1720					1725				
aag	ctc	ctg	tct	gca	gaa	cga	gct	gtc	act	ggg	tat	aat	gat	cct	5229
Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Asn	Asp	Pro	
1730						1735					1740				
gaa	aca	gga	aac	atc	atc	tct	ttg	ttc	caa	gcc	atg	aat	aag	gaa	5274
Glu	Thr	Gly	Asn	Ile	Ile	Ser	Leu	Phe	Gln	Ala	Met	Asn	Lys	Glu	
1745						1750					1755				
ctc	atc	gaa	aag	ggc	cac	ggg	att	cgc	tta	tta	gaa	gca	cag	atc	5319
Leu	Ile	Glu	Lys	Gly	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	
1760						1765					1770				
gca	acc	ggg	ggg	atc	att	gac	cca	aag	gag	agc	cat	cgt	tta	cca	5364
Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg	Leu	Pro	
1775						1780					1785				
gtt	gac	ata	gca	tat	aag	agg	ggc	tat	ttc	aat	gag	gaa	ctc	agt	5409
Val	Asp	Ile	Ala	Tyr	Lys	Arg	Gly	Tyr	Phe	Asn	Glu	Glu	Leu	Ser	

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1790	1795	1800		
gag att ctc tca gat cca agt gat gat acc aaa gga ttt ttt gac Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp	1805	1810	1815	5454
ccc aac act gaa gaa aat ctt acc tat ctg caa cta aaa gaa aga Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg	1820	1825	1830	5499
tgc att aag gat gag gaa aca ggg ctc tgt ctt ctg cct ctg aaa Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys	1835	1840	1845	5544
gaa aag aag aaa cag gtg cag aca tca caa aag aat acc ctc agg Glu Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg	1850	1855	1860	5589
aag cgt aga gtg gtc ata gtt gac cca gaa acc aat aaa gaa atg Lys Arg Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met	1865	1870	1875	5634
tct gtt cag gag gcc tac aag aag ggc cta att gat tat gaa acc Ser Val Gln Glu Ala Tyr Lys Lys Gly Leu Ile Asp Tyr Glu Thr	1880	1885	1890	5679
ttc aaa gaa ctg tgt gag cag gaa tgt gaa tgg gaa gaa ata acc Phe Lys Glu Leu Cys Glu Gln Glu Cys Glu Trp Glu Glu Ile Thr	1895	1900	1905	5724
atc acg gga tca gat ggc tcc acc agg gtg gtc ctg gta gat aga Ile Thr Gly Ser Asp Gly Ser Thr Arg Val Val Leu Val Asp Arg	1910	1915	1920	5769
aag aca ggc agt cag tat gat att caa gat gct att gac aag ggc Lys Thr Gly Ser Gln Tyr Asp Ile Gln Asp Ala Ile Asp Lys Gly	1925	1930	1935	5814
ctt gtt gac agg aag ttc ttt gat cag tac cga tcc ggc agc ctc Leu Val Asp Arg Lys Phe Phe Asp Gln Tyr Arg Ser Gly Ser Leu	1940	1945	1950	5859
agc ctc act caa ttt gct gac atg atc tcc ttg aaa aat ggt gtc Ser Leu Thr Gln Phe Ala Asp Met Ile Ser Leu Lys Asn Gly Val	1955	1960	1965	5904
ggc acc agc agc agc atg ggc agt ggt gtc agc gat gat gtt ttt Gly Thr Ser Ser Ser Met Gly Ser Gly Val Ser Asp Asp Val Phe	1970	1975	1980	5949
agc agc tcc cga cat gaa tca gta agt aag att tcc acc ata tcc Ser Ser Ser Arg His Glu Ser Val Ser Lys Ile Ser Thr Ile Ser	1985	1990	1995	5994
agc gtc agg aat tta acc ata agg agc agc tct ttt tca gac acc Ser Val Arg Asn Leu Thr Ile Arg Ser Ser Ser Phe Ser Asp Thr	2000	2005	2010	6039
ctg gaa gaa tcg agc ccc att gca gcc atc ttt gac aca gaa aac Leu Glu Glu Ser Ser Pro Ile Ala Ala Ile Phe Asp Thr Glu Asn	2015	2020	2025	6084
ctg gag aaa atc tcc att aca gaa ggt ata gag cgg ggc atc gtt Leu Glu Lys Ile Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val	2030	2035	2040	6129
gac agc atc acg ggt cag agg ctt ctg gag gct cag gcc tgc aca Asp Ser Ile Thr Gly Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr	2045	2050	2055	6174

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ggt Gly	ggc Gly 2060	atc Ile	atc Ile	cac His	cca Pro	acc Thr 2065	acg Thr	ggc Gly	cag Gln	aag Lys	ctg Leu 2070	tca Ser	ctt Leu	cag Gln	6219
gac Asp	gca Ala 2075	gtc Val	tcc Ser	cag Gln	ggg Gly	gtg Val 2080	att Ile	gac Asp	caa Gln	gac Asp	atg Met 2085	gcc Ala	acc Thr	agg Arg	6264
ctg Leu	aag Lys 2090	cct Pro	gct Ala	cag Gln	aaa Lys	gcc Ala 2095	ttc Phe	ata Ile	ggc Gly	ttc Phe	gag Glu 2100	ggg Gly	gtg Val	aag Lys	6309
gga Gly	aag Lys 2105	aag Lys	aag Lys	atg Met	tca Ser	gca Ala 2110	gca Ala	gag Glu	gca Ala	gtg Val	aaa Lys 2115	gaa Glu	aaa Lys	tgg Trp	6354
ctc Leu	ccg Pro 2120	tat Tyr	gag Glu	gct Ala	ggc Gly	cag Gln 2125	cgc Arg	ttc Phe	ctg Leu	gag Glu	ttc Phe 2130	cag Gln	tac Tyr	ctc Leu	6399
acg Thr	gga Gly 2135	ggg Gly	ctt Leu	gtt Val	gac Asp	ccg Pro 2140	gaa Glu	gtg Val	cat His	ggg Gly	agg Arg 2145	ata Ile	agc Ser	acc Thr	6444
gaa Glu	gaa Glu 2150	gcc Ala	atc Ile	cgg Arg	aag Lys	ggg Gly 2155	ttc Phe	ata Ile	gat Asp	ggc Gly	cgc Arg 2160	gcc Ala	gca Ala	cag Gln	6489
agg Arg	ctg Leu 2165	caa Gln	gac Asp	acc Thr	agc Ser	agc Ser 2170	tat Tyr	gcc Ala	aaa Lys	atc Ile	ctg Leu 2175	acc Thr	tgc Cys	ccc Pro	6534
aaa Lys	acc Thr 2180	aaa Lys	tta Leu	aaa Lys	ata Ile	tcc Ser 2185	tat Tyr	aag Lys	gat Asp	gcc Ala	ata Ile 2190	aat Asn	cgc Arg	tcc Ser	6579
atg Met	gta Val 2195	gaa Glu	gat Asp	atc Ile	act Thr	ggg Gly 2200	ctg Leu	cgc Arg	ctt Leu	ctg Leu	gaa Glu 2205	gcc Ala	gcc Ala	tcc Ser	6624
gtg Val	tcg Ser 2210	tcc Ser	aag Lys	ggc Gly	tta Leu	ccc Pro 2215	agc Ser	cct Pro	tac Tyr	aac Asn	atg Met 2220	tct Ser	tcg Ser	gct Ala	6669
ccg Pro	ggg Gly 2225	tcc Ser	cgc Arg	tcc Ser	ggc Gly	tcc Ser 2230	cgc Arg	tcg Ser	gga Gly	tct Ser	cgc Arg 2235	tcc Ser	gga Gly	tct Ser	6714
cgc Arg	tcc Ser 2240	ggg Gly	tcc Ser	cgc Arg	agt Ser	ggg Gly 2245	tcc Ser	cgg Arg	aga Arg	gga Gly	agc Ser 2250	ttt Phe	gac Asp	gcc Ala	6759
aca Thr	ggg Gly 2255	aat Asn	tct Ser	tcc Ser	tac Tyr	tct Ser 2260	tat Tyr	tcc Ser	tac Tyr	tca Ser	ttt Phe 2265	agc Ser	agt Ser	agt Ser	6804
tct Ser	att Ile 2270	ggg Gly	cac His												6816

<210> 40  
 <211> 2272  
 <212> PRT  
 <213> Homo sapiens

<400> 40

Met Ser Cys Asn Gly Gly Ser His Pro Arg Ile Asn Thr Leu Gly Arg  
 1 5 10 15  
 Met Ile Arg Ala Glu Ser Gly Pro Asp Leu Arg Tyr Glu Val Thr Ser  
 20 25 30  
 Gly Gly Gly Gly Thr Ser Arg Met Tyr Tyr Ser Arg Arg Gly Val Ile  
 35 40 45  
 Thr Asp Gln Asn Ser Asp Gly Tyr Cys Gln Thr Gly Thr Met Ser Arg  
 50 55 60  
 His Gln Asn Gln Asn Thr Ile Gln Glu Leu Leu Gln Asn Cys Ser Asp  
 65 70 75 80  
 Cys Leu Met Arg Ala Glu Leu Ile Val Gln Pro Glu Leu Lys Tyr Gly  
 85 90 95  
 Asp Gly Ile Gln Leu Thr Arg Ser Arg Glu Leu Asp Glu Cys Phe Ala  
 100 105 110  
 Gln Ala Asn Asp Gln Met Glu Ile Leu Asp Ser Leu Ile Arg Glu Met  
 115 120 125  
 Arg Gln Met Gly Gln Pro Cys Asp Ala Tyr Gln Lys Arg Leu Leu Gln  
 130 135 140  
 Leu Gln Glu Gln Met Arg Ala Leu Tyr Lys Ala Ile Ser Val Pro Arg  
 145 150 155 160  
 Val Arg Arg Ala Ser Ser Lys Gly Gly Gly Tyr Thr Cys Gln Ser  
 165 170 175  
 Gly Ser Gly Trp Asp Glu Phe Thr Lys His Val Thr Ser Glu Cys Leu  
 180 185 190  
 Gly Trp Met Arg Gln Gln Arg Ala Glu Met Asp Met Val Ala Trp Gly  
 195 200 205  
 Val Asp Leu Ala Ser Val Glu Gln His Ile Asn Ser His Arg Gly Ile  
 210 215 220  
 His Asn Ser Ile Gly Asp Tyr Arg Trp Gln Leu Asp Lys Ile Lys Ala  
 225 230 235 240  
 Asp Leu Arg Glu Lys Ser Ala Ile Tyr Gln Leu Glu Glu Glu Tyr Glu  
 245 250 255  
 Asn Leu Leu Lys Ala Ser Phe Glu Arg Met Asp His Leu Arg Gln Leu  
 260 265 270  
 Gln Asn Ile Ile Gln Ala Thr Ser Arg Glu Ile Met Trp Ile Asn Asp

275

280

285

Cys Glu Glu Glu Glu Leu Leu Tyr Asp Trp Ser Asp Lys Asn Thr Asn  
 290 295 300

Ile Ala Gln Lys Gln Glu Ala Phe Ser Ile Arg Met Ser Gln Leu Glu  
 305 310 315 320

Val Lys Glu Lys Glu Leu Asn Lys Leu Lys Gln Glu Ser Asp Gln Leu  
 325 330 335

Val Leu Asn Gln His Pro Ala Ser Asp Lys Ile Glu Ala Tyr Met Asp  
 340 345 350

Thr Leu Gln Thr Gln Trp Ser Trp Ile Leu Gln Ile Thr Lys Cys Ile  
 355 360 365

Asp Val His Leu Lys Glu Asn Ala Ala Tyr Phe Gln Phe Phe Glu Glu  
 370 375 380

Ala Gln Ser Thr Glu Ala Tyr Leu Lys Gly Leu Gln Asp Ser Ile Arg  
 385 390 395 400

Lys Lys Tyr Pro Cys Asp Lys Asn Met Pro Leu Gln His Leu Leu Glu  
 405 410 415

Gln Ile Lys Glu Leu Glu Lys Glu Arg Glu Lys Ile Leu Glu Tyr Lys  
 420 425 430

Arg Gln Val Gln Asn Leu Val Asn Lys Ser Lys Lys Ile Val Gln Leu  
 435 440 445

Lys Pro Arg Asn Pro Asp Tyr Arg Ser Asn Lys Pro Ile Ile Leu Arg  
 450 455 460

Ala Leu Cys Asp Tyr Lys Gln Asp Gln Lys Ile Val His Lys Gly Asp  
 465 470 475 480

Glu Cys Ile Leu Lys Asp Asn Asn Glu Arg Ser Lys Trp Tyr Val Thr  
 485 490 495

Gly Pro Gly Gly Val Asp Met Leu Val Pro Ser Val Gly Leu Ile Ile  
 500 505 510

Pro Pro Pro Asn Pro Leu Ala Val Asp Leu Ser Cys Lys Ile Glu Gln  
 515 520 525

Tyr Tyr Glu Ala Ile Leu Ala Leu Trp Asn Gln Leu Tyr Ile Asn Met  
 530 535 540

Lys Ser Leu Val Ser Trp His Tyr Cys Met Ile Asp Ile Glu Lys Ile  
 545 550 555 560



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Arg Ala Met Thr Ile Ala Lys Leu Lys Thr Met Arg Gln Glu Asp Tyr  
565 570 575

Met Lys Thr Ile Ala Asp Leu Glu Leu His Tyr Gln Glu Phe Ile Arg  
580 585 590

Asn Ser Gln Gly Ser Glu Met Phe Gly Asp Asp Asp Lys Arg Lys Ile  
595 600 605

Gln Ser Gln Phe Thr Asp Ala Gln Lys His Tyr Gln Thr Leu Val Ile  
610 615 620

Gln Leu Pro Gly Tyr Pro Gln His Gln Thr Val Thr Thr Thr Glu Ile  
625 630 635 640

Thr His His Gly Thr Cys Gln Asp Val Asn His Asn Lys Val Ile Glu  
645 650 655

Thr Asn Arg Glu Asn Asp Lys Gln Glu Thr Trp Met Leu Met Glu Leu  
660 665 670

Gln Lys Ile Arg Arg Gln Ile Glu His Cys Glu Gly Arg Met Thr Leu  
675 680 685

Lys Asn Leu Pro Leu Ala Asp Gln Gly Ser Ser His His Ile Thr Val  
690 695 700

Lys Ile Asn Glu Leu Lys Ser Val Gln Asn Asp Ser Gln Ala Ile Ala  
705 710 715 720

Glu Val Leu Asn Gln Leu Lys Asp Met Leu Ala Asn Phe Arg Gly Ser  
725 730 735

Glu Lys Tyr Cys Tyr Leu Gln Asn Glu Val Phe Gly Leu Phe Gln Lys  
740 745 750

Leu Glu Asn Ile Asn Gly Val Thr Asp Gly Tyr Leu Asn Ser Leu Cys  
755 760 765

Thr Val Arg Ala Leu Leu Gln Ala Ile Leu Gln Thr Glu Asp Met Leu  
770 775 780

Lys Val Tyr Glu Ala Arg Leu Thr Glu Glu Glu Thr Val Cys Leu Asp  
785 790 795 800

Leu Asp Lys Val Glu Ala Tyr Arg Cys Gly Leu Lys Lys Ile Lys Asn  
805 810 815

Asp Leu Asn Leu Lys Lys Ser Leu Leu Ala Thr Met Lys Thr Glu Leu  
820 825 830

Gln Lys Ala Gln Gln Ile His Ser Gln Thr Ser Gln Gln Tyr Pro Leu  
835 840 845

Tyr Asp Leu Asp Leu Gly Lys Phe Gly Glu Lys Val Thr Gln Leu Thr  
850 855 860

Asp Arg Trp Gln Arg Ile Asp Lys Gln Ile Asp Phe Arg Leu Trp Asp  
865 870 875 880

Leu Glu Lys Gln Ile Lys Gln Leu Arg Asn Tyr Arg Asp Asn Tyr Gln  
885 890 895

Ala Phe Cys Lys Trp Leu Tyr Asp Ala Lys Arg Arg Gln Asp Ser Leu  
900 905 910

Glu Ser Met Lys Phe Gly Asp Ser Asn Thr Val Met Arg Phe Leu Asn  
915 920 925

Glu Gln Lys Asn Leu His Ser Glu Ile Ser Gly Lys Arg Asp Lys Ser  
930 935 940

Glu Glu Val Gln Lys Ile Ala Glu Leu Cys Ala Asn Ser Ile Lys Asp  
945 950 955 960

Tyr Glu Leu Gln Leu Ala Ser Tyr Thr Ser Gly Leu Glu Thr Leu Leu  
965 970 975

Asn Ile Pro Ile Lys Arg Thr Met Ile Gln Ser Pro Ser Gly Val Ile  
980 985 990

Leu Gln Glu Ala Ala Asp Val His Ala Arg Tyr Ile Glu Leu Leu Thr  
995 1000 1005

Arg Ser Gly Asp Tyr Tyr Arg Phe Leu Ser Glu Met Leu Lys Ser  
1010 1015 1020

Leu Glu Asp Leu Lys Leu Lys Asn Thr Lys Ile Glu Val Leu Glu  
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Glu Glu Leu Arg Leu Ala Arg Asp Ala Asn Ser Glu Asn Cys Asn  
1040 1045 1050

Lys Asn Lys Phe Leu Asp Gln Asn Leu Gln Lys Tyr Gln Ala Glu  
1055 1060 1065

Cys Ser Gln Phe Lys Ala Lys Leu Ala Ser Leu Glu Glu Leu Lys  
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Arg Gln Ala Glu Leu Asp Gly Lys Ser Ala Lys Gln Asn Leu Asp  
1085 1090 1095

Lys Cys Tyr Gly Gln Ile Lys Glu Leu Asn Glu Lys Ile Thr Arg  
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 Leu Thr Tyr Glu Ile Glu Asp Glu Lys Arg Arg Arg Lys Ser Val  
 1115 1120 1125  
 Glu Asp Arg Phe Asp Gln Gln Lys Asn Asp Tyr Asp Gln Leu Gln  
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 Lys Ala Arg Gln Cys Glu Lys Glu Asn Leu Gly Trp Gln Lys Leu  
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 1160 1165 1170  
 Leu Arg Val Leu Leu Gln Glu Glu Gly Thr Arg Lys Arg Glu Tyr  
 1175 1180 1185  
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 1190 1195 1200  
 Asn Gln Cys Thr Gln Val Val Gln Glu Arg Glu Ser Leu Leu Val  
 1205 1210 1215  
 Lys Ile Lys Val Leu Glu Gln Asp Lys Ala Arg Leu Gln Arg Leu  
 1220 1225 1230  
 Glu Asp Glu Leu Asn Arg Ala Lys Ser Thr Leu Glu Ala Glu Thr  
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 Arg Val Lys Gln Arg Leu Glu Cys Glu Lys Gln Gln Ile Gln Asn  
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 Asp Leu Asn Gln Trp Lys Thr Gln Tyr Ser Arg Lys Glu Glu Ala  
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 Ile Arg Lys Ile Glu Ser Glu Arg Glu Lys Ser Glu Arg Glu Lys  
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 1295 1300 1305  
 Arg Ile Glu Glu Arg Cys Arg Arg Lys Leu Glu Asp Ser Thr Arg  
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 Glu Thr Gln Ser Gln Leu Glu Thr Glu Arg Ser Arg Tyr Gln Arg  
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 Glu Ile Asp Lys Leu Arg Gln Arg Pro Tyr Gly Ser His Arg Glu  
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 Thr Gln Thr Glu Cys Glu Trp Thr Val Asp Thr Ser Lys Leu Val

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Cys	Gln	Leu	Ile	Asp	Lys	Thr	Thr	Leu	Asp	Lys	Leu	Leu Lys Gly
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Lys	Lys	Ser	Val	Glu	Glu	Val	Ala	Ser	Glu	Ile	Gln	Pro Phe Leu
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Arg	Gly	Ala	Gly	Ser	Ile	Ala	Gly	Ala	Ser	Ala	Ser	Pro Lys Glu
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Glu	Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys Arg Ser
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Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr Glu Leu
	1610					1615					1620	

Val	Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	Leu	Glu
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Ser	Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	Lys	Asp
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Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	Glu	Thr
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Thr	Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly	Leu
	1670					1675					1680			
Val	Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala
	1685					1690					1695			
Thr	Gly	Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu	Pro	Val
	1700					1705					1710			
Glu	Glu	Ala	Tyr	Lys	Arg	Gly	Leu	Val	Gly	Ile	Glu	Phe	Lys	Glu
	1715					1720					1725			
Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Asn	Asp	Pro
	1730					1735					1740			
Glu	Thr	Gly	Asn	Ile	Ile	Ser	Leu	Phe	Gln	Ala	Met	Asn	Lys	Glu
	1745					1750					1755			
Leu	Ile	Glu	Lys	Gly	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile
	1760					1765					1770			
Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg	Leu	Pro
	1775					1780					1785			
Val	Asp	Ile	Ala	Tyr	Lys	Arg	Gly	Tyr	Phe	Asn	Glu	Glu	Leu	Ser
	1790					1795					1800			
Glu	Ile	Leu	Ser	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp
	1805					1810					1815			
Pro	Asn	Thr	Glu	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Lys	Glu	Arg
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Cys	Ile	Lys	Asp	Glu	Glu	Thr	Gly	Leu	Cys	Leu	Leu	Pro	Leu	Lys
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Glu	Lys	Lys	Lys	Gln	Val	Gln	Thr	Ser	Gln	Lys	Asn	Thr	Leu	Arg
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Lys	Arg	Arg	Val	Val	Ile	Val	Asp	Pro	Glu	Thr	Asn	Lys	Glu	Met
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Phe Lys Glu Leu Cys Glu Gln Glu Cys Glu Trp Glu Glu Ile Thr  
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Ile Thr Gly Ser Asp Gly Ser Thr Arg Val Val Leu Val Asp Arg  
1910 1915 1920

Lys Thr Gly Ser Gln Tyr Asp Ile Gln Asp Ala Ile Asp Lys Gly  
1925 1930 1935

Leu Val Asp Arg Lys Phe Phe Asp Gln Tyr Arg Ser Gly Ser Leu  
1940 1945 1950

Ser Leu Thr Gln Phe Ala Asp Met Ile Ser Leu Lys Asn Gly Val  
1955 1960 1965

Gly Thr Ser Ser Ser Met Gly Ser Gly Val Ser Asp Asp Val Phe  
1970 1975 1980

Ser Ser Ser Arg His Glu Ser Val Ser Lys Ile Ser Thr Ile Ser  
1985 1990 1995

Ser Val Arg Asn Leu Thr Ile Arg Ser Ser Ser Phe Ser Asp Thr  
2000 2005 2010

Leu Glu Glu Ser Ser Pro Ile Ala Ala Ile Phe Asp Thr Glu Asn  
2015 2020 2025

Leu Glu Lys Ile Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val  
2030 2035 2040

Asp Ser Ile Thr Gly Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr  
2045 2050 2055

Gly Gly Ile Ile His Pro Thr Thr Gly Gln Lys Leu Ser Leu Gln  
2060 2065 2070

Asp Ala Val Ser Gln Gly Val Ile Asp Gln Asp Met Ala Thr Arg  
2075 2080 2085

Leu Lys Pro Ala Gln Lys Ala Phe Ile Gly Phe Glu Gly Val Lys  
2090 2095 2100

Gly Lys Lys Lys Met Ser Ala Ala Glu Ala Val Lys Glu Lys Trp  
2105 2110 2115

Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu Glu Phe Gln Tyr Leu  
2120 2125 2130

Thr Gly Gly Leu Val Asp Pro Glu Val His Gly Arg Ile Ser Thr  
 2135 2140 2145

Glu Glu Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg Ala Ala Gln  
 2150 2155 2160

Arg Leu Gln Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr Cys Pro  
 2165 2170 2175

Lys Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg Ser  
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Met Val Glu Asp Ile Thr Gly Leu Arg Leu Leu Glu Ala Ala Ser  
 2195 2200 2205

Val Ser Ser Lys Gly Leu Pro Ser Pro Tyr Asn Met Ser Ser Ala  
 2210 2215 2220

Pro Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser  
 2225 2230 2235

Arg Ser Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala  
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 Met Thr Arg Ala Glu Ser Gly Pro Asp Leu Arg Tyr Glu Met Thr Tyr  
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agc gct ctg gct gag agg gtg acc ctg gag aaa gca ctg tgg cgc cca 144  
 Ser Ala Leu Ala Glu Arg Val Thr Leu Glu Lys Ala Leu Trp Arg Pro  
 35 40 45

gga tta gga gct gcc gag gaa ccc acg gca caa agg gct ggg tcc tct 192  
 Gly Leu Gly Ala Ala Glu Glu Pro Thr Ala Gln Arg Ala Gly Ser Ser  
 50 55 60

tcc cgg gat agt cgg gta aat aca gcg agg gag tca ctg gtg ggt ggg 240  
 Ser Arg Asp Ser Arg Val Asn Thr Ala Arg Glu Ser Leu Val Gly Gly

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caa Gln	gaa Glu	atg Met	ctg Leu 100	caa Gln	aat Asn	tgc Cys	tca Ser	gac Asp 105	tgt Cys	ctg Leu	atg Met	cgg Arg	gcg Ala 110	gag Glu	ctg Leu	336
atc Ile	gcg Ala	cag Gln 115	ccg Pro	gaa Glu	ctg Leu	aaa Lys	ttc Phe 120	gga Gly	gaa Glu	ggg Gly	atg Met	cag Gln 125	ctg Leu	gca Ala	tgg Trp	384
aac Asn 130	cga Arg	gag Glu	ctg Leu	gat Asp	gag Glu	tat Tyr 135	ttt Phe	aca Thr	caa Gln	gcc Ala	aac Asn 140	gat Asp	cag Gln	atg Met	gaa Glu	432
atc Ile 145	ata Ile	gac Asp	ggc Gly	ttg Leu	atc Ile 150	cga Arg	gag Glu	atg Met	agg Arg	cag Gln 155	atg Met	ggc Gly	cag Gln	ccc Pro	tgt Cys 160	480
gat Asp	gcg Ala	tat Tyr	cag Gln	aaa Lys 165	agg Arg	cag Gln	cag Gln	cag Gln	cag Gln 170	cag Gln	agg Arg	cct Pro	ctg Leu	gta Val 175	gag Glu	528
ctt Leu	ctg Leu	cct Pro	ttt Phe 180	caa Gln	gag Glu	gcc Ala	aat Asn	gtc Val 185	aag Lys	ctt Leu	tat Tyr	tta Leu	atc Ile 190	aaa Lys	ctg Leu	576
ctt Leu	cag Gln 195	ctc Leu	cag Gln	gaa Glu	caa Gln	atg Met	cga Arg 200	gcc Ala	ctt Leu	tac Tyr	aag Lys	gcc Ala 205	atc Ile	agc Ser	gtc Val	624
cct Pro 210	cgg Arg	gtc Val	cga Arg	aga Arg	gcc Ala	agc Ser 215	tcc Ser	aag Lys	gga Gly	gcc Ala	gga Gly 220	ggg Gly	tac Tyr	act Thr	tgc Cys	672
cag Gln 225	agt Ser	gga Gly	tcc Ser	ggc Gly	tgg Trp 230	gac Asp	gag Glu	ttc Phe	acc Thr	aaa Lys 235	cgc Arg	ctc Leu	acg Thr	ggc Gly	gag Glu 240	720
tgt Cys	ctg Leu	ggc Gly	tgg Trp	atg Met 245	agg Arg	cag Gln	cag Gln	agg Arg	gag Glu 250	gaa Glu	atg Met	gac Asp	ctg Leu	atg Met 255	gcc Ala	768
tgg Trp	ggt Gly	gtg Val	gac Asp 260	gct Ala	ggt Gly	tca Ser	gtg Val	gaa Glu 265	cag Gln	cac His	atc Ile	aat Asn 270	agc Ser	cac His	agg Arg	816
agc Ser	atc Ile	cac His 275	aac Asn	acc Thr	att Ile	ggg Gly	gac Asp 280	tac Tyr	cgc Arg	tgg Trp	cag Gln	ctg Leu 285	gac Asp	aag Lys	atc Ile	864
aaa Lys 290	gca Ala	gac Asp	ctg Leu	tgt Cys	ctg Leu	ctc Leu 295	agc Ser	tct Ser	ctc Leu	ctt Leu	cat His 300	ggt Gly	tct Ser	aag Lys	atc Ile	912
cag Gln 305	agg Arg	atc Ile	cga Arg	aat Asn	cgt Arg 310	att Ile	tcc Ser	ttc Phe	agc Ser	aag Lys 315	gtt Val	tta Leu	agt Ser	gac Asp	aga Arg 320	960
cgt Arg	gag Glu	aag Lys	tca Ser	gca Ala 325	atc Ile	tac Tyr	cag Gln	ttg Leu	gag Glu 330	gag Glu	gaa Glu	tat Tyr	gaa Glu	aac Asn 335	ctg Leu	1008
ctg Leu	aaa Lys	gcc Ala	tcc Ser 340	ttc Phe	gag Glu	agg Arg	atg Met	gac Asp 345	cac His	ctg Leu	cgc Arg	cag Gln	ctg Leu 350	cag Gln	aac Asn	1056



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gag Glu 370	gag Glu	gag Glu	ctg Leu	ctc Leu	tat Tyr	gac Asp 375	tgg Trp	agc Ser	gac Asp	aag Lys	aac Asn 380	acc Thr	aac Asn	atc Ile	gct Ala	1152
cag Gln 385	aag Lys	cag Gln	gag Glu	gcc Ala	ttc Phe 390	tct Ser	ata Ile	cgc Arg	atg Met	agt Ser 395	caa Gln	ctg Leu	gag Glu	gtc Val	aag Lys 400	1200
gaa Glu	aag Lys	gaa Glu	ctc Leu	aat Asn 405	aag Lys	ctt Leu	aaa Lys	caa Gln	gaa Glu 410	agt Ser	gac Asp	cag Gln	ctt Leu	gtc Val 415	ctc Leu	1248
aat Asn	cag Gln	cat His	cca Pro 420	gct Ala	tca Ser	gac Asp	aaa Lys	att Ile 425	gag Glu	gca Ala	tac Tyr	atg Met	gac Asp 430	act Thr	ctt Leu	1296
cag Gln	acg Thr	cag Gln 435	tgg Trp	agc Ser	tgg Trp	att Ile	ctg Leu 440	cag Gln	atc Ile	acc Thr	aag Lys	tgc Cys 445	att Ile	gat Asp	gtc Val	1344
cat His 450	ctc Leu	aaa Lys	gaa Glu	aac Asn	gct Ala	gct Ala 455	tac Tyr	ttc Phe	cag Gln	ttt Phe	ttt Phe 460	gaa Glu	gag Glu	gct Ala	cag Gln	1392
tca Ser 465	act Thr	gaa Glu	gcc Ala	tac Tyr	ctg Leu 470	aag Lys	ggc Gly	ctg Leu	cag Gln	gac Asp 475	tcc Ser	atc Ile	agg Arg	aag Lys	aaa Lys 480	1440
tac Tyr	ccc Pro	tgt Cys	gac Asp	aag Lys 485	aat Asn	atg Met	cct Pro	ctc Leu	cag Gln 490	cac His	ctg Leu	ctg Leu	gag Glu	cag Gln 495	atc Ile	1488
aaa Lys	gag Glu	ctg Leu	gag Glu 500	aaa Lys	gaa Glu	cgg Arg	gag Glu	aag Lys 505	atc Ile	att Ile	gaa Glu	tac Tyr	aag Lys 510	cgt Arg	cag Gln	1536
gtg Val	cag Gln	aac Asn 515	ttg Leu	gta Val	aac Asn	aag Lys	tcc Ser 520	aag Lys	aag Lys	atc Ile	gtg Val	cag Gln 525	ctg Leu	aaa Lys	cct Pro	1584
cgg Arg 530	aac Asn	cca Pro	gac Asp	tac Tyr	agg Arg	agc Ser 535	aac Asn	aag Lys	ccc Pro	att Ile	atc Ile 540	ctc Leu	agg Arg	gct Ala	ctc Leu	1632
tgc Cys 545	gac Asp	tac Tyr	aaa Lys	caa Gln	gac Asp 550	cag Gln	aaa Lys	atc Ile	gta Val	cac His 555	aaa Lys	ggg Gly	gat Asp	gag Glu	tgt Cys 560	1680
att Ile	ctg Leu	aag Lys	gac Asp	aac Asn 565	aac Asn	gag Glu	cgc Arg	agc Ser	aag Lys 570	tgg Trp	tac Tyr	gtg Val	acg Thr	ggc Gly 575	cca Pro	1728
gga Gly	ggc Gly	gtg Val	gac Asp 580	atg Met	ctt Leu	gtc Val	cct Pro	tcc Ser 585	gtg Val	ggc Gly	ctg Leu	atc Ile	atc Ile 590	ccg Pro	cct Pro	1776
ccg Pro	aac Asn	cca Pro 595	ctg Leu	gct Ala	gtg Val	gac Asp	ctt Leu 600	tct Ser	tgc Cys	aag Lys	att Ile	gag Glu 605	cag Gln	tac Tyr	tat Tyr	1824
gaa Glu 610	gcc Ala	atc Ile	ttg Leu	gct Ala	ctg Leu	tgg Trp 615	aac Asn	cag Gln	ctc Leu	tac Tyr	atc Ile 620	aac Asn	atg Met	aag Lys	agc Ser	1872

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atg Met	act Thr	att Ile	gcc Ala	aag Lys 645	ctg Leu	aaa Lys	acg Thr	atg Met	aga Arg 650	caa Gln	gaa Glu	gat Asp	tac Tyr	atg Met 655	lys	1968
acc Thr	atc Ile	gaa Glu	gac Asp 660	ctt Leu	gag Glu	ctc Leu	cat His	tac Tyr 665	caa Gln	gac Asp	ttc Phe	atc Ile	aag Lys 670	aac Asn	agc Ser	2016
caa Gln	ggc Gly	tcg Ser 675	gag Glu	atg Met	ttt Phe	gga Gly	gac Asp 680	gac Asp	gac Asp	aag Lys	cgg Arg	cgg Arg 685	atg Met	cag Gln	tcc Ser	2064
cag Gln	ttc Phe 690	acc Thr	gat Asp	gcc Ala	cag Gln	aag Lys 695	cat His	tac Tyr	cag Gln	acc Thr	ctg Leu 700	gtc Val	att Ile	cag Gln	ctt Leu	2112
cct Pro 705	ggc Gly	cac His	ccc Pro	cag Gln	cac His 710	cag Gln	aca Thr	gtc Val	acc Thr	aaa Lys 715	acc Thr	gaa Glu	atc Ile	act Thr	cac His 720	2160
ctg Leu	ggt Gly	acc Thr	tgc Cys	caa Gln 725	gat Asp	gtc Val	aac Asn	cac His	aat Asn 730	aaa Lys	gtg Val	atc Ile	gaa Glu	acg Thr 735	aac Asn	2208
cga Arg	gaa Glu	aac Asn	gac Asp 740	aaa Lys	cag Gln	gag Glu	aca Thr	tgg Trp 745	ttg Leu	ctg Leu	atg Met	gag Glu	ctg Leu 750	cag Gln	aag Lys	2256
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ctc Leu 770	ctg Leu	ctg Leu	gca Ala	gag Glu	caa Gln	ggc Gly 775	tct Ser	aca Thr	cac His	cac His	atc Ile 780	acc Thr	gtg Val	aaa Lys	atc Ile	2352
aac Asn 785	gag Glu	ctc Leu	aag Lys	agc Ser	gta Val 790	cag Gln	aac Asn	gac Asp	tcc Ser	caa Gln 795	gcc Ala	ctg Leu	gcc Ala	gag Glu	gtt Val 800	2400
ctc Leu	aat Asn	cag Gln	ctt Leu	aaa Lys 805	gac Asp	atg Met	ctt Leu	gcc Ala	aac Asn 810	ttc Phe	cga Arg	ggc Gly	tct Ser	gaa Glu 815	aag Lys	2448
tac Tyr	tgc Cys	tac Tyr	ctg Leu 820	cag Gln	aat Asn	gag Glu	ata Ile	ttt Phe 825	gga Gly	ctg Leu	ttt Phe	cag Gln	aag Lys 830	ctg Leu	gaa Glu	2496
aat Asn	atc Ile	aat Asn 835	ggt Gly	gtc Val	tcg Ser	gat Asp	ggc Gly 840	tac Tyr	tta Leu	aac Asn	agc Ser	ctg Leu 845	tgt Cys	tcc Ser	gtg Val	2544
aga Arg	gcc Ala 850	ctt Leu	ctc Leu	cag Gln	gct Ala	att Ile 855	ctg Leu	caa Gln	acg Thr	gaa Glu	gac Asp 860	atg Met	ctg Leu	aag Lys	gtc Val	2592
tat Tyr 865	gaa Glu	gcg Ala	agg Arg	ctg Leu	acg Thr 870	gaa Glu	gag Glu	gaa Glu	act Thr	gtc Val 875	tgt Cys	ctg Leu	gac Asp	ctg Leu	gat Asp 880	2640
aaa Lys	gta Val	gag Glu	gct Ala	tac Tyr 885	cgc Arg	tgc Cys	ggg Gly	ctg Leu	aag Lys 890	aaa Lys	ata Ile	aaa Lys	aat Asn	gac Asp 895	ttg Leu	2688
aac Leu	ttg Val	aaa Leu	aag Lys	tcg Ser	ctg Leu	ttg Val	gcc Ala	acc Thr	atg Met	aag Lys	acg Thr	gag Glu	ctg Leu	cag Gln	aag Lys	2736

Asn Leu Lys Lys Ser Leu Leu Ala Thr Met Lys Thr Glu Leu Gln Lys  
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Ile	Thr	Arg	Leu	Thr	Tyr	Glu	Ile	Glu	Asp	Glu	Lys	Arg	Arg	Arg			
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Lys	Thr	Val	Glu	Asp	Arg	Phe	Asp	Gln	Gln	Lys	Asn	Asp	Tyr	Asp			
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Gln	Leu	Gln	Lys	Ala	Arg	Gln	Cys	Glu	Lys	Glu	Asn	Leu	Ser	Trp			
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Gln	Lys	Leu	Glu	Ser	Glu	Lys	Ala	Ile	Lys	Glu	Lys	Glu	Tyr	Glu			
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Arg	Glu	Tyr	Glu	Asn	Glu	Leu	Ala	Lys	Val	Arg	Asn	His	Tyr	Asn			
	1265					1270					1275						
gag	gag	atg	agt	aat	tta	agg	aac	aag	tat	gaa	aca	gag	att	aac			3879
Glu	Glu	Met	Ser	Asn	Leu	Arg	Asn	Lys	Tyr	Glu	Thr	Glu	Ile	Asn			
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Ile	Thr	Lys	Thr	Thr	Ile	Lys	Glu	Ile	Ser	Met	Gln	Lys	Glu	Asp			
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gat	tcc	aag	aat	ctc	aga	aac	cag	atg	gac	aga	ctc	tcc	cgg	gag			3969
Asp	Ser	Lys	Asn	Leu	Arg	Asn	Gln	Met	Asp	Arg	Leu	Ser	Arg	Glu			
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Asn	Arg	Asp	Leu	Lys	Asp	Glu	Ile	Val	Arg	Leu	Asn	Asp	Ser	Ile			
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Leu	Gln	Ala	Thr	Glu	Gln	Arg	Arg	Arg	Ala	Glu	Glu	Asn	Ala	Leu			
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Gln	Gln	Lys	Ala	Cys	Gly	Ser	Glu	Thr	Met	Gln	Lys	Lys	Gln	Arg			
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Leu	Glu	Ile	Glu	Leu	Lys	Gln	Val	Ile	Gln	Gln	Arg	Ser	Glu	Asp			
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aac	gcc	agg	cac	aag	cag	tcc	ctg	gag	gag	gct	gcc	aag	acc	atc			4194
Asn	Ala	Arg	His	Lys	Gln	Ser	Leu	Glu	Glu	Ala	Ala	Lys	Thr	Ile			
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cag	gac	aag	aac	aaa	gag	atc	gaa	agg	ctc	aaa	gct	gag	tat	cag			4239
Gln	Asp	Lys	Asn	Lys	Glu	Ile	Glu	Arg	Leu	Lys	Ala	Glu	Tyr	Gln			
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Glu	Glu	Ala	Lys	Arg	Arg	Trp	Glu	Tyr	Glu	Asn	Glu	Leu	Ser	Lys			
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acc Thr	atg Met 1460	cag Gln	aag Lys	gaa Glu	gag Glu	gac Asp 1465	acc Thr	agt Ser	ggc Gly	tac Tyr	cga Arg 1470	gcg Ala	cag Gln	ata Ile	4419
gac Asp	aat Asn 1475	ctc Leu	acc Thr	cga Arg	gaa Glu	aac Asn 1480	agg Arg	agc Ser	ttg Leu	tgt Cys	gag Glu 1485	gag Glu	gtc Val	aag Lys	4464
agg Arg	ctg Leu 1490	aag Lys	aac Asn	act Thr	cta Leu	gcc Ala 1495	cag Gln	acc Thr	acc Thr	gag Glu	aac Asn 1500	ctc Leu	agg Arg	agg Arg	4509
gtc Val	gaa Glu 1505	gag Glu	aac Asn	gcc Ala	cag Gln	cag Gln 1510	cag Gln	aag Lys	gcc Ala	act Thr	ggc Gly 1515	tca Ser	gag Glu	atg Met	4554
tct Ser	cag Gln 1520	agg Arg	aaa Lys	cag Gln	cag Gln	ttg Leu 1525	gag Glu	atc Ile	gag Glu	ctc Leu	cga Arg 1530	cag Gln	gtc Val	act Thr	4599
cag Gln	atg Met 1535	cga Arg	act Thr	gaa Glu	gag Glu	agc Ser 1540	atg Met	agg Arg	tac Tyr	aag Lys	cag Gln 1545	tcc Ser	ctc Leu	gat Asp	4644
gac Asp	gct Ala 1550	gcc Ala	aag Lys	acc Thr	atc Ile	cag Gln 1555	gat Asp	aag Lys	aac Asn	aag Lys	gag Glu 1560	atc Ile	gaa Glu	agg Arg	4689
ctc Leu	aaa Lys 1565	cag Gln	ctg Leu	gtc Val	gac Asp	aaa Lys 1570	gaa Glu	acc Thr	aat Asn	gag Glu	agg Arg 1575	aag Lys	tgc Cys	ctg Leu	4734
gag Glu	gac Asp 1580	gaa Glu	aat Asn	tcc Ser	aag Lys	ttg Leu 1585	cag Gln	aga Arg	gtc Val	cag Gln	tat Tyr 1590	gac Asp	ctg Leu	cag Gln	4779
aaa Lys	gcc Ala 1595	aac Asn	aac Asn	agc Ser	gcc Ala	acg Thr 1600	gag Glu	gcc Ala	atg Met	agc Ser	aaa Lys 1605	ctg Leu	aag Lys	gtt Val	4824
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tcc Ser	cag Gln 1625	gag Glu	agg Arg	acc Thr	gtg Val	aag Lys 1630	gat Asp	cag Gln	gac Asp	atc Ile	acg Thr 1635	agg Arg	atc Ile	cag Gln	4914
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gag Glu	ctg Leu 1655	agt Ser	agg Arg	ctg Leu	aag Lys	aga Arg 1660	aca Thr	gcc Ala	tcc Ser	gac Asp	gag Glu 1665	tcc Ser	tcc Ser	aag Lys	5004
agg Arg	aag Lys 1670	atg Met	ctg Leu	gag Glu	gag Glu	gaa Glu 1675	ctg Leu	gag Glu	gcc Ala	atg Met	agg Arg 1680	agg Arg	tct Ser	ttg Leu	5049

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aaa Lys	gag Glu 1685	caa Gln	gcc Ala	gtc Val	aaa Lys	atc Ile 1690	acc Thr	aac Asn	ctg Leu	acc Thr	cag Gln 1695	cag Gln	ctg Leu	gag Glu	5094
cag Gln	gcg Ala 1700	tcc Ser	att Ile	gtt Val	aag Lys	aag Lys 1705	agg Arg	agc Ser	gag Glu	gat Asp	gac Asp 1710	ctc Leu	agg Arg	cag Gln	5139
cag Gln	agg Arg 1715	gat Asp	gtg Val	ctg Leu	gat Asp	ggc Gly 1720	cac His	gtg Val	agg Arg	gag Glu	aag Lys 1725	cag Gln	agg Arg	acc Thr	5184
cag Gln	gag Glu 1730	gag Glu	ctg Leu	agg Arg	agg Arg	ctc Leu 1735	tcc Ser	ttg Leu	gat Asp	gtc Val	gag Glu 1740	gcc Ala	ctc Leu	cgg Arg	5229
cgg Arg	cag Gln 1745	ctg Leu	gtc Val	cag Gln	gaa Glu	cag Gln 1750	gag Glu	aat Asn	gtc Val	aag Lys	cag Gln 1755	gct Ala	cac His	ttg Leu	5274
agg Arg	aat Asn 1760	gag Glu	cat His	ttc Phe	cag Gln	aag Lys 1765	gcc Ala	ata Ile	gaa Glu	gac Asp	aaa Lys 1770	agc Ser	agg Arg	agc Ser	5319
ctc Leu	aat Asn 1775	gag Glu	agt Ser	aaa Lys	ata Ile	gag Glu 1780	atc Ile	gaa Glu	agg Arg	cta Leu	cag Gln 1785	tcg Ser	ctc Leu	acg Thr	5364
gag Glu	aac Asn 1790	ctg Leu	acc Thr	aag Lys	gaa Glu	cac His 1795	ttg Leu	atg Met	ctg Leu	gag Glu	gaa Glu 1800	gag Glu	ctg Leu	agg Arg	5409
aac Asn	ctg Leu 1805	agg Arg	ctg Leu	gag Glu	tac Tyr	gac Asp 1810	gac Asp	ctg Leu	cgg Arg	agg Arg	ggc Gly 1815	cgg Arg	agt Ser	gaa Glu	5454
gcg Ala	gac Asp 1820	agc Ser	gat Asp	aaa Lys	aac Asn	tca Ser 1825	acc Thr	atc Ile	tcc Ser	gag Glu	cta Leu 1830	agg Arg	agc Ser	caa Gln	5499
ctg Leu	cag Gln 1835	atc Ile	agc Ser	aac Asn	aat Asn	cga Arg 1840	acc Thr	ctc Leu	gag Glu	ctg Leu	cag Gln 1845	ggg Gly	ctg Leu	att Ile	5544
aat Asn	gat Asp 1850	tta Leu	cag Gln	aga Arg	gag Glu	agg Arg 1855	gaa Glu	aat Asn	ttg Leu	aga Arg	cag Gln 1860	gaa Glu	att Ile	gag Glu	5589
aaa Lys	ttc Phe 1865	caa Gln	aag Lys	cag Gln	gct Ala	tta Leu 1870	gag Glu	gca Ala	tct Ser	aat Asn	agg Arg 1875	atc Ile	cag Gln	gag Glu	5634
tca Ser	aag Lys 1880	agt Ser	cag Gln	tgc Cys	act Thr	caa Gln 1885	gtt Val	gtt Val	cag Gln	gag Glu	aga Arg 1890	gag Glu	agc Ser	ctg Leu	5679
ctg Leu	gtg Val 1895	aag Lys	atc Ile	aaa Lys	gtc Val	ctg Leu 1900	gag Glu	caa Gln	gac Asp	aag Lys	gag Ala 1905	agg Arg	ctg Leu	cag Gln	5724
cgg Arg	ctg Leu 1910	gag Glu	gat Asp	gag Glu	ctg Leu	aac Asn 1915	cgt Arg	gcc Ala	aaa Lys	gca Ala	acg Thr 1920	ctg Leu	gag Glu	gca Ala	5769
gaa Glu	agc Ser 1925	cgg Arg	gtg Val	aaa Lys	cag Gln	cgt Arg 1930	ctg Leu	gag Glu	tgt Cys	gag Glu	aag Lys 1935	cag Gln	cag Gln	atc Ile	5814
cag	aac	gac	ctg	aac	cag	tgg	aaa	act	cag	tat	tcc	cgc	aag	gag	5859

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Glu	Thr	Ile	Arg	Lys	Ile	Glu	Ser	Glu	Arg	Glu	Lys	Ser	Glu	Arg	
1955						1960					1965				
gaa	aag	aac	agt	ctc	agg	agt	gag	atc	gag	agg	ctc	cag	gcg	gag	5949
Glu	Lys	Asn	Ser	Leu	Arg	Ser	Glu	Ile	Glu	Arg	Leu	Gln	Ala	Glu	
1970						1975					1980				
atc	aag	agg	atc	gaa	gag	aga	tgc	agg	agg	aag	cta	gag	gat	tct	5994
Ile	Lys	Arg	Ile	Glu	Glu	Arg	Cys	Arg	Arg	Lys	Leu	Glu	Asp	Ser	
1985						1990					1995				
tct	agg	gag	act	cag	tcc	cag	ctg	gaa	tcc	gaa	cgc	tgc	agg	ctt	6039
Ser	Arg	Glu	Thr	Gln	Ser	Gln	Leu	Glu	Ser	Glu	Arg	Cys	Arg	Leu	
2000						2005					2010				
cag	aag	gag	atc	gag	aaa	ctc	agg	cag	cgc	ccc	tac	ggg	tcc	cat	6084
Gln	Lys	Glu	Ile	Glu	Lys	Leu	Arg	Gln	Arg	Pro	Tyr	Gly	Ser	His	
2015						2020					2025				
cgg	gag	acc	cag	acg	gaa	tac	gag	tgg	acc	gtt	gat	tcc	tcc	aag	6129
Arg	Glu	Thr	Gln	Thr	Glu	Tyr	Glu	Trp	Thr	Val	Asp	Ser	Ser	Lys	
2030						2035					2040				
ctg	gta	ttt	gat	ggg	ctg	agg	aag	aag	gtg	acg	gca	atg	cag	ctc	6174
Leu	Val	Phe	Asp	Gly	Leu	Arg	Lys	Lys	Val	Thr	Ala	Met	Gln	Leu	
2045						2050					2055				
tat	gag	tgc	cag	ctg	atc	gac	aag	acg	acg	cta	gac	aag	ctg	ttg	6219
Tyr	Glu	Cys	Gln	Leu	Ile	Asp	Lys	Thr	Thr	Leu	Asp	Lys	Leu	Leu	
2060						2065					2070				
aag	ggg	aag	aag	tca	gtg	gag	gag	gtg	gcc	tca	gag	atc	cag	cct	6264
Lys	Gly	Lys	Lys	Ser	Val	Glu	Glu	Val	Ala	Ser	Glu	Ile	Gln	Pro	
2075						2080					2085				
ttc	ctg	cgc	ggc	gca	ggc	gcc	atc	gcc	ggg	gct	tcc	gct	tct	ccc	6309
Phe	Leu	Arg	Gly	Ala	Gly	Ala	Ile	Ala	Gly	Ala	Ser	Ala	Ser	Pro	
2090						2095					2100				
aag	gaa	aag	tac	tct	ttg	gtg	gag	gcc	aag	aga	aag	aaa	ttc	atc	6354
Lys	Glu	Lys	Tyr	Ser	Leu	Val	Glu	Ala	Lys	Arg	Lys	Lys	Phe	Ile	
2105						2110					2115				
acc	cca	gaa	tcc	act	gtc	atg	ctt	ctg	gag	gcc	cag	gca	gcc	acc	6399
Thr	Pro	Glu	Ser	Thr	Val	Met	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	
2120						2125					2130				
ggt	ggt	atc	atc	gat	ccc	cat	cgg	aat	gag	aag	ctc	act	gtg	gac	6444
Gly	Gly	Ile	Ile	Asp	Pro	His	Arg	Asn	Glu	Lys	Leu	Thr	Val	Asp	
2135						2140					2145				
aat	gcc	gta	gcc	cgg	gat	ctc	atc	gac	ttc	gac	gac	cgc	caa	cag	6489
Asn	Ala	Val	Ala	Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Gln	Gln	
2150						2155					2160				
atc	tac	aca	gcg	gag	aaa	gcc	atc	act	ggt	ttc	gat	gac	ccg	ttt	6534
Ile	Tyr	Thr	Ala	Glu	Lys	Ala	Ile	Thr	Gly	Phe	Asp	Asp	Pro	Phe	
2165						2170					2175				
tcg	ggc	aag	acg	gtc	tct	gtt	tca	gaa	gcc	atc	aag	aag	aat	ttg	6579
Ser	Gly	Lys	Thr	Val	Ser	Val	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu	
2180						2185					2190				
atc	gac	aga	gaa	acc	gga	atg	cgc	ctg	ctg	gaa	gcc	cag	ctt	gct	6624
Ile	Asp	Arg	Glu	Thr	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Leu	Ala	

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2195						2200					2205						
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Ser	Gly	Gly	Val	Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys			
	2210					2215					2220						
gat	gtc	gcc	ttg	gcc	cgt	ggg	ctg	att	gat	aga	gat	ttg	tat	cgc			6714
Asp	Val	Ala	Leu	Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg			
	2225					2230					2235						
tcc	ttg	aac	gat	ccc	cga	gat	agt	cag	aag	aac	ttc	gtg	gat	cca			6759
Ser	Leu	Asn	Asp	Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro			
	2240					2245					2250						
atc	acc	aag	aag	aag	gtc	agc	tac	atg	cag	ctg	aga	gaa	agg	tgc			6804
Ile	Thr	Lys	Lys	Lys	Val	Ser	Tyr	Met	Gln	Leu	Arg	Glu	Arg	Cys			
	2255					2260					2265						
aga	atc	gaa	ccc	cac	acg	ggt	ctg	ctc	ctg	ctg	tca	gta	cag	aag			6849
Arg	Ile	Glu	Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys			
	2270					2275					2280						
aga	agc	atg	tcc	ttc	cag	gga	atc	aga	caa	ccc	gtg	acc	gtc	acc			6894
Arg	Ser	Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr			
	2285					2290					2295						
gaa	ctg	gtt	gat	tct	ggc	ata	ttg	aga	ccg	tcc	act	gta	aac	gaa			6939
Glu	Leu	Val	Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu			
	2300					2305					2310						
ctg	gaa	tcc	ggt	cag	att	tcc	tat	gat	gag	gtt	ggg	gag	aga	atc			6984
Leu	Glu	Ser	Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile			
	2315					2320					2325						
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Lys	Asp	Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn			
	2330					2335					2340						
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Glu	Thr	Thr	Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile			
	2345					2350					2355						
ggc	tta	gtt	cga	cct	ggt	acc	gcc	ctg	gag	ttg	ctg	gaa	gcc	caa			7119
Gly	Leu	Val	Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln			
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gca	gct	act	ggc	ttt	att	gtg	gat	ccc	gtc	agc	aat	tta	agg	cta			7164
Ala	Ala	Thr	Gly	Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu			
	2375					2380					2385						
cct	gtg	gag	gaa	gcc	tac	aag	aga	ggt	ctg	gtg	ggc	att	gag	ttc			7209
Pro	Val	Glu	Glu	Ala	Tyr	Lys	Arg	Gly	Leu	Val	Gly	Ile	Glu	Phe			
	2390					2395					2400						
aaa	gag	aag	ctt	ctg	tct	gcg	gaa	cga	gcc	gtc	act	ggc	tac	aac			7254
Lys	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Asn			
	2405					2410					2415						
gat	cct	gag	acc	gga	aac	atc	atc	tct	tta	ttc	caa	gca	atg	aac			7299
Asp	Pro	Glu	Thr	Gly	Asn	Ile	Ile	Ser	Leu	Phe	Gln	Ala	Met	Asn			
	2420					2425					2430						
aag	gag	ctc	atc	gaa	aag	ggc	cat	ggc	att	cgc	ttg	ctg	gag	gca			7344
Lys	Glu	Leu	Ile	Glu	Lys	Gly	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala			
	2435					2440					2445						
cag	atc	gca	acc	ggc	ggc	atc	atc	gac	ccg	aag	gag	agc	cat	cgg			7389
Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg			
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ctt Leu	agc Ser 2480	gaa Glu	atc Ile	ctc Leu	tca Ser	gac Asp 2485	cca Pro	agt Ser	gat Asp	gat Asp	acc Thr 2490	aaa Lys	ggc Gly	ttt Phe	7479
ttc Phe	gat Asp 2495	cca Pro	aac Asn	aca Thr	gaa Glu	gaa Glu 2500	aac Asn	ctc Leu	acc Thr	tat Tyr	ctg Leu 2505	caa Gln	ctg Leu	aag Lys	7524
gag Glu	aga Arg 2510	tgc Cys	atc Ile	aaa Lys	gat Asp	gag Glu 2515	gaa Glu	aca Thr	ggg Gly	ctc Leu	tgc Cys 2520	ctg Leu	ctg Leu	ccc Pro	7569
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ctc Leu	aga Arg 2540	aag Lys	cgg Arg	cgg Arg	gtg Val	gtc Val 2545	ata Ile	gtt Val	gac Asp	ccg Pro	gaa Glu 2550	acc Thr	aat Asn	aag Lys	7659
gag Glu	atg Met 2555	tct Ser	gtt Val	cag Gln	gag Glu	gcc Ala 2560	tac Tyr	aag Lys	aaa Lys	ggg Gly	ctc Leu 2565	att Ile	gat Asp	tat Tyr	7704
gac Asp	acc Thr 2570	ttc Phe	aag Lys	gag Glu	cta Leu	tgt Cys 2575	gaa Glu	caa Gln	gag Glu	tgc Cys	gaa Glu 2580	tgg Trp	gaa Glu	gaa Glu	7749
ata Ile	acc Thr 2585	atc Ile	aca Thr	gga Gly	tca Ser	gac Asp 2590	ggc Gly	tcc Ser	acc Thr	agg Arg	gtg Val 2595	gtc Val	tta Leu	gtg Val	7794
gac Asp	agg Arg 2600	aag Lys	acc Thr	ggc Gly	agt Ser	cag Gln 2605	tat Tyr	gac Asp	att Ile	caa Gln	gat Asp 2610	gct Ala	att Ile	gac Asp	7839
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agc Ser	ctt Leu 2630	agc Ser	ctc Leu	aca Thr	cag Gln	ttt Phe 2635	gct Ala	gac Asp	atg Met	atc Ile	tcc Ser 2640	ttg Leu	aaa Lys	aac Asn	7929
ggc Gly	gtc Val 2645	ggc Gly	aac Asn	agc Ser	agc Ser	ggc Gly 2650	ttg Leu	ggg Gly	ggg Gly	agt Ser	gtc Val 2655	aac Asn	gat Asp	gat Asp	7974
gtt Val	ttt Phe 2660	agc Ser	agc Ser	tcc Ser	cga Arg	cac His 2665	gac Asp	tcc Ser	gtg Val	agt Ser	aag Lys 2670	att Ile	tcc Ser	acc Thr	8019
ata Ile	tcc Ser 2675	agt Ser	gtc Val	aga Arg	aat Asn	cta Leu 2680	acc Thr	atc Ile	cga Arg	agc Ser	agc Ser 2685	tct Ser	ctg Leu	tca Ser	8064
gac Asp	cct Pro 2690	ctg Leu	gag Glu	gag Glu	tca Ser	agc Ser 2695	ccc Pro	att Ile	gcg Ala	gcc Ala	atc Ile 2700	ttt Phe	gac Asp	aca Thr	8109
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att Ile	gtg Val 2720	gat Asp	agc Ser	atc Ile	acc Thr	ggg Gly 2725	cag Gln	agg Arg	ctt Leu	ctg Leu	gag Glu 2730	gct Ala	cag Gln	gcc Ala	8199
tgc Cys	act Thr 2735	ggg Gly	ggc Gly	atc Ile	att Ile	cac His 2740	cct Pro	acc Thr	act Thr	ggg Gly	cag Gln 2745	aag Lys	ctc Leu	tcc Ser	8244
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35 40 45

Gly Leu Gly Ala Ala Glu Glu Pro Thr Ala Gln Arg Ala Gly Ser Ser  
50 55 60

Ser Arg Asp Ser Arg Val Asn Thr Ala Arg Glu Ser Leu Val Gly Gly  
65 70 75 80

Arg Ser Gln Thr Gly Thr Met Ser Arg His Gln Asn Gln Asn Thr Ile  
85 90 95

Gln Glu Met Leu Gln Asn Cys Ser Asp Cys Leu Met Arg Ala Glu Leu  
100 105 110

Ile Ala Gln Pro Glu Leu Lys Phe Gly Glu Gly Met Gln Leu Ala Trp  
115 120 125

Asn Arg Glu Leu Asp Glu Tyr Phe Thr Gln Ala Asn Asp Gln Met Glu  
130 135 140

Ile Ile Asp Gly Leu Ile Arg Glu Met Arg Gln Met Gly Gln Pro Cys  
145 150 155 160

Asp Ala Tyr Gln Lys Arg Gln Gln Gln Gln Gln Arg Pro Leu Val Glu  
165 170 175

Leu Leu Pro Phe Gln Glu Ala Asn Val Lys Leu Tyr Leu Ile Lys Leu  
180 185 190

Leu Gln Leu Gln Glu Gln Met Arg Ala Leu Tyr Lys Ala Ile Ser Val  
195 200 205

Pro Arg Val Arg Arg Ala Ser Ser Lys Gly Ala Gly Gly Tyr Thr Cys  
210 215 220

Gln Ser Gly Ser Gly Trp Asp Glu Phe Thr Lys Arg Leu Thr Gly Glu  
225 230 235 240

Cys Leu Gly Trp Met Arg Gln Gln Arg Glu Glu Met Asp Leu Met Ala  
245 250 255

Trp Gly Val Asp Ala Gly Ser Val Glu Gln His Ile Asn Ser His Arg  
260 265 270

Ser Ile His Asn Thr Ile Gly Asp Tyr Arg Trp Gln Leu Asp Lys Ile  
           275                          280                          285  
 Lys Ala Asp Leu Cys Leu Leu Ser Ser Leu Leu His Gly Ser Lys Ile  
       290                          295                          300  
 Gln Arg Ile Arg Asn Arg Ile Ser Phe Ser Lys Val Leu Ser Asp Arg  
 305                          310                          315                          320  
 Arg Glu Lys Ser Ala Ile Tyr Gln Leu Glu Glu Glu Tyr Glu Asn Leu  
                           325                          330                          335  
 Leu Lys Ala Ser Phe Glu Arg Met Asp His Leu Arg Gln Leu Gln Asn  
                           340                          345                          350  
 Ile Ile Gln Ala Thr Ser Arg Glu Ile Met Trp Ile Asn Asp Cys Glu  
           355                          360                          365  
 Glu Glu Glu Leu Leu Tyr Asp Trp Ser Asp Lys Asn Thr Asn Ile Ala  
       370                          375                          380  
 Gln Lys Gln Glu Ala Phe Ser Ile Arg Met Ser Gln Leu Glu Val Lys  
 385                          390                          395                          400  
 Glu Lys Glu Leu Asn Lys Leu Lys Gln Glu Ser Asp Gln Leu Val Leu  
                           405                          410                          415  
 Asn Gln His Pro Ala Ser Asp Lys Ile Glu Ala Tyr Met Asp Thr Leu  
                           420                          425                          430  
 Gln Thr Gln Trp Ser Trp Ile Leu Gln Ile Thr Lys Cys Ile Asp Val  
       435                          440                          445  
 His Leu Lys Glu Asn Ala Ala Tyr Phe Gln Phe Phe Glu Glu Ala Gln  
       450                          455                          460  
 Ser Thr Glu Ala Tyr Leu Lys Gly Leu Gln Asp Ser Ile Arg Lys Lys  
 465                          470                          475                          480  
 Tyr Pro Cys Asp Lys Asn Met Pro Leu Gln His Leu Leu Glu Gln Ile  
                           485                          490                          495  
 Lys Glu Leu Glu Lys Glu Arg Glu Lys Ile Ile Glu Tyr Lys Arg Gln  
                           500                          505                          510  
 Val Gln Asn Leu Val Asn Lys Ser Lys Lys Ile Val Gln Leu Lys Pro  
       515                          520                          525  
 Arg Asn Pro Asp Tyr Arg Ser Asn Lys Pro Ile Ile Leu Arg Ala Leu  
       530                          535                          540

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Cys Asp Tyr Lys Gln Asp Gln Lys Ile Val His Lys Gly Asp Glu Cys  
 545 550 555 560  
 Ile Leu Lys Asp Asn Asn Glu Arg Ser Lys Trp Tyr Val Thr Gly Pro  
 565 570 575  
 Gly Gly Val Asp Met Leu Val Pro Ser Val Gly Leu Ile Ile Pro Pro  
 580 585 590  
 Pro Asn Pro Leu Ala Val Asp Leu Ser Cys Lys Ile Glu Gln Tyr Tyr  
 595 600 605  
 Glu Ala Ile Leu Ala Leu Trp Asn Gln Leu Tyr Ile Asn Met Lys Ser  
 610 615 620  
 Leu Val Ser Trp His Tyr Cys Met Ile Asp Ile Glu Lys Ile Arg Ala  
 625 630 635 640  
 Met Thr Ile Ala Lys Leu Lys Thr Met Arg Gln Glu Asp Tyr Met Lys  
 645 650 655  
 Thr Ile Glu Asp Leu Glu Leu His Tyr Gln Asp Phe Ile Lys Asn Ser  
 660 665 670  
 Gln Gly Ser Glu Met Phe Gly Asp Asp Asp Lys Arg Arg Met Gln Ser  
 675 680 685  
 Gln Phe Thr Asp Ala Gln Lys His Tyr Gln Thr Leu Val Ile Gln Leu  
 690 695 700  
 Pro Gly His Pro Gln His Gln Thr Val Thr Lys Thr Glu Ile Thr His  
 705 710 715 720  
 Leu Gly Thr Cys Gln Asp Val Asn His Asn Lys Val Ile Glu Thr Asn  
 725 730 735  
 Arg Glu Asn Asp Lys Gln Glu Thr Trp Leu Leu Met Glu Leu Gln Lys  
 740 745 750  
 Ile Arg Arg Gln Met Glu His Cys Glu Ala Arg Met Thr Leu Lys Asn  
 755 760 765  
 Leu Leu Leu Ala Glu Gln Gly Ser Thr His His Ile Thr Val Lys Ile  
 770 775 780  
 Asn Glu Leu Lys Ser Val Gln Asn Asp Ser Gln Ala Leu Ala Glu Val  
 785 790 795 800  
 Leu Asn Gln Leu Lys Asp Met Leu Ala Asn Phe Arg Gly Ser Glu Lys  
 805 810 815

Tyr Cys Tyr Leu Gln Asn Glu Ile Phe Gly Leu Phe Gln Lys Leu Glu  
 820 825 830  
 Asn Ile Asn Gly Val Ser Asp Gly Tyr Leu Asn Ser Leu Cys Ser Val  
 835 840 845  
 Arg Ala Leu Leu Gln Ala Ile Leu Gln Thr Glu Asp Met Leu Lys Val  
 850 855 860  
 Tyr Glu Ala Arg Leu Thr Glu Glu Glu Thr Val Cys Leu Asp Leu Asp  
 865 870 875 880  
 Lys Val Glu Ala Tyr Arg Cys Gly Leu Lys Lys Ile Lys Asn Asp Leu  
 885 890 895  
 Asn Leu Lys Lys Ser Leu Leu Ala Thr Met Lys Thr Glu Leu Gln Lys  
 900 905 910  
 Ala Gln Gln Ile His Ser Gln Ser Ser Gln Gln Tyr Pro Leu Tyr Asp  
 915 920 925  
 Leu Asp Leu Gly Lys Phe Thr Glu Lys Val Thr Gln Leu Thr Asp Arg  
 930 935 940  
 Trp Gln Lys Ile Asp Lys Gln Ile Asp Phe Arg Leu Trp Asp Leu Glu  
 945 950 955 960  
 Lys Gln Ile Lys Gln Leu Arg Asn Tyr Arg Asp Asn Tyr Gln Ser Phe  
 965 970 975  
 Cys Lys Trp Leu Tyr Asp Ala Lys Arg Arg Gln Asp Ser Leu Glu Ser  
 980 985 990  
 Met Lys Phe Gly Asp Ser Asn Thr Val Met Arg Phe Leu Asn Glu Gln  
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 Lys Asn Leu His Ser Glu Ile Ser Gly Lys Arg Asp Lys Ser Glu  
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 Glu Val His Lys Ile Ala Glu Leu Cys Ala Asn Ser Ile Lys Asp  
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 Tyr Glu Leu Gln Leu Ala Ser Tyr Thr Ser Gly Leu Glu Thr Leu  
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 Leu Asn Ile Pro Ile Lys Arg Thr Met Val Gln Ser Pro Ser Gly  
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 Val Ile Leu Gln Glu Ala Ala Asp Ile His Ala Arg Tyr Ile Glu  
 1070 1075 1080  
 Leu Leu Thr Arg Ser Gly Asp Tyr Tyr Arg Phe Leu Ser Glu Met  
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1085

1090

1095

Leu Lys Ser Leu Glu Asp Leu Lys Leu Lys Asn Thr Lys Ile Glu  
 1100 1105 1110

Val Leu Glu Glu Glu Leu Arg Leu Ala Arg Asp Ala Asn Ser Glu  
 1115 1120 1125

Asn Cys Asn Lys Asn Lys Phe Leu Asp Gln Asn Leu Gln Lys Tyr  
 1130 1135 1140

Gln Ala Glu Cys Ser Gln Phe Lys Ala Lys Leu Val Ser Leu Glu  
 1145 1150 1155

Glu Leu Lys Arg Gln Ala Glu Leu Asp Gly Lys Ser Ala Lys Gln  
 1160 1165 1170

Asn Leu Asp Lys Cys Tyr Gly Gln Ile Lys Glu Leu Asn Glu Lys  
 1175 1180 1185

Ile Thr Arg Leu Thr Tyr Glu Ile Glu Asp Glu Lys Arg Arg Arg  
 1190 1195 1200

Lys Thr Val Glu Asp Arg Phe Asp Gln Gln Lys Asn Asp Tyr Asp  
 1205 1210 1215

Gln Leu Gln Lys Ala Arg Gln Cys Glu Lys Glu Asn Leu Ser Trp  
 1220 1225 1230

Gln Lys Leu Glu Ser Glu Lys Ala Ile Lys Glu Lys Glu Tyr Glu  
 1235 1240 1245

Ile Glu Arg Leu Arg Val Leu Leu Gln Glu Glu Gly Ala Arg Lys  
 1250 1255 1260

Arg Glu Tyr Glu Asn Glu Leu Ala Lys Val Arg Asn His Tyr Asn  
 1265 1270 1275

Glu Glu Met Ser Asn Leu Arg Asn Lys Tyr Glu Thr Glu Ile Asn  
 1280 1285 1290

Ile Thr Lys Thr Thr Ile Lys Glu Ile Ser Met Gln Lys Glu Asp  
 1295 1300 1305

Asp Ser Lys Asn Leu Arg Asn Gln Met Asp Arg Leu Ser Arg Glu  
 1310 1315 1320

Asn Arg Asp Leu Lys Asp Glu Ile Val Arg Leu Asn Asp Ser Ile  
 1325 1330 1335

Leu Gln Ala Thr Glu Gln Arg Arg Arg Ala Glu Glu Asn Ala Leu  
 1340 1345 1350

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Gln	Gln	Lys	Ala	Cys	Gly	Ser	Glu	Thr	Met	Gln	Lys	Lys	Gln	Arg
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Leu	Glu	Ile	Glu	Leu	Lys	Gln	Val	Ile	Gln	Gln	Arg	Ser	Glu	Asp
	1370					1375					1380			
Asn	Ala	Arg	His	Lys	Gln	Ser	Leu	Glu	Glu	Ala	Ala	Lys	Thr	Ile
	1385					1390					1395			
Gln	Asp	Lys	Asn	Lys	Glu	Ile	Glu	Arg	Leu	Lys	Ala	Glu	Tyr	Gln
	1400					1405					1410			
Glu	Glu	Ala	Lys	Arg	Arg	Trp	Glu	Tyr	Glu	Asn	Glu	Leu	Ser	Lys
	1415					1420					1425			
Val	Arg	Asn	Ser	Tyr	Asp	Glu	Glu	Ile	Ile	Ser	Leu	Lys	Asn	Gln
	1430					1435					1440			
Phe	Glu	Thr	Glu	Ile	Asn	Ile	Thr	Lys	Thr	Thr	Ile	His	Gln	Leu
	1445					1450					1455			
Thr	Met	Gln	Lys	Glu	Glu	Asp	Thr	Ser	Gly	Tyr	Arg	Ala	Gln	Ile
	1460					1465					1470			
Asp	Asn	Leu	Thr	Arg	Glu	Asn	Arg	Ser	Leu	Cys	Glu	Glu	Val	Lys
	1475					1480					1485			
Arg	Leu	Lys	Asn	Thr	Leu	Ala	Gln	Thr	Thr	Glu	Asn	Leu	Arg	Arg
	1490					1495					1500			
Val	Glu	Glu	Asn	Ala	Gln	Gln	Gln	Lys	Ala	Thr	Gly	Ser	Glu	Met
	1505					1510					1515			
Ser	Gln	Arg	Lys	Gln	Gln	Leu	Glu	Ile	Glu	Leu	Arg	Gln	Val	Thr
	1520					1525					1530			
Gln	Met	Arg	Thr	Glu	Glu	Ser	Met	Arg	Tyr	Lys	Gln	Ser	Leu	Asp
	1535					1540					1545			
Asp	Ala	Ala	Lys	Thr	Ile	Gln	Asp	Lys	Asn	Lys	Glu	Ile	Glu	Arg
	1550					1555					1560			
Leu	Lys	Gln	Leu	Val	Asp	Lys	Glu	Thr	Asn	Glu	Arg	Lys	Cys	Leu
	1565					1570					1575			
Glu	Asp	Glu	Asn	Ser	Lys	Leu	Gln	Arg	Val	Gln	Tyr	Asp	Leu	Gln
	1580					1585					1590			
Lys	Ala	Asn	Asn	Ser	Ala	Thr	Glu	Ala	Met	Ser	Lys	Leu	Lys	Val
	1595					1600					1605			



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Gln Glu Gln Glu Leu Thr Arg Leu Arg Ile Asp Tyr Glu Arg Val  
1610 1615 1620

Ser Gln Glu Arg Thr Val Lys Asp Gln Asp Ile Thr Arg Ile Gln  
1625 1630 1635

Ser Ser Leu Lys Asp Leu Gln Leu Gln Lys Gln Lys Ala Glu Glu  
1640 1645 1650

Glu Leu Ser Arg Leu Lys Arg Thr Ala Ser Asp Glu Ser Ser Lys  
1655 1660 1665

Arg Lys Met Leu Glu Glu Glu Leu Glu Ala Met Arg Arg Ser Leu  
1670 1675 1680

Lys Glu Gln Ala Val Lys Ile Thr Asn Leu Thr Gln Gln Leu Glu  
1685 1690 1695

Gln Ala Ser Ile Val Lys Lys Arg Ser Glu Asp Asp Leu Arg Gln  
1700 1705 1710

Gln Arg Asp Val Leu Asp Gly His Val Arg Glu Lys Gln Arg Thr  
1715 1720 1725

Gln Glu Glu Leu Arg Arg Leu Ser Leu Asp Val Glu Ala Leu Arg  
1730 1735 1740

Arg Gln Leu Val Gln Glu Gln Glu Asn Val Lys Gln Ala His Leu  
1745 1750 1755

Arg Asn Glu His Phe Gln Lys Ala Ile Glu Asp Lys Ser Arg Ser  
1760 1765 1770

Leu Asn Glu Ser Lys Ile Glu Ile Glu Arg Leu Gln Ser Leu Thr  
1775 1780 1785

Glu Asn Leu Thr Lys Glu His Leu Met Leu Glu Glu Glu Leu Arg  
1790 1795 1800

Asn Leu Arg Leu Glu Tyr Asp Asp Leu Arg Arg Gly Arg Ser Glu  
1805 1810 1815

Ala Asp Ser Asp Lys Asn Ser Thr Ile Ser Glu Leu Arg Ser Gln  
1820 1825 1830

Leu Gln Ile Ser Asn Asn Arg Thr Leu Glu Leu Gln Gly Leu Ile  
1835 1840 1845

Asn Asp Leu Gln Arg Glu Arg Glu Asn Leu Arg Gln Glu Ile Glu  
1850 1855 1860

Lys	Phe	Gln	Lys	Gln	Ala	Leu	Glu	Ala	Ser	Asn	Arg	Ile	Gln	Glu
	1865					1870					1875			
Ser	Lys	Ser	Gln	Cys	Thr	Gln	Val	Val	Gln	Glu	Arg	Glu	Ser	Leu
	1880					1885					1890			
Leu	Val	Lys	Ile	Lys	Val	Leu	Glu	Gln	Asp	Lys	Ala	Arg	Leu	Gln
	1895					1900					1905			
Arg	Leu	Glu	Asp	Glu	Leu	Asn	Arg	Ala	Lys	Ala	Thr	Leu	Glu	Ala
	1910					1915					1920			
Glu	Ser	Arg	Val	Lys	Gln	Arg	Leu	Glu	Cys	Glu	Lys	Gln	Gln	Ile
	1925					1930					1935			
Gln	Asn	Asp	Leu	Asn	Gln	Trp	Lys	Thr	Gln	Tyr	Ser	Arg	Lys	Glu
	1940					1945					1950			
Glu	Thr	Ile	Arg	Lys	Ile	Glu	Ser	Glu	Arg	Glu	Lys	Ser	Glu	Arg
	1955					1960					1965			
Glu	Lys	Asn	Ser	Leu	Arg	Ser	Glu	Ile	Glu	Arg	Leu	Gln	Ala	Glu
	1970					1975					1980			
Ile	Lys	Arg	Ile	Glu	Glu	Arg	Cys	Arg	Arg	Lys	Leu	Glu	Asp	Ser
	1985					1990					1995			
Ser	Arg	Glu	Thr	Gln	Ser	Gln	Leu	Glu	Ser	Glu	Arg	Cys	Arg	Leu
	2000					2005					2010			
Gln	Lys	Glu	Ile	Glu	Lys	Leu	Arg	Gln	Arg	Pro	Tyr	Gly	Ser	His
	2015					2020					2025			
Arg	Glu	Thr	Gln	Thr	Glu	Tyr	Glu	Trp	Thr	Val	Asp	Ser	Ser	Lys
	2030					2035					2040			
Leu	Val	Phe	Asp	Gly	Leu	Arg	Lys	Lys	Val	Thr	Ala	Met	Gln	Leu
	2045					2050					2055			
Tyr	Glu	Cys	Gln	Leu	Ile	Asp	Lys	Thr	Thr	Leu	Asp	Lys	Leu	Leu
	2060					2065					2070			
Lys	Gly	Lys	Lys	Ser	Val	Glu	Glu	Val	Ala	Ser	Glu	Ile	Gln	Pro
	2075					2080					2085			
Phe	Leu	Arg	Gly	Ala	Gly	Ala	Ile	Ala	Gly	Ala	Ser	Ala	Ser	Pro
	2090					2095					2100			
Lys	Glu	Lys	Tyr	Ser	Leu	Val	Glu	Ala	Lys	Arg	Lys	Lys	Phe	Ile
	2105					2110					2115			
Thr	Pro	Glu	Ser	Thr	Val	Met	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr

2120						2125						2130			
Gly	Gly	Ile	Ile	Asp	Pro	His	Arg	Asn	Glu	Lys	Leu	Thr	Val	Asp	
	2135					2140					2145				
Asn	Ala	Val	Ala	Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Gln	Gln	
	2150					2155					2160				
Ile	Tyr	Thr	Ala	Glu	Lys	Ala	Ile	Thr	Gly	Phe	Asp	Asp	Pro	Phe	
	2165					2170					2175				
Ser	Gly	Lys	Thr	Val	Ser	Val	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu	
	2180					2185					2190				
Ile	Asp	Arg	Glu	Thr	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Leu	Ala	
	2195					2200					2205				
Ser	Gly	Gly	Val	Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys	
	2210					2215					2220				
Asp	Val	Ala	Leu	Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg	
	2225					2230					2235				
Ser	Leu	Asn	Asp	Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro	
	2240					2245					2250				
Ile	Thr	Lys	Lys	Lys	Val	Ser	Tyr	Met	Gln	Leu	Arg	Glu	Arg	Cys	
	2255					2260					2265				
Arg	Ile	Glu	Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys	
	2270					2275					2280				
Arg	Ser	Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr	
	2285					2290					2295				
Glu	Leu	Val	Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	
	2300					2305					2310				
Leu	Glu	Ser	Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	
	2315					2320					2325				
Lys	Asp	Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	
	2330					2335					2340				
Glu	Thr	Thr	Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	
	2345					2350					2355				
Gly	Leu	Val	Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	
	2360					2365					2370				
Ala	Ala	Thr	Gly	Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu	
	2375					2380					2385				

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Pro	Val	Glu	Glu	Ala	Tyr	Lys	Arg	Gly	Leu	Val	Gly	Ile	Glu	Phe
	2390					2395					2400			
Lys	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Asn
	2405					2410					2415			
Asp	Pro	Glu	Thr	Gly	Asn	Ile	Ile	Ser	Leu	Phe	Gln	Ala	Met	Asn
	2420					2425					2430			
Lys	Glu	Leu	Ile	Glu	Lys	Gly	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala
	2435					2440					2445			
Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg
	2450					2455					2460			
Leu	Pro	Val	Asp	Met	Ala	Tyr	Lys	Arg	Gly	Tyr	Phe	Asn	Glu	Glu
	2465					2470					2475			
Leu	Ser	Glu	Ile	Leu	Ser	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe
	2480					2485					2490			
Phe	Asp	Pro	Asn	Thr	Glu	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Lys
	2495					2500					2505			
Glu	Arg	Cys	Ile	Lys	Asp	Glu	Glu	Thr	Gly	Leu	Cys	Leu	Leu	Pro
	2510					2515					2520			
Leu	Lys	Glu	Lys	Lys	Lys	Gln	Val	Gln	Thr	Ser	Gln	Lys	Asn	Thr
	2525					2530					2535			
Leu	Arg	Lys	Arg	Arg	Val	Val	Ile	Val	Asp	Pro	Glu	Thr	Asn	Lys
	2540					2545					2550			
Glu	Met	Ser	Val	Gln	Glu	Ala	Tyr	Lys	Lys	Gly	Leu	Ile	Asp	Tyr
	2555					2560					2565			
Asp	Thr	Phe	Lys	Glu	Leu	Cys	Glu	Gln	Glu	Cys	Glu	Trp	Glu	Glu
	2570					2575					2580			
Ile	Thr	Ile	Thr	Gly	Ser	Asp	Gly	Ser	Thr	Arg	Val	Val	Leu	Val
	2585					2590					2595			
Asp	Arg	Lys	Thr	Gly	Ser	Gln	Tyr	Asp	Ile	Gln	Asp	Ala	Ile	Asp
	2600					2605					2610			
Lys	Gly	Leu	Val	Asp	Arg	Lys	Phe	Phe	Asp	Gln	Tyr	Arg	Ser	Gly
	2615					2620					2625			
Ser	Leu	Ser	Leu	Thr	Gln	Phe	Ala	Asp	Met	Ile	Ser	Leu	Lys	Asn
	2630					2635					2640			

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Gly	Val	Gly	Asn	Ser	Ser	Gly	Leu	Gly	Gly	Ser	Val	Asn	Asp	Asp
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Val	Phe	Ser	Ser	Ser	Arg	His	Asp	Ser	Val	Ser	Lys	Ile	Ser	Thr
	2660					2665					2670			
Ile	Ser	Ser	Val	Arg	Asn	Leu	Thr	Ile	Arg	Ser	Ser	Ser	Leu	Ser
	2675					2680					2685			
Asp	Pro	Leu	Glu	Glu	Ser	Ser	Pro	Ile	Ala	Ala	Ile	Phe	Asp	Thr
	2690					2695					2700			
Glu	Asn	Leu	Glu	Lys	Ile	Ser	Ile	Ala	Glu	Gly	Ile	Glu	Arg	Gly
	2705					2710					2715			
Ile	Val	Asp	Ser	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala
	2720					2725					2730			
Cys	Thr	Gly	Gly	Ile	Ile	His	Pro	Thr	Thr	Gly	Gln	Lys	Leu	Ser
	2735					2740					2745			
Leu	Gln	Asp	Ala	Val	Asn	Gln	Gly	Leu	Ile	Asp	Gln	Asp	Met	Ala
	2750					2755					2760			
Thr	Arg	Leu	Lys	Pro	Ala	Gln	Lys	Ala	Phe	Ile	Gly	Phe	Glu	Gly
	2765					2770					2775			
Val	Lys	Gly	Lys	Lys	Lys	Met	Ser	Ala	Ala	Glu	Ala	Val	Lys	Glu
	2780					2785					2790			
Lys	Trp	Leu	Pro	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Phe	Gln
	2795					2800					2805			
Phe	Leu	Thr	Gly	Gly	Leu	Val	Asp	Pro	Glu	Val	His	Gly	Arg	Ile
	2810					2815					2820			
Ser	Thr	Glu	Glu	Ala	Ile	Arg	Lys	Gly	Phe	Ile	Asp	Gly	Arg	Ala
	2825					2830					2835			
Ala	Gln	Arg	Leu	Gln	Asp	Ile	Ser	Ser	Tyr	Ala	Lys	Ile	Leu	Thr
	2840					2845					2850			
Cys	Pro	Lys	Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Met	Asn
	2855					2860					2865			
Arg	Ser	Met	Val	Glu	Asp	Ile	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala
	2870					2875					2880			
Ala	Ser	Val	Ser	Ser	Lys	Gly	Leu	Pro	Ser	Pro	Tyr	Asn	Met	Ser
	2885					2890					2895			

Ala Pro Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly  
2900 2905 2910

Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp  
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Ala Thr Gly Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser  
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Ser Ser Ile Gly Gly Tyr  
2945

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Met Thr Arg Ala Glu Met Tyr Tyr Ser Arg Arg Cys Thr Val Asn Asp	
20 25 30	
cag aac tcc gac ggc tac tgg tgg gta ccg gcc ggc cgc cac cta gct	144
Gln Asn Ser Asp Gly Tyr Trp Trp Val Pro Ala Gly Arg His Leu Ala	
35 40 45	
cag gct ggg acc ttt ggc cag gga gtt gcc cgt ctc ctg ggc cga cca	192
Gln Ala Gly Thr Phe Gly Gln Gly Val Ala Arg Leu Leu Gly Arg Pro	
50 55 60	
gga aac cca ggt cta ggc cga gga aag tgc att gcc ccg ggt cac gga	240
Gly Asn Pro Gly Leu Gly Arg Gly Lys Cys Ile Ala Pro Gly His Gly	
65 70 75 80	
agg cag gac ccg gta tcc cta cgc cca gcg ctc acc cct gtg aac agg	288
Arg Gln Asp Pro Val Ser Leu Arg Pro Ala Leu Thr Pro Val Asn Arg	
85 90 95	
gag cgt ggt caa acc ggc acc atg tcc agg cat cag aac cag aac act	336
Glu Arg Gly Gln Thr Gly Thr Met Ser Arg His Gln Asn Gln Asn Thr	
100 105 110	
atc caa gaa ctt ctg caa aac tgc gca gac tgt ctg atg cgg gca gag	384
Ile Gln Glu Leu Leu Gln Asn Cys Ala Asp Cys Leu Met Arg Ala Glu	
115 120 125	
ctg atc gca cag ccg gaa ctg aag ttc gga gaa gga atc cag ctg gcg	432
Leu Ile Ala Gln Pro Glu Leu Lys Phe Gly Glu Gly Ile Gln Leu Ala	
130 135 140	
tgg aac aga gaa ctg gat gag tat ttc act caa gcc aat gat cag atg	480
Trp Asn Arg Glu Leu Asp Glu Tyr Phe Thr Gln Ala Asn Asp Gln Met	
145 150 155 160	
gaa atc ata gat ggc ttg atc cgg gag atg agg cag atg ggc cag ccc	528
Glu Ile Ile Asp Gly Leu Ile Arg Glu Met Arg Gln Met Gly Gln Pro	

tgt Cys	gat Asp	gcg Ala	tat Tyr 180	cag Gln	aaa Lys	aga Arg	ctg Leu	ctt Leu 185	cag Gln	ctc Leu	cag Gln	gaa Glu 190	cag Gln	atg Met	cga Arg	576
gcc Ala	ctg Leu	tac Tyr 195	aag Lys	gcc Ala	atc Ile	agt Ser	gcc Ala 200	cct Pro	cga Arg	gtg Val	cga Arg	agg Arg 205	gcc Ala	agc Ser	tcc Ser	624
aag Lys	gga Gly 210	ggg Gly	tac Tyr	act Thr	tgt Cys	cag Gln 215	agt Ser	ggc Gly	tcc Ser	ggg Gly	tgg Trp 220	gat Asp	gaa Glu	ttc Phe	acc Thr	672
aaa Lys 225	cgc Arg	ctg Leu	acg Thr	ggc Gly	gag Glu 230	tgc Cys	ctg Leu	ggc Gly	tgg Trp	atg Met 235	agg Arg	cag Gln	cag Gln	agg Arg	gcg Ala 240	720
gaa Glu	atg Met	gac Asp	ctg Leu	atg Met 245	gcc Ala	tgg Trp	ggt Gly	gtg Val	gac Asp 250	tct Ser	ggt Gly	tca Ser	gtg Val	gag Glu 255	cag Gln	768
cac His	atc Ile	aac Asn	agc Ser 260	cac His	agg Arg	agt Ser	atc Ile	cac His 265	aat Asn	gcc Ala	atc Ile	gga Gly	gac Asp 270	tac Tyr	cgc Arg	816
tgg Trp	caa Gln	ctg Leu 275	gac Asp	aag Lys	atc Ile	aaa Lys	gca Ala 280	gac Asp	ctg Leu	cgt Arg	gag Glu	aag Lys 285	tcc Ser	gca Ala	atc Ile	864
tat Tyr 290	caa Gln	tgg Leu	gag Glu	gag Glu	gaa Glu	tat Tyr 295	gaa Glu	aac Asn	ctg Leu	ctg Leu	aaa Lys 300	gcc Ala	tcc Ser	ttc Phe	gag Glu	912
agg Arg 305	atg Met	gac Asp	cac His	ctg Leu	cgc Arg 310	cag Gln	ttg Leu	caa Gln	aac Asn	atc Ile 315	atc Ile	cag Gln	gcc Ala	acc Thr	tgc Ser 320	960
aga Arg	gag Glu	atc Ile	atg Met	tgg Trp 325	atc Ile	aat Asn	gac Asp	tgt Cys	gag Glu 330	gag Glu	gag Glu	gag Glu	ctg Leu	ctg Leu 335	tat Tyr	1008
gac Asp	tgg Trp	agc Ser	gac Asp 340	aag Lys	aac Asn	aca Thr	aac Asn	atc Ile 345	gct Ala	cag Gln	aag Lys	cag Gln	gag Glu 350	gcc Ala	ttc Phe	1056
tct Ser	atc Ile	cgc Arg 355	atg Met	agt Ser	caa Gln	ctg Leu	gaa Glu 360	gtc Val	aag Lys	gaa Glu	aag Lys	gag Glu 365	ctc Leu	aac Asn	aag Lys	1104
ctt Leu	aaa Lys 370	caa Gln	gaa Glu	agt Ser	gac Asp	caa Gln 375	ctt Leu	gtc Val	ctc Leu	aat Asn	cag Gln 380	cat His	cca Pro	gcg Ala	tca Ser	1152
gac Asp 385	aaa Lys	atc Ile	gag Glu	gca Ala	tat Tyr 390	atg Met	gat Asp	act Thr	ctt Leu	cag Gln 395	aca Thr	cag Gln	tgg Trp	agt Ser	tgg Trp 400	1200
att Ile	ctg Leu	caa Gln	atc Ile	acc Thr 405	aag Lys	tgc Cys	atc Ile	gat Asp	gtc Val 410	cac His	ctc Leu	aaa Lys	gaa Glu	aat Asn 415	gct Ala	1248
gcc Ala	tac Tyr	ttt Phe	cag Gln 420	ttt Phe	ttt Phe	gaa Glu	gag Glu	gcc Ala 425	cag Gln	tca Ser	act Thr	gaa Glu	gcc Ala 430	tac Tyr	ctg Leu	1296
aag Lys	gga Gly 435	ctg Leu	cag Gln	gac Asp	tcc Ser	atc Ile	agg Arg 440	aag Lys	aaa Lys	tac Tyr	ccc Pro	tgt Cys 445	gac Asp	aag Lys	aac Asn	1344

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atg	ccc	ctc	cag	cac	ctg	ctg	gag	cag	atc	aaa	gag	ctg	gag	aaa	gaa	1392
Met	Pro	Leu	Gln	His	Leu	Leu	Glu	Gln	Ile	Lys	Glu	Leu	Glu	Lys	Glu	
	450					455					460					
cgg	gag	aag	atc	ctg	gaa	tac	aag	cgt	cag	gtg	cag	aac	ttg	gtg	aac	1440
Arg	Glu	Lys	Ile	Leu	Glu	Tyr	Lys	Arg	Gln	Val	Gln	Asn	Leu	Val	Asn	
465					470					475					480	
aag	tcc	aag	aag	atc	gtg	cag	ctg	aag	cct	cgg	aac	cca	gac	tac	aga	1488
Lys	Ser	Lys	Lys	Ile	Val	Gln	Leu	Lys	Pro	Arg	Asn	Pro	Asp	Tyr	Arg	
				485					490					495		
agc	aac	aaa	ccc	att	att	ctc	agg	gcc	ctc	tgc	gac	tac	aaa	caa	gac	1536
Ser	Asn	Lys	Pro	Ile	Ile	Leu	Arg	Ala	Leu	Cys	Asp	Tyr	Lys	Gln	Asp	
			500					505					510			
cag	aaa	atc	gtc	cac	aag	ggg	gat	gaa	tgc	atc	ctc	aag	gac	aac	aat	1584
Gln	Lys	Ile	Val	His	Lys	Gly	Asp	Glu	Cys	Ile	Leu	Lys	Asp	Asn	Asn	
		515					520					525				
gag	cgc	agc	aag	tgg	tac	gtg	acc	ggc	ccc	gga	ggc	gtt	gac	atg	ctt	1632
Glu	Arg	Ser	Lys	Trp	Tyr	Val	Thr	Gly	Pro	Gly	Gly	Val	Asp	Met	Leu	
	530					535					540					
gtc	cct	tct	gtg	ggc	ctg	atc	atc	cct	cct	cca	aac	cca	ctg	gct	gtg	1680
Val	Pro	Ser	Val	Gly	Leu	Ile	Ile	Pro	Pro	Pro	Asn	Pro	Leu	Ala	Val	
545					550					555					560	
gac	ctt	tct	tgc	aag	att	gag	cag	tac	tat	gaa	gcc	atc	ttg	gct	ctg	1728
Asp	Leu	Ser	Cys	Lys	Ile	Glu	Gln	Tyr	Tyr	Glu	Ala	Ile	Leu	Ala	Leu	
				565					570					575		
tgg	aac	cag	ctc	tac	atc	aac	atg	aag	agc	ctg	gtg	tct	tgg	cat	tac	1776
Trp	Asn	Gln	Leu	Tyr	Ile	Asn	Met	Lys	Ser	Leu	Val	Ser	Trp	His	Tyr	
			580					585					590			
tgt	atg	att	gac	atc	gag	aag	atc	aga	gcc	atg	act	att	gcc	aag	ctg	1824
Cys	Met	Ile	Asp	Ile	Glu	Lys	Ile	Arg	Ala	Met	Thr	Ile	Ala	Lys	Leu	
		595					600					605				
aaa	acc	atg	aga	cag	gaa	gat	tac	atg	aag	acc	att	gaa	gac	ctg	gag	1872
Lys	Thr	Met	Arg	Gln	Glu	Asp	Tyr	Met	Lys	Thr	Ile	Glu	Asp	Leu	Glu	
	610					615					620					
ctc	cat	tac	caa	gac	ttc	atc	aaa	aac	agc	caa	ggc	tcg	gag	atg	ttc	1920
Leu	His	Tyr	Gln	Asp	Phe	Ile	Lys	Asn	Ser	Gln	Gly	Ser	Glu	Met	Phe	
625					630					635					640	
gga	gac	gat	gac	aaa	cgg	agg	atg	cag	tct	cag	ttc	act	gat	gcc	cag	1968
Gly	Asp	Asp	Asp	Lys	Arg	Arg	Met	Gln	Ser	Gln	Phe	Thr	Asp	Ala	Gln	
				645					650					655		
aag	cat	tac	cag	acc	ctg	gtc	att	cag	ctt	cct	ggc	cac	ccc	cag	cac	2016
Lys	His	Tyr	Gln	Thr	Leu	Val	Ile	Gln	Leu	Pro	Gly	His	Pro	Gln	His	
			660					665					670			
cag	aca	gtc	acc	aaa	act	gaa	atc	act	cac	gtg	ggt	acc	tgc	cag	gat	2064
Gln	Thr	Val	Thr	Lys	Thr	Glu	Ile	Thr	His	Val	Gly	Thr	Cys	Gln	Asp	
		675					680					685				
gtc	aac	cac	aat	aaa	gta	att	gag	act	aac	aga	gag	aac	gac	aaa	cag	2112
Val	Asn	His	Asn	Lys	Val	Ile	Glu	Thr	Asn	Arg	Glu	Asn	Asp	Lys	Gln	
	690					695					700					
gag	acg	tgg	ctg	ctg	atg	gag	ctg	cag	aag	atc	cgc	agg	cag	atg	gag	2160
Glu	Thr	Trp	Leu	Leu	Met	Glu	Leu	Gln	Lys	Ile	Arg	Arg	Gln	Met	Glu	
705					710					715					720	



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cac His	tgc Cys	gag Glu	gcc Ala	aga Arg 725	atg Met	aca Thr	ctc Leu	aaa Lys	aat Asn 730	ctg Leu	ctg Leu	ctc Leu	aca Thr	gac Asp 735	cag Gln	2208
ggc Gly	tct Ser	aca Thr	cac His 740	aac Asn	atc Ile	acc Thr	gtg Val	aaa Lys 745	atc Ile	aac Asn	gag Glu	ctc Leu	aag Lys 750	agt Ser	gta Val	2256
cag Gln	aac Asn	gac Asp 755	tca Ser	caa Gln	gct Ala	ctg Leu	gcc Ala 760	gag Glu	gtt Val	ctc Leu	aat Asn	cag Gln 765	ctt Leu	aaa Lys	gac Asp	2304
atg Met	ctt Leu 770	gcc Ala	aac Asn	ttc Phe	cga Arg	ggg Gly 775	tct Ser	gaa Glu	aag Lys	tac Tyr	tgc Cys 780	tat Tyr	tta Leu	cag Gln	aat Asn	2352
gag Glu 785	ata Ile	ttt Phe	gga Gly	cta Leu	ttt Phe 790	cag Gln	aag Lys	ctg Leu	gaa Glu	aat Asn 795	atc Ile	aat Asn	ggt Gly	gtc Val	aca Thr 800	2400
gat Asp	ggc Gly	tac Tyr	tta Leu	aac Asn 805	agc Ser	ctg Leu	tgc Cys	tct Ser	gtg Val 810	aga Arg	gcc Ala	ctt Leu	ctc Leu	cag Gln 815	gca Ala	2448
att Ile	ctg Leu	caa Gln	acg Thr 820	gaa Glu	gac Asp	atg Met	ttg Leu	aag Lys 825	gtc Val	tac Tyr	gaa Glu	gcg Ala	agg Arg 830	ctg Leu	acg Thr	2496
gag Glu	gag Glu	gaa Glu 835	act Thr	gtc Val	tgt Cys	ctg Leu	gac Asp 840	ctg Leu	gat Asp	aaa Lys	gtg Val	gag Glu 845	gct Ala	tac Tyr	cgc Arg	2544
tgc Cys	ggg Gly 850	ctg Leu	aag Lys	aaa Lys	ata Ile	aaa Lys 855	aat Asn	gac Asp	ttg Leu	aac Asn	ttg Leu 860	aaa Lys	aag Lys	tca Ser	ctg Leu	2592
ttg Leu 865	gcc Ala	acc Thr	atg Met	aag Lys	acg Thr 870	gag Glu	ctg Leu	cag Gln	aag Lys	gca Ala 875	cag Gln	cag Gln	att Ile	cac His	tcc Ser 880	2640
cag Gln	tct Ser	tca Ser	cag Gln	cag Gln 885	tac Tyr	ccg Pro	ctc Leu	tat Tyr	gac Asp 890	ctg Leu	gac Asp	ctg Leu	ggc Gly	aaa Lys 895	ttc Phe	2688
act Thr	gag Glu	aaa Lys	gtg Val 900	aca Thr	cag Gln	ctg Leu	acg Thr	gat Asp 905	cgc Arg	tgg Trp	caa Gln	aag Lys	ata Ile 910	gat Asp	aag Lys	2736
cag Gln	ata Ile	gac Asp 915	ttt Phe	aga Arg	ttg Leu	tgg Trp	gac Asp 920	ctg Leu	gag Glu	aaa Lys	caa Gln	atc Ile 925	aaa Lys	caa Gln	ctg Leu	2784
agg Arg	aat Asn 930	tat Tyr	cgt Arg	gac Asp	aac Asn	tat Tyr 935	cag Gln	agc Ser	ttc Phe	tgc Cys	aag Lys 940	tgg Trp	ctg Leu	tat Tyr	gat Asp	2832
gcc Ala 945	aaa Lys	cgc Arg	cgc Arg	cag Gln	gac Asp 950	tct Ser	ttg Leu	gag Glu	tcc Ser	atg Met 955	aag Lys	ttc Phe	gga Gly	gat Asp	tcc Ser 960	2880
aac Asn	aca Thr	gtc Val	atg Met	cgg Arg 965	ttt Phe	ttg Leu	aat Asn	gag Glu	cag Gln 970	aag Lys	aac Asn	ctg Leu	cac His	aat Asn 975	gaa Glu	2928
ata Ile	tct Ser	ggc Gly	aaa Lys 980	cgg Arg	gat Asp	aaa Lys	tca Ser	gaa Glu 985	gaa Glu	gta Val	cat His	aaa Lys	att Ile 990	gct Ala	gag Glu	2976
ctt Tyr	tgc Cys	gca Ala	aac Asn	tca Leu	att Tyr	aag Lys	gat Asp	tat Tyr	gaa Glu	ctc Leu	cag Gln	ctg Leu	gcg Ala	tca Leu	tac Tyr	3024

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Leu	Cys	Ala	Asn	Ser	Ile	Lys	Asp	Tyr	Glu	Leu	Gln	Leu	Ala	Ser	Tyr	
		995					1000					1005				
acc	tca	ggg	ctg	gaa	act	cta	ctg	aac	ata	cct	att	aag	agg	acc		3069
Thr	Ser	Gly	Leu	Glu	Thr	Leu	Leu	Asn	Ile	Pro	Ile	Lys	Arg	Thr		
	1010					1015					1020					
atg	gtt	cag	tcc	cca	tct	ggg	gct	gcg	gac	atc	cat	gca	agg	tac		3114
Met	Val	Gln	Ser	Pro	Ser	Gly	Ala	Ala	Asp	Ile	His	Ala	Arg	Tyr		
	1025					1030					1035					
atc	gag	cta	ctt	aca	agg	tct	gga	gac	tac	tac	aga	ttc	tta	agt		3159
Ile	Glu	Leu	Leu	Thr	Arg	Ser	Gly	Asp	Tyr	Tyr	Arg	Phe	Leu	Ser		
	1040					1045					1050					
gag	atg	ctg	aag	agc	cta	gaa	gat	ctg	aag	ctg	aaa	aac	acc	aag		3204
Glu	Met	Leu	Lys	Ser	Leu	Glu	Asp	Leu	Lys	Leu	Lys	Asn	Thr	Lys		
	1055					1060					1065					
att	gaa	gtt	ttg	gaa	gag	gag	cta	aga	ctg	gcc	cgg	gat	gcc	aac		3249
Ile	Glu	Val	Leu	Glu	Glu	Glu	Leu	Arg	Leu	Ala	Arg	Asp	Ala	Asn		
	1070					1075					1080					
tcg	gaa	aat	tgc	aat	aag	aat	aag	ttc	cta	gat	cag	aac	ctg	cag		3294
Ser	Glu	Asn	Cys	Asn	Lys	Asn	Lys	Phe	Leu	Asp	Gln	Asn	Leu	Gln		
	1085					1090					1095					
aaa	tac	cag	gcc	gag	tgt	tcc	cag	ttc	aaa	gca	aag	ctt	gtg	agc		3339
Lys	Tyr	Gln	Ala	Glu	Cys	Ser	Gln	Phe	Lys	Ala	Lys	Leu	Val	Ser		
	1100					1105					1110					
ctg	gag	gag	ctg	aag	aga	caa	gct	gag	ctg	gat	ggg	aag	tca	gcc		3384
Leu	Glu	Glu	Leu	Lys	Arg	Gln	Ala	Glu	Leu	Asp	Gly	Lys	Ser	Ala		
	1115					1120					1125					
aag	caa	aac	cta	gac	aag	tgc	tac	ggt	cag	atc	aaa	gag	ctc	aat		3429
Lys	Gln	Asn	Leu	Asp	Lys	Cys	Tyr	Gly	Gln	Ile	Lys	Glu	Leu	Asn		
	1130					1135					1140					
gaa	aag	atc	acc	cgg	ctg	acc	tat	gag	atc	gaa	gac	gag	aag	cgc		3474
Glu	Lys	Ile	Thr	Arg	Leu	Thr	Tyr	Glu	Ile	Glu	Asp	Glu	Lys	Arg		
	1145					1150					1155					
agg	aga	aag	acc	gtg	gag	gac	agg	ttc	gac	caa	cag	aag	aat	gac		3519
Arg	Arg	Lys	Thr	Val	Glu	Asp	Arg	Phe	Asp	Gln	Gln	Lys	Asn	Asp		
	1160					1165					1170					
tat	gat	cag	ctg	cag	aag	gca	agg	cag	tgt	gaa	aag	gag	agc	ctt		3564
Tyr	Asp	Gln	Leu	Gln	Lys	Ala	Arg	Gln	Cys	Glu	Lys	Glu	Ser	Leu		
	1175					1180					1185					
ggc	tgg	cag	aag	ctg	gag	tct	gag	aaa	gcc	atc	aag	gag	aag	gag		3609
Gly	Trp	Gln	Lys	Leu	Glu	Ser	Glu	Lys	Ala	Ile	Lys	Glu	Lys	Glu		
	1190					1195					1200					
tac	gag	ata	gag	agg	ttg	agg	gtt	ctg	ctg	cag	gaa	gag	ggc	gcc		3654
Tyr	Glu	Ile	Glu	Arg	Leu	Arg	Val	Leu	Leu	Gln	Glu	Glu	Gly	Ala		
	1205					1210					1215					
cgg	aag	aga	gaa	tat	gaa	aat	gag	ctg	gca	aag	gca	tct	aat	agg		3699
Arg	Lys	Arg	Glu	Tyr	Glu	Asn	Glu	Leu	Ala	Lys	Ala	Ser	Asn	Arg		
	1220					1225					1230					
att	cag	gag	tca	aag	agt	cag	tgc	act	caa	gtc	gtt	cag	gag	aga		3744
Ile	Gln	Glu	Ser	Lys	Ser	Gln	Cys	Thr	Gln	Val	Val	Gln	Glu	Arg		
	1235					1240					1245					
gag	agc	ctg	ctg	gtg	aag	att	aag	gtc	ctg	gag	caa	gac	aag	gca		3789
Glu	Ser	Leu	Leu	Val	Lys	Ile	Lys	Val	Leu	Glu	Gln	Asp	Lys	Ala		

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1250	1255	1260		
agg ctg cag cgg ctg gag gac gag ctg aac cgt gcc aaa gca acg Arg Leu Gln Arg Leu Glu Asp Val Lys Glu Leu Asn Arg Ala Lys Ala Thr	1265	1270	1275	3834
ctg gag gca gaa acc cgg gtg aaa cag cgc cta gag tgt gag aag Leu Glu Ala Glu Thr Arg Val Lys Gln Arg Leu Glu Cys Glu Lys	1280	1285	1290	3879
cag cag atc cag aac gac ctg aac cag tgg aaa act caa tac tcc Gln Gln Ile Gln Asn Asp Leu Asn Gln Trp Lys Thr Gln Tyr Ser	1295	1300	1305	3924
cgc aag gag gag acc att agg aag ata gag tcg gaa aga gag aag Arg Lys Glu Glu Thr Ile Arg Lys Ile Glu Ser Glu Arg Glu Lys	1310	1315	1320	3969
agt gag aga gag aag aac agt ctt agg agt gag att gag aga ctc Ser Glu Arg Glu Lys Asn Ser Leu Arg Ser Glu Ile Glu Arg Leu	1325	1330	1335	4014
cag gca gag atc aag agg att gaa gag agg tgc agg cgg aag cta Gln Ala Glu Ile Lys Arg Ile Glu Glu Arg Cys Arg Lys Leu	1340	1345	1350	4059
gag gat tct acc agg gag act cag tcc cag ctg gaa acg gaa cgc Glu Asp Ser Thr Arg Glu Thr Gln Ser Gln Leu Glu Thr Glu Arg	1355	1360	1365	4104
tgc agg ctt cag aag gag att gac aaa ctc agg cag cgc ccc tat Cys Arg Leu Gln Lys Glu Ile Asp Lys Leu Arg Gln Arg Pro Tyr	1370	1375	1380	4149
ggg tcc cat cgg gag acc cag aca gag tac gag tgg acc gtt gat Gly Ser His Arg Glu Thr Gln Thr Glu Tyr Glu Trp Thr Val Asp	1385	1390	1395	4194
tcc tcc aag ctg gta ttt gac gga ctg agg aag aag gtg aca gca Ser Ser Lys Leu Val Phe Asp Gly Leu Arg Lys Lys Val Thr Ala	1400	1405	1410	4239
atg cag ctc tat gag tgc cag ttg att gac aag aca aca ctg gac Met Gln Leu Tyr Glu Cys Gln Leu Ile Asp Lys Thr Thr Leu Asp	1415	1420	1425	4284
aag cta ttg aag ggg aag aag tca gtg gag gag gtg gct tca gag Lys Leu Leu Lys Gly Lys Lys Ser Val Glu Glu Val Ala Ser Glu	1430	1435	1440	4329
atc cag cct ttc ctg cgg ggt gcg ggg gcc atc gct ggt gct tct Ile Gln Pro Phe Leu Arg Gly Ala Gly Ala Ile Ala Gly Ala Ser	1445	1450	1455	4374
gct tct ccc aag gaa aaa tac tct ttg gtg gag gcc aag aga aag Ala Ser Pro Lys Glu Lys Tyr Ser Leu Val Glu Ala Lys Arg Lys	1460	1465	1470	4419
aaa ttc atc acc cca gaa tcc aca gtc atg ctt ctg gag gcc cag Lys Phe Ile Thr Pro Glu Ser Thr Val Met Leu Leu Glu Ala Gln	1475	1480	1485	4464
gcg gcc act ggt ggt atc atc gat ccc cat cgg aat gag aag ctc Ala Ala Thr Gly Gly Ile Ile Asp Pro His Arg Asn Glu Lys Leu	1490	1495	1500	4509
acg gtg gac aat gcc ata gct cgg gac ctc att gag ttt gat gac Thr Val Asp Asn Ala Ile Ala Arg Asp Leu Ile Asp Phe Asp Asp	1505	1510	1515	4554

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cgc Arg	caa Gln 1520	cag Gln	atc Ile	tac Tyr	aca Thr	gcc Ala 1525	gag Glu	aaa Lys	gcc Ala	atc Ile	act Thr 1530	ggt Gly	ttt Phe	gat Asp	4599
gac Asp	ccg Pro 1535	ttt Phe	tca Ser	ggc Gly	aag Lys	acc Thr 1540	gta Val	tct Ser	gtt Val	tca Ser	gaa Glu 1545	gcc Ala	atc Ile	aag Lys	4644
aag Lys	aat Asn 1550	ttg Leu	att Ile	gac Asp	aga Arg	gaa Glu 1555	acc Thr	gga Gly	atg Met	cgc Arg	ctg Leu 1560	ctg Leu	gaa Glu	gcc Ala	4689
cag Gln 1565	ctt Leu	gct Ala	tca Ser	ggg Gly	ggt Gly	gta Val 1570	gtt Val	gat Asp	cca Pro	gtc Val	aac Asn 1575	agt Ser	gtc Val	ttt Phe	4734
ttg Leu 1580	cca Pro	aaa Lys	gat Asp	gta Val	gcc Ala	ttg Leu 1585	gcc Ala	cgt Arg	ggg Gly	ctg Leu	att Ile 1590	gat Asp	agg Arg	gat Asp	4779
ttg Leu 1595	tat Tyr	cgc Arg	tcc Ser	ttg Leu	aat Asn	gac Asp 1600	ccc Pro	cga Arg	gat Asp	agc Ser	cag Gln 1605	aag Lys	aac Asn	ttc Phe	4824
gtg Val 1610	gat Asp	cca Pro	atc Ile	acc Thr	aag Lys	aag Lys 1615	aag Lys	gtc Val	agc Ser	tac Tyr	atg Met 1620	cag Gln	ctg Leu	aga Arg	4869
gaa Glu 1625	cgg Arg	tgc Cys	aga Arg	atc Ile	gaa Glu	ccc Pro 1630	cac His	acg Thr	ggt Gly	ctg Leu	ctc Leu 1635	ctg Leu	ctg Leu	tca Ser	4914
gta Val 1640	cag Gln	aag Lys	aga Arg	agc Ser	atg Met	tcc Ser 1645	ttc Phe	caa Gln	gga Gly	atc Ile	aga Arg 1650	cag Gln	cca Pro	gtg Val	4959
acc Thr 1655	gtc Val	acc Thr	gaa Glu	ctg Leu	gtt Val	gat Asp 1660	tct Ser	ggc Gly	ata Ile	ttg Leu	aga Arg 1665	cca Pro	tcc Ser	acc Thr	5004
gta Val 1670	aat Asn	gaa Glu	ctg Leu	gaa Glu	tct Ser	ggt Gly 1675	cag Gln	att Ile	tct Ser	tat Tyr	gac Asp 1680	gag Glu	gtt Val	ggc Gly	5049
gag Glu 1685	aga Arg	att Ile	aag Lys	gac Asp	ttc Phe	ctc Leu 1690	cag Gln	ggg Gly	tca Ser	agc Ser	tgc Cys 1695	ata Ile	gca Ala	ggt Gly	5094
att Ile 1700	tat Tyr	aat Asn	gag Glu	acc Thr	acg Thr	aaa Lys 1705	cag Gln	aag Lys	ctt Leu	ggc Gly	atc Ile 1710	tac Tyr	gag Glu	gct Ala	5139
atg Met 1715	aaa Lys	att Ile	ggc Gly	tta Leu	gtt Val	cga Arg 1720	cct Pro	ggt Gly	acc Thr	gct Ala	ctg Leu 1725	gag Glu	ttg Leu	ctg Leu	5184
gaa Glu 1730	gcc Ala	caa Gln	gca Ala	gct Ala	act Thr	ggt Gly 1735	ttt Phe	ata Ile	gta Val	gat Asp	cct Pro 1740	gtc Val	agc Ser	aat Asn	5229
tta Leu 1745	agg Arg	tta Leu	cct Pro	gtg Val	gag Glu	gaa Glu 1750	gcc Ala	tac Tyr	aaa Lys	aga Arg	ggt Gly 1755	ctg Leu	gtg Val	ggc Gly	5274
att Ile 1760	gag Glu	ttc Phe	aaa Lys	gag Glu	aag Lys	ctt Leu 1765	ctc Leu	tct Ser	gca Ala	gaa Glu	cga Arg 1770	gct Ala	gtc Val	act Thr	5319

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gcg Ala	atg Met 1790	aac Asn	aag Lys	gaa Glu	ctc Leu	atc Ile 1795	gaa Glu	aag Lys	ggc Gly	cac His	gga Gly 1800	att Ile	cgc Arg	tta Leu	5409
ctg Leu	gag Glu 1805	gct Ala	cag Gln	atc Ile	gca Ala	acc Thr 1810	ggc Gly	ggt Gly	atc Ile	att Ile	gat Asp 1815	cca Pro	aag Lys	gag Glu	5454
agt Ser	cat His 1820	cgg Arg	tta Leu	ccg Pro	gtt Val	gac Asp 1825	atg Met	gct Ala	tat Tyr	aag Lys	agg Arg 1830	ggc Gly	tat Tyr	ttt Phe	5499
aac Asn	gag Glu 1835	gag Glu	ctt Leu	agc Ser	gaa Glu	atc Ile 1840	ctc Leu	tca Ser	gac Asp	cca Pro	agt Ser 1845	gat Asp	gat Asp	acc Thr	5544
aaa Lys	ggc Gly 1850	ttt Phe	ttc Phe	gat Asp	ccc Pro	aac Asn 1855	act Thr	gaa Glu	gaa Glu	aac Asn	ctc Leu 1860	acc Thr	tat Tyr	ttg Leu	5589
caa Gln	ctg Leu 1865	aaa Lys	gaa Glu	agg Arg	tgc Cys	atc Ile 1870	aaa Lys	gat Asp	gag Glu	gag Glu	acg Thr 1875	ggg Gly	ctc Leu	tgc Cys	5634
ctg Leu	ctg Leu 1880	cct Pro	ctg Leu	aaa Lys	gaa Glu	aag Lys 1885	aag Lys	aaa Lys	cag Gln	gtg Val	cag Gln 1890	act Thr	tca Ser	cag Gln	5679
aag Lys	aac Asn 1895	acc Thr	ctc Leu	aga Arg	aag Lys	cgg Arg 1900	cgg Arg	gtg Val	gta Val	ata Ile	gtt Val 1905	gac Asp	cca Pro	gaa Glu	5724
acc Thr	aac Asn 1910	aaa Lys	gag Glu	atg Met	tct Ser	gtt Val 1915	cag Gln	gag Glu	gcg Ala	tac Tyr	aag Lys 1920	aaa Lys	ggc Gly	ctt Leu	5769
att Ile	gat Asp 1925	tat Tyr	gaa Glu	acc Thr	ttc Phe	aaa Lys 1930	gag Glu	ctg Leu	tgt Cys	gag Glu	cag Gln 1935	gag Glu	tgt Cys	gaa Glu	5814
tgg Trp	gaa Glu 1940	gaa Glu	ata Ile	acc Thr	atc Ile	acg Thr 1945	ggt Gly	tcg Ser	gat Asp	ggc Gly	tcc Ser 1950	acc Thr	agg Arg	gta Val	5859
gtc Val	cta Leu 1955	gta Val	gac Asp	agg Arg	aag Lys	acg Thr 1960	ggc Gly	agt Ser	cag Gln	tat Tyr	gac Asp 1965	att Ile	caa Gln	gat Asp	5904
gct Ala	att Ile 1970	gac Asp	aaa Lys	ggc Gly	ctc Leu	gtc Val 1975	gac Asp	agg Arg	aag Lys	ttc Phe	ttc Phe 1980	gat Asp	caa Gln	tac Tyr	5949
cga Arg	tcc Ser 1985	ggc Gly	agc Ser	ctc Leu	agc Ser	ctc Leu 1990	acg Thr	cag Gln	ttt Phe	gcg Ala	gac Asp 1995	atg Met	atc Ile	tcc Ser	5994
ttg Leu	aag Lys 2000	aat Asn	ggc Gly	gtt Val	ggc Gly	acc Thr 2005	agc Ser	agc Ser	ggc Gly	ttg Leu	agc Ser 2010	ggg Gly	agt Ser	gtc Val	6039
aac Asn	gat Asp 2015	gat Asp	gtg Val	ttt Phe	agc Ser	agc Ser 2020	tct Ser	cga Arg	cac His	gaa Glu	tcc Ser 2025	gtg Val	agt Ser	aag Lys	6084
att tcc	acc ata	tcc agc	gtc aga	aat tta	acc atc	cga agc	agc	agc	agc	agc	agc	agc	agc	agc	6129

Ile	Ser	Thr	Ile	Ser	Ser	Val	Arg	Asn	Leu	Thr	Ile	Arg	Ser	Ser	
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tct	ctg	tct	gac	ccc	ctg	gag	gag	tca	agc	ccc	att	gcg	gcc	atc	6174
Ser	Leu	Ser	Asp	Pro	Leu	Glu	Glu	Ser	Ser	Pro	Ile	Ala	Ala	Ile	
2045						2050					2055				
ttt	gac	aca	gaa	aac	ctg	gag	aaa	atc	tcc	att	aca	gaa	ggc	ata	6219
Phe	Asp	Thr	Glu	Asn	Leu	Glu	Lys	Ile	Ser	Ile	Thr	Glu	Gly	Ile	
2060						2065					2070				
gag	cgg	ggc	att	gtg	gat	agc	atc	act	ggc	cag	agg	ctt	ctg	gaa	6264
Glu	Arg	Gly	Ile	Val	Asp	Ser	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	
2075						2080					2085				
gct	cag	gcc	tgc	acg	ggc	ggc	atc	atc	cac	cct	acc	acc	ggc	cag	6309
Ala	Gln	Ala	Cys	Thr	Gly	Gly	Ile	Ile	His	Pro	Thr	Thr	Gly	Gln	
2090						2095					2100				
aag	ctg	tcc	ctt	caa	gac	gca	gtc	tcc	cag	ggc	ctc	att	gac	caa	6354
Lys	Leu	Ser	Leu	Gln	Asp	Ala	Val	Ser	Gln	Gly	Leu	Ile	Asp	Gln	
2105						2110					2115				
gac	atg	gcc	acc	agg	ctg	aag	ccc	gcc	cag	aag	gcc	ttc	att	ggc	6399
Asp	Met	Ala	Thr	Arg	Leu	Lys	Pro	Ala	Gln	Lys	Ala	Phe	Ile	Gly	
2120						2125					2130				
ttt	gaa	ggc	gtc	aaa	gga	aag	aag	aag	atg	tca	gca	gca	gag	gca	6444
Phe	Glu	Gly	Val	Lys	Gly	Lys	Lys	Lys	Met	Ser	Ala	Ala	Glu	Ala	
2135						2140					2145				
gtg	aaa	gaa	aaa	tgg	ctg	ccc	tac	gag	gca	ggc	cag	cgc	ttc	ctg	6489
Val	Lys	Glu	Lys	Trp	Leu	Pro	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	
2150						2155					2160				
gag	ttc	cag	ttc	ctc	acc	gga	ggc	ctt	ggt	gac	ccg	gaa	gta	cat	6534
Glu	Phe	Gln	Phe	Leu	Thr	Gly	Gly	Leu	Val	Asp	Pro	Glu	Val	His	
2165						2170					2175				
ggg	agg	atc	agc	acc	gaa	gaa	gcc	atc	cgc	aaa	ggc	ttc	atc	gat	6579
Gly	Arg	Ile	Ser	Thr	Glu	Glu	Ala	Ile	Arg	Lys	Gly	Phe	Ile	Asp	
2180						2185					2190				
ggc	cgt	gca	gct	cag	agg	ttg	cag	gac	atc	agc	agc	tat	gcc	aaa	6624
Gly	Arg	Ala	Ala	Gln	Arg	Leu	Gln	Asp	Ile	Ser	Ser	Tyr	Ala	Lys	
2195						2200					2205				
atc	ctc	acc	tgc	ccc	aaa	acc	aaa	tta	aaa	atc	tcc	tac	aag	gat	6669
Ile	Leu	Thr	Cys	Pro	Lys	Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	
2210						2215					2220				
gcc	atg	aat	cgc	tcc	atg	gtg	gaa	gac	atc	act	ggg	ctg	cgc	ctt	6714
Ala	Met	Asn	Arg	Ser	Met	Val	Glu	Asp	Ile	Thr	Gly	Leu	Arg	Leu	
2225						2230					2235				
ctg	gaa	gcc	gcc	tcc	gtg	tcc	tgc	aag	ggc	ttg	cct	agc	cct	tat	6759
Leu	Glu	Ala	Ala	Ser	Val	Ser	Ser	Lys	Gly	Leu	Pro	Ser	Pro	Tyr	
2240						2245					2250				
aac	atg	tcg	gcc	cca	ggc	tcc	cgc	tct	ggc	tcg	agg	tcc	gga	tct	6804
Asn	Met	Ser	Ala	Pro	Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	
2255						2260					2265				
cgc	tca	ggc	tcc	cgc	tct	ggc	tcc	cgc	agt	ggg	tct	cga	aga	gga	6849
Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg	Arg	Gly	
2270						2275					2280				
agc	ttc	gat	gcg	acc	ggg	aat	tcc	tcc	tac	tcc	tat	tcc	tat	tca	6894
Ser	Phe	Asp	Ala	Thr	Gly	Asn	Ser	Ser	Tyr	Ser	Tyr	Ser	Tyr	Ser	

2285

2290

2295

ttt agc agt agc tcc att ggg tac tag  
 Phe Ser Ser Ser Ser Ile Gly Tyr  
 2300 2305

6921

<210> 44  
 <211> 2306  
 <212> PRT  
 <213> Rattus norvegicus

&lt;400&gt; 44

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Met Thr Arg Ala Glu Met Tyr Tyr Ser Arg Arg Cys Thr Val Asn Asp  
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Gln Asn Ser Asp Gly Tyr Trp Trp Val Pro Ala Gly Arg His Leu Ala  
 35 40 45

Gln Ala Gly Thr Phe Gly Gln Gly Val Ala Arg Leu Leu Gly Arg Pro  
 50 55 60

Gly Asn Pro Gly Leu Gly Arg Gly Lys Cys Ile Ala Pro Gly His Gly  
 65 70 75 80

Arg Gln Asp Pro Val Ser Leu Arg Pro Ala Leu Thr Pro Val Asn Arg  
 85 90 95

Glu Arg Gly Gln Thr Gly Thr Met Ser Arg His Gln Asn Gln Asn Thr  
 100 105 110

Ile Gln Glu Leu Leu Gln Asn Cys Ala Asp Cys Leu Met Arg Ala Glu  
 115 120 125

Leu Ile Ala Gln Pro Glu Leu Lys Phe Gly Glu Gly Ile Gln Leu Ala  
 130 135 140

Trp Asn Arg Glu Leu Asp Glu Tyr Phe Thr Gln Ala Asn Asp Gln Met  
 145 150 155 160

Glu Ile Ile Asp Gly Leu Ile Arg Glu Met Arg Gln Met Gly Gln Pro  
 165 170 175

Cys Asp Ala Tyr Gln Lys Arg Leu Leu Gln Leu Gln Glu Gln Met Arg  
 180 185 190

Ala Leu Tyr Lys Ala Ile Ser Ala Pro Arg Val Arg Arg Ala Ser Ser  
 195 200 205

Lys Gly Gly Tyr Thr Cys Gln Ser Gly Ser Gly Trp Asp Glu Phe Thr  
 210 215 220

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Lys Arg Leu Thr Gly Glu Cys Leu Gly Trp Met Arg Gln Gln Arg Ala  
 225 230 235 240  
 Glu Met Asp Leu Met Ala Trp Gly Val Asp Ser Gly Ser Val Glu Gln  
 245 250 255  
 His Ile Asn Ser His Arg Ser Ile His Asn Ala Ile Gly Asp Tyr Arg  
 260 265 270  
 Trp Gln Leu Asp Lys Ile Lys Ala Asp Leu Arg Glu Lys Ser Ala Ile  
 275 280 285  
 Tyr Gln Leu Glu Glu Glu Tyr Glu Asn Leu Leu Lys Ala Ser Phe Glu  
 290 295 300  
 Arg Met Asp His Leu Arg Gln Leu Gln Asn Ile Ile Gln Ala Thr Ser  
 305 310 315 320  
 Arg Glu Ile Met Trp Ile Asn Asp Cys Glu Glu Glu Glu Leu Leu Tyr  
 325 330 335  
 Asp Trp Ser Asp Lys Asn Thr Asn Ile Ala Gln Lys Gln Glu Ala Phe  
 340 345 350  
 Ser Ile Arg Met Ser Gln Leu Glu Val Lys Glu Lys Glu Leu Asn Lys  
 355 360 365  
 Leu Lys Gln Glu Ser Asp Gln Leu Val Leu Asn Gln His Pro Ala Ser  
 370 375 380  
 Asp Lys Ile Glu Ala Tyr Met Asp Thr Leu Gln Thr Gln Trp Ser Trp  
 385 390 395 400  
 Ile Leu Gln Ile Thr Lys Cys Ile Asp Val His Leu Lys Glu Asn Ala  
 405 410 415  
 Ala Tyr Phe Gln Phe Phe Glu Glu Ala Gln Ser Thr Glu Ala Tyr Leu  
 420 425 430  
 Lys Gly Leu Gln Asp Ser Ile Arg Lys Lys Tyr Pro Cys Asp Lys Asn  
 435 440 445  
 Met Pro Leu Gln His Leu Leu Glu Gln Ile Lys Glu Leu Glu Lys Glu  
 450 455 460  
 Arg Glu Lys Ile Leu Glu Tyr Lys Arg Gln Val Gln Asn Leu Val Asn  
 465 470 475 480  
 Lys Ser Lys Lys Ile Val Gln Leu Lys Pro Arg Asn Pro Asp Tyr Arg  
 485 490 495



Ser Asn Lys Pro 500 Ile Ile Leu Arg Ala 505 Leu Cys Asp Tyr Lys 510 Gln Asp

Gln Lys 515 Ile Val His Lys Gly Asp 520 Glu Cys Ile Leu Lys 525 Asp Asn Asn

Glu Arg 530 Ser Lys Trp Tyr Val 535 Thr Gly Pro Gly Gly 540 Val Asp Met Leu

Val 545 Pro Ser Val Gly 550 Leu Ile Ile Pro Pro 555 Asn Pro Leu Ala Val 560

Asp Leu Ser Cys 565 Lys Ile Glu Gln Tyr 570 Tyr Glu Ala Ile Leu Ala 575 Leu

Trp Asn Gln 580 Leu Tyr Ile Asn Met Lys 585 Ser Leu Val Ser Trp 590 His Tyr

Cys Met 595 Ile Asp Ile Glu Lys 600 Ile Arg Ala Met Thr 605 Ile Ala Lys Leu

Lys Thr 610 Met Arg Gln Glu 615 Asp Tyr Met Lys Thr 620 Ile Glu Asp Leu Glu

Leu 625 His Tyr Gln Asp Phe 630 Ile Lys Asn Ser Gln 635 Gly Ser Glu Met Phe 640

Gly Asp Asp Asp 645 Lys Arg Arg Met Gln 650 Ser Gln Phe Thr Asp Ala 655 Gln

Lys His Tyr 660 Gln Thr Leu Val Ile 665 Gln Leu Pro Gly His 670 Pro Gln His

Gln Thr 675 Val Thr Lys Thr Glu 680 Ile Thr His Val Gly 685 Thr Cys Gln Asp

Val 690 Asn His Asn Lys Val 695 Ile Glu Thr Asn Arg Glu 700 Asn Asp Lys Gln

Glu 705 Thr Trp Leu Leu 710 Met Glu Leu Gln Lys 715 Ile Arg Arg Gln Met Glu 720

His Cys Glu Ala 725 Arg Met Thr Leu Lys 730 Asn Leu Leu Leu Thr Asp 735 Gln

Gly Ser Thr 740 His Asn Ile Thr Val 745 Lys Ile Asn Glu Leu Lys 750 Ser Val

Gln Asn 755 Asp Ser Gln Ala Leu 760 Ala Glu Val Leu Asn Gln 765 Leu Lys Asp

Met Leu Ala Asn Phe Arg Gly Ser Glu Lys Tyr Cys Tyr Leu Gln Asn

770

775

780

Glu Ile Phe Gly Leu Phe Gln Lys Leu Glu Asn Ile Asn Gly Val Thr  
 785 790 795 800

Asp Gly Tyr Leu Asn Ser Leu Cys Ser Val Arg Ala Leu Leu Gln Ala  
 805 810 815

Ile Leu Gln Thr Glu Asp Met Leu Lys Val Tyr Glu Ala Arg Leu Thr  
 820 825 830

Glu Glu Glu Thr Val Cys Leu Asp Leu Asp Lys Val Glu Ala Tyr Arg  
 835 840 845

Cys Gly Leu Lys Lys Ile Lys Asn Asp Leu Asn Leu Lys Lys Ser Leu  
 850 855 860

Leu Ala Thr Met Lys Thr Glu Leu Gln Lys Ala Gln Gln Ile His Ser  
 865 870 875 880

Gln Ser Ser Gln Gln Tyr Pro Leu Tyr Asp Leu Asp Leu Gly Lys Phe  
 885 890 895

Thr Glu Lys Val Thr Gln Leu Thr Asp Arg Trp Gln Lys Ile Asp Lys  
 900 905 910

Gln Ile Asp Phe Arg Leu Trp Asp Leu Glu Lys Gln Ile Lys Gln Leu  
 915 920 925

Arg Asn Tyr Arg Asp Asn Tyr Gln Ser Phe Cys Lys Trp Leu Tyr Asp  
 930 935 940

Ala Lys Arg Arg Gln Asp Ser Leu Glu Ser Met Lys Phe Gly Asp Ser  
 945 950 955 960

Asn Thr Val Met Arg Phe Leu Asn Glu Gln Lys Asn Leu His Asn Glu  
 965 970 975

Ile Ser Gly Lys Arg Asp Lys Ser Glu Glu Val His Lys Ile Ala Glu  
 980 985 990

Leu Cys Ala Asn Ser Ile Lys Asp Tyr Glu Leu Gln Leu Ala Ser Tyr  
 995 1000 1005

Thr Ser Gly Leu Glu Thr Leu Leu Asn Ile Pro Ile Lys Arg Thr  
 1010 1015 1020

Met Val Gln Ser Pro Ser Gly Ala Ala Asp Ile His Ala Arg Tyr  
 1025 1030 1035

Ile Glu Leu Leu Thr Arg Ser Gly Asp Tyr Tyr Arg Phe Leu Ser  
 1040 1045 1050

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Glu	Met	Leu	Lys	Ser	Leu	Glu	Asp	Leu	Lys	Leu	Lys	Asn	Thr	Lys
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Ile	Glu	Val	Leu	Glu	Glu	Glu	Leu	Arg	Leu	Ala	Arg	Asp	Ala	Asn
	1070					1075					1080			
Ser	Glu	Asn	Cys	Asn	Lys	Asn	Lys	Phe	Leu	Asp	Gln	Asn	Leu	Gln
	1085					1090					1095			
Lys	Tyr	Gln	Ala	Glu	Cys	Ser	Gln	Phe	Lys	Ala	Lys	Leu	Val	Ser
	1100					1105					1110			
Leu	Glu	Glu	Leu	Lys	Arg	Gln	Ala	Glu	Leu	Asp	Gly	Lys	Ser	Ala
	1115					1120					1125			
Lys	Gln	Asn	Leu	Asp	Lys	Cys	Tyr	Gly	Gln	Ile	Lys	Glu	Leu	Asn
	1130					1135					1140			
Glu	Lys	Ile	Thr	Arg	Leu	Thr	Tyr	Glu	Ile	Glu	Asp	Glu	Lys	Arg
	1145					1150					1155			
Arg	Arg	Lys	Thr	Val	Glu	Asp	Arg	Phe	Asp	Gln	Gln	Lys	Asn	Asp
	1160					1165					1170			
Tyr	Asp	Gln	Leu	Gln	Lys	Ala	Arg	Gln	Cys	Glu	Lys	Glu	Ser	Leu
	1175					1180					1185			
Gly	Trp	Gln	Lys	Leu	Glu	Ser	Glu	Lys	Ala	Ile	Lys	Glu	Lys	Glu
	1190					1195					1200			
Tyr	Glu	Ile	Glu	Arg	Leu	Arg	Val	Leu	Leu	Gln	Glu	Glu	Gly	Ala
	1205					1210					1215			
Arg	Lys	Arg	Glu	Tyr	Glu	Asn	Glu	Leu	Ala	Lys	Ala	Ser	Asn	Arg
	1220					1225					1230			
Ile	Gln	Glu	Ser	Lys	Ser	Gln	Cys	Thr	Gln	Val	Val	Gln	Glu	Arg
	1235					1240					1245			
Glu	Ser	Leu	Leu	Val	Lys	Ile	Lys	Val	Leu	Glu	Gln	Asp	Lys	Ala
	1250					1255					1260			
Arg	Leu	Gln	Arg	Leu	Glu	Asp	Glu	Leu	Asn	Arg	Ala	Lys	Ala	Thr
	1265					1270					1275			
Leu	Glu	Ala	Glu	Thr	Arg	Val	Lys	Gln	Arg	Leu	Glu	Cys	Glu	Lys
	1280					1285					1290			
Gln	Gln	Ile	Gln	Asn	Asp	Leu	Asn	Gln	Trp	Lys	Thr	Gln	Tyr	Ser
	1295					1300					1305			

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Arg Lys Glu Glu Thr Ile Arg Lys Ile Glu Ser Glu Arg Glu Lys  
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Ser Glu Arg Glu Lys Asn Ser Leu Arg Ser Glu Ile Glu Arg Leu  
1325 1330 1335

Gln Ala Glu Ile Lys Arg Ile Glu Glu Arg Cys Arg Arg Lys Leu  
1340 1345 1350

Glu Asp Ser Thr Arg Glu Thr Gln Ser Gln Leu Glu Thr Glu Arg  
1355 1360 1365

Cys Arg Leu Gln Lys Glu Ile Asp Lys Leu Arg Gln Arg Pro Tyr  
1370 1375 1380

Gly Ser His Arg Glu Thr Gln Thr Glu Tyr Glu Trp Thr Val Asp  
1385 1390 1395

Ser Ser Lys Leu Val Phe Asp Gly Leu Arg Lys Lys Val Thr Ala  
1400 1405 1410

Met Gln Leu Tyr Glu Cys Gln Leu Ile Asp Lys Thr Thr Leu Asp  
1415 1420 1425

Lys Leu Leu Lys Gly Lys Lys Ser Val Glu Glu Val Ala Ser Glu  
1430 1435 1440

Ile Gln Pro Phe Leu Arg Gly Ala Gly Ala Ile Ala Gly Ala Ser  
1445 1450 1455

Ala Ser Pro Lys Glu Lys Tyr Ser Leu Val Glu Ala Lys Arg Lys  
1460 1465 1470

Lys Phe Ile Thr Pro Glu Ser Thr Val Met Leu Leu Glu Ala Gln  
1475 1480 1485

Ala Ala Thr Gly Gly Ile Ile Asp Pro His Arg Asn Glu Lys Leu  
1490 1495 1500

Thr Val Asp Asn Ala Ile Ala Arg Asp Leu Ile Asp Phe Asp Asp  
1505 1510 1515

Arg Gln Gln Ile Tyr Thr Ala Glu Lys Ala Ile Thr Gly Phe Asp  
1520 1525 1530

Asp Pro Phe Ser Gly Lys Thr Val Ser Val Ser Glu Ala Ile Lys  
1535 1540 1545

Lys Asn Leu Ile Asp Arg Glu Thr Gly Met Arg Leu Leu Glu Ala  
1550 1555 1560

Gln Leu 1565 Ala Ser Gly Gly Val 1570 Val Asp Pro Val Asn 1575 Ser Val Phe  
 Leu Pro 1580 Lys Asp Val Ala Leu 1585 Ala Arg Gly Leu Ile 1590 Asp Arg Asp  
 Leu Tyr 1595 Arg Ser Leu Asn Asp 1600 Pro Arg Asp Ser Gln 1605 Lys Asn Phe  
 Val Asp 1610 Pro Ile Thr Lys Lys 1615 Lys Val Ser Tyr Met 1620 Gln Leu Arg  
 Glu Arg 1625 Cys Arg Ile Glu Pro 1630 His Thr Gly Leu Leu 1635 Leu Leu Ser  
 Val Gln 1640 Lys Arg Ser Met Ser 1645 Phe Gln Gly Ile Arg 1650 Gln Pro Val  
 Thr Val 1655 Thr Glu Leu Val Asp 1660 Ser Gly Ile Leu Arg 1665 Pro Ser Thr  
 Val Asn 1670 Glu Leu Glu Ser Gly 1675 Gln Ile Ser Tyr Asp 1680 Glu Val Gly  
 Glu Arg 1685 Ile Lys Asp Phe Leu 1690 Gln Gly Ser Ser Cys 1695 Ile Ala Gly  
 Ile Tyr 1700 Asn Glu Thr Thr Lys 1705 Gln Lys Leu Gly Ile 1710 Tyr Glu Ala  
 Met Lys 1715 Ile Gly Leu Val Arg 1720 Pro Gly Thr Ala Leu 1725 Glu Leu Leu  
 Glu Ala 1730 Gln Ala Ala Thr Gly 1735 Phe Ile Val Asp Pro 1740 Val Ser Asn  
 Leu Arg 1745 Leu Pro Val Glu Glu 1750 Ala Tyr Lys Arg Gly 1755 Leu Val Gly  
 Ile Glu 1760 Phe Lys Glu Lys Leu 1765 Leu Ser Ala Glu Arg 1770 Ala Val Thr  
 Gly Tyr 1775 Asn Asp Pro Glu Thr 1780 Gly Asn Ile Ile Ser 1785 Leu Phe Gln  
 Ala Met 1790 Asn Lys Glu Leu Ile 1795 Glu Lys Gly His Gly 1800 Ile Arg Leu  
 Leu Glu 1805 Ala Gln Ile Ala Thr 1810 Gly Gly Ile Ile Asp 1815 Pro Lys Glu  
 Ser His Arg Leu Pro Val Asp Met Ala Tyr Lys Arg Gly Tyr Phe



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Ala Gln Ala Cys Thr Gly Gly Ile Ile His Pro Thr Thr Gly Gln  
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Lys Leu Ser Leu Gln Asp Ala Val Ser Gln Gly Leu Ile Asp Gln  
2105 2110 2115

Asp Met Ala Thr Arg Leu Lys Pro Ala Gln Lys Ala Phe Ile Gly  
2120 2125 2130

Phe Glu Gly Val Lys Gly Lys Lys Lys Met Ser Ala Ala Glu Ala  
2135 2140 2145

Val Lys Glu Lys Trp Leu Pro Tyr Glu Ala Gly Gln Arg Phe Leu  
2150 2155 2160

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Gly Arg Ile Ser Thr Glu Glu Ala Ile Arg Lys Gly Phe Ile Asp  
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Gly Arg Ala Ala Gln Arg Leu Gln Asp Ile Ser Ser Tyr Ala Lys  
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Ile Leu Thr Cys Pro Lys Thr Lys Leu Lys Ile Ser Tyr Lys Asp  
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Leu Glu Ala Ala Ser Val Ser Ser Lys Gly Leu Pro Ser Pro Tyr  
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His Arg Gly Arg Lys Ala Pro Gly Ile Glu Tyr Trp Asp Ser Ala Val
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Glu Gly Val Ala Cys Gln Ala Glu Cys Val Ser Tyr Leu Trp Ile
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gtg gga gcc aat gaa gat tcc caa act gct aag cag tta aaa ctc aag      192
Val Gly Ala Asn Glu Asp Ser Gln Thr Ala Lys Gln Leu Lys Leu Lys
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Glu Pro Ser Asp Arg Phe Asn Glu Ser Glu Val Cys Arg Ser Thr Pro
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acc ttt gca aga cag aac tgc ttc acg gtt cat aaa cat ttt gga aac      288
Thr Phe Ala Arg Gln Asn Cys Phe Thr Val His Lys His Phe Gly Asn
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gca ctg tat cag aag aaa cag ctt ttc atg gat ggt gtg act ggg tct      336
Ala Leu Tyr Gln Lys Lys Gln Leu Phe Met Asp Gly Val Thr Gly Ser
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Val Ser Lys Pro Gly Ser Val Pro Gly Ala Asn Gly Val Val Asn Thr
115 120 125

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Gln Pro Leu Ala Val Asn Thr Gln Pro Leu Asn Trp Glu Trp Pro Trp
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Ser Lys Ser Leu Glu Cys Ser Ser Ser Ala Ser Leu Ile Gly Thr Asn
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Trp	Thr	Arg	Leu	Gln	Pro	Pro	Leu	Ser	Gln	Pro	Ala	Asn	Gly	Arg	Ser	
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Val	Thr	Pro	Arg	Pro	Arg	Leu	Gln	Arg	Leu	Leu	Asp	Ser	Ser	Ala	Thr	
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Gln	Gly	Arg	Leu	Tyr	Gln	Gly	Cys	Ala	Ser	Arg	Arg	Arg	Gly	Val	Leu	
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Leu	Asp	Ser	Leu	Ile	Arg	Glu	Met	Arg	Gln	Met	Gly	Gln	Pro	Cys	Asp	
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ggc Gly	gac Asp	tat Tyr	cgc Arg
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atc Ile 630	aaa Lys	gcc Ala	gac Asp
ctg Leu	cgt Arg 635	gag Glu	aaa Lys
tct Ser	gcg Ala	atc Ile 640	
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ctg Leu	tac Tyr		
gac Asp 690	tgg Trp	agc Ser	gac Asp
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gcc Ala	tat Tyr	atg Met	gac Asp
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Glu	Asp	Leu	Lys	Leu	Lys	Asn	Thr	Lys	Ile	Glu	Val	Leu	Glu	Glu	
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Gln	Ala	Glu	Leu	Asp	Gly	Lys	Ser	Ala	Lys	Gln	Asn	Leu	Asp	Lys	
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Cys	Tyr	Gly	Gln	Ile	Lys	Glu	Leu	Asn	Glu	Lys	Ile	Thr	Arg	Leu	
	1445					1450					1455				
act	tat	gag	att	gaa	gat	gaa	aag	aga	aga	aga	aaa	tct	gtg	gaa	4419
Thr	Tyr	Glu	Ile	Glu	Asp	Glu	Lys	Arg	Arg	Arg	Lys	Ser	Val	Glu	
	1460					1465					1470				
gac	aga	ttt	gac	caa	cag	aag	aat	gac	tat	gac	caa	ctg	cag	aaa	4464
Asp	Arg	Phe	Asp	Gln	Gln	Lys	Asn	Asp	Tyr	Asp	Gln	Leu	Gln	Lys	
	1475					1480					1485				
gca	agg	caa	tgt	gaa	aag	gag	aac	ctt	ggt	tgg	cag	aaa	tta	gag	4509
Ala	Arg	Gln	Cys	Glu	Lys	Glu	Asn	Leu	Gly	Trp	Gln	Lys	Leu	Glu	
	1490					1495					1500				
tct	gag	aaa	gcc	atc	aag	gag	aag	gag	tac	gag	att	gaa	agg	ttg	4554
Ser	Glu	Lys	Ala	Ile	Lys	Glu	Lys	Glu	Tyr	Glu	Ile	Glu	Arg	Leu	
	1505					1510					1515				
agg	gtt	cta	ctg	cag	gaa	gaa	ggc	acc	cgg	aag	aga	gaa	tat	gaa	4599
Arg	Val	Leu	Leu	Gln	Glu	Glu	Gly	Thr	Arg	Lys	Arg	Glu	Tyr	Glu	
	1520					1525					1530				
aat	gag	ctg	gca	aag	gta	aga	aac	cac	tat	aat	gag	gag	atg	agt	4644
Asn	Glu	Leu	Ala	Lys	Val	Arg	Asn	His	Tyr	Asn	Glu	Glu	Met	Ser	
	1535					1540					1545				
aat	tta	agg	aac	aag	tat	gaa	aca	gag	att	aac	att	acg	aag	acc	4689
Asn	Leu	Arg	Asn	Lys	Tyr	Glu	Thr	Glu	Ile	Asn	Ile	Thr	Lys	Thr	
	1550					1555					1560				
acc	atc	aag	gag	ata	tcc	atg	caa	aaa	gag	gat	gat	tcc	aaa	aat	4734
Thr	Ile	Lys	Glu	Ile	Ser	Met	Gln	Lys	Glu	Asp	Asp	Ser	Lys	Asn	
	1565					1570					1575				
ctt	aga	aac	cag	ctt	gat	aga	ctc	tca	agg	gaa	aat	cga	gat	ctg	4779
Leu	Arg	Asn	Gln	Leu	Asp	Arg	Leu	Ser	Arg	Glu	Asn	Arg	Asp	Leu	
	1580					1585					1590				
aag	gat	gaa	att	gtc	agg	ctc	aat	gac	agc	atc	ttg	cag	gcc	act	4824
Lys	Asp	Glu	Ile	Val	Arg	Leu	Asn	Asp	Ser	Ile	Leu	Gln	Ala	Thr	

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1595						1600						1605					
gag	cag	cga	agg	cga	gct	gaa	gaa	aat	gcc	ctt	cag	caa	aag	gcc			4869
Glu	Gln	Arg	Arg	Arg	Ala	Glu	Glu	Asn	Ala	Leu	Gln	Gln	Lys	Ala			
	1610					1615					1620						
tgt	ggc	tct	gag	ata	atg	cag	aag	aag	cag	cat	ctg	gag	ata	gaa			4914
Cys	Gly	Ser	Glu	Ile	Met	Gln	Lys	Lys	Gln	His	Leu	Glu	Ile	Glu			
	1625					1630					1635						
ctg	aag	cag	gtc	atg	cag	cag	cgc	tct	gag	gac	aat	gcc	cgg	cac			4959
Leu	Lys	Gln	Val	Met	Gln	Gln	Arg	Ser	Glu	Asp	Asn	Ala	Arg	His			
	1640					1645					1650						
aag	cag	tcc	ctg	gag	gag	gct	gcc	aag	acc	att	cag	gac	aaa	aat			5004
Lys	Gln	Ser	Leu	Glu	Glu	Ala	Ala	Lys	Thr	Ile	Gln	Asp	Lys	Asn			
	1655					1660					1665						
aag	gag	atc	gag	aga	ctc	aaa	gct	gag	ttt	cag	gag	gag	gcc	aag			5049
Lys	Glu	Ile	Glu	Arg	Leu	Lys	Ala	Glu	Phe	Gln	Glu	Glu	Ala	Lys			
	1670					1675					1680						
cgc	cgc	tgg	gaa	tat	gaa	aat	gaa	ctg	agt	aag	gta	aga	aac	aat			5094
Arg	Arg	Trp	Glu	Tyr	Glu	Asn	Glu	Leu	Ser	Lys	Val	Arg	Asn	Asn			
	1685					1690					1695						
tat	gat	gag	gag	atc	att	agc	tta	aaa	aat	cag	ttt	gag	acc	gag			5139
Tyr	Asp	Glu	Glu	Ile	Ile	Ser	Leu	Lys	Asn	Gln	Phe	Glu	Thr	Glu			
	1700					1705					1710						
atc	aac	atc	acc	aag	acc	acc	atc	cac	cag	ctc	acc	atg	cag	aag			5184
Ile	Asn	Ile	Thr	Lys	Thr	Thr	Ile	His	Gln	Leu	Thr	Met	Gln	Lys			
	1715					1720					1725						
gaa	gag	gat	acc	agt	ggc	tac	cgg	gct	cag	ata	gac	aat	ctc	acc			5229
Glu	Glu	Asp	Thr	Ser	Gly	Tyr	Arg	Ala	Gln	Ile	Asp	Asn	Leu	Thr			
	1730					1735					1740						
cga	gaa	aac	agg	agc	tta	tct	gaa	gaa	ata	aag	agg	ctg	aag	aac			5274
Arg	Glu	Asn	Arg	Ser	Leu	Ser	Glu	Glu	Ile	Lys	Arg	Leu	Lys	Asn			
	1745					1750					1755						
act	cta	acc	cag	acc	aca	gag	aat	ctc	agg	agg	gtg	gaa	gaa	gac			5319
Thr	Leu	Thr	Gln	Thr	Thr	Glu	Asn	Leu	Arg	Arg	Val	Glu	Glu	Asp			
	1760					1765					1770						
gtc	caa	cag	caa	aag	gcc	act	ggc	tct	gag	gtg	tct	cag	agg	aaa			5364
Val	Gln	Gln	Gln	Lys	Ala	Thr	Gly	Ser	Glu	Val	Ser	Gln	Arg	Lys			
	1775					1780					1785						
cag	cag	ctg	gag	gtt	gag	ctg	aga	caa	gtc	act	cag	atg	cga	aca			5409
Gln	Gln	Leu	Glu	Val	Glu	Leu	Arg	Gln	Val	Thr	Gln	Met	Arg	Thr			
	1790					1795					1800						
gag	gag	agc	gta	aga	tat	aag	caa	tct	ctt	gat	gat	gct	gcc	aaa			5454
Glu	Glu	Ser	Val	Arg	Tyr	Lys	Gln	Ser	Leu	Asp	Asp	Ala	Ala	Lys			
	1805					1810					1815						
acc	atc	cag	gat	aaa	aac	aag	gag	ata	gaa	agg	tta	aaa	caa	ctg			5499
Thr	Ile	Gln	Asp	Lys	Asn	Lys	Glu	Ile	Glu	Arg	Leu	Lys	Gln	Leu			
	1820					1825					1830						
atc	gac	aaa	gaa	aca	aat	gac	cgg	aaa	tgc	ctg	gaa	gat	gaa	aac			5544
Ile	Asp	Lys	Glu	Thr	Asn	Asp	Arg	Lys	Cys	Leu	Glu	Asp	Glu	Asn			
	1835					1840					1845						
gcg	aga	tta	caa	agg	gtc	cag	tat	gac	ctg	cag	aaa	gca	aac	agt			5589
Ala	Arg	Leu	Gln	Arg	Val	Gln	Tyr	Asp	Leu	Gln	Lys	Ala	Asn	Ser			
	1850					1855					1860						

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agt Ser	gcg Ala 1865	acg Thr	gag Glu	aca Thr	ata Ile	aac Asn 1870	aaa Lys	ctg Leu	aag Lys	gtt Val	cag Gln 1875	gag Glu	caa Gln	gaa Glu	5634
ctg Leu	aca Thr 1880	cgc Arg	ctg Leu	agg Arg	atc Ile	gac Asp 1885	tat Tyr	gaa Glu	agg Arg	gtt Val	tcc Ser 1890	cag Gln	gag Glu	agg Arg	5679
act Thr	gtg Val 1895	aag Lys	gac Asp	cag Gln	gat Asp	atc Ile 1900	acg Thr	cgg Arg	ttc Phe	cag Gln	agc Ser 1905	tct Ser	ctg Leu	aaa Lys	5724
gag Glu	ctg Leu 1910	cag Gln	ctg Leu	cag Gln	aag Lys	cag Gln 1915	aag Lys	gtg Val	gaa Glu	gag Glu	gag Glu 1920	ctc Leu	aat Asn	cgg Arg	5769
ctg Leu	aag Lys 1925	agg Arg	acg Thr	gcg Ala	tca Ser	gaa Glu 1930	gac Asp	tcc Ser	tgc Cys	aag Lys	agg Arg 1935	aag Lys	aag Lys	ctg Leu	5814
gag Glu	gaa Glu 1940	gag Glu	ctg Leu	gaa Glu	ggc Gly	atg Met 1945	agg Arg	agg Arg	tgc Ser	ctg Leu	aag Lys 1950	gag Glu	caa Gln	gcc Ala	5859
atc Ile	aaa Lys 1955	atc Ile	acc Thr	aac Asn	ctg Leu	acc Thr 1960	cag Gln	cag Gln	ctg Leu	gag Glu	cag Gln 1965	gca Ala	tcc Ser	att Ile	5904
gtt Val	aag Lys 1970	aag Lys	agg Arg	agt Ser	gag Glu	gat Asp 1975	gac Asp	ctc Leu	cgg Arg	cag Gln	cag Gln 1980	agg Arg	gac Asp	gtg Val	5949
ctg Leu	gat Asp 1985	ggc Gly	cac His	ctg Leu	agg Arg	gaa Glu 1990	aag Lys	cag Gln	agg Arg	acc Thr	cag Gln 1995	gaa Glu	gag Glu	ctg Leu	5994
agg Arg	agg Arg 2000	ctg Leu	tct Ser	tct Ser	gag Glu	gtc Val 2005	gag Glu	gcc Ala	ctg Leu	agg Arg	cgg Arg 2010	cag Gln	tta Leu	ctc Leu	6039
cag Gln	gaa Glu 2015	cag Gln	gaa Glu	agt Ser	gtc Val	aaa Lys 2020	caa Gln	gct Ala	cac His	ttg Leu	agg Arg 2025	aat Asn	gag Glu	cat His	6084
ttc Phe	cag Gln 2030	aag Lys	gcg Ala	ata Ile	gaa Glu	gat Asp 2035	aaa Lys	agc Ser	aga Arg	agc Ser	tta Leu 2040	aat Asn	gaa Glu	agc Ser	6129
aaa Lys	ata Ile 2045	gaa Glu	att Ile	gag Glu	agg Arg	ctg Leu 2050	cag Gln	tct Ser	ctc Leu	aca Thr	gag Glu 2055	aac Asn	ctg Leu	acc Thr	6174
aag Lys	gag Glu 2060	cac His	ttg Leu	atg Met	tta Leu	gaa Glu 2065	gaa Glu	gaa Glu	ctg Leu	cgg Arg	aac Asn 2070	ctg Leu	agg Arg	ctg Leu	6219
gag Glu	tac Tyr 2075	gat Asp	gac Asp	ctg Leu	agg Arg	aga Arg 2080	ggg Gly	cga Arg	agc Ser	gaa Glu	gcg Ala 2085	gac Asp	agt Ser	gat Asp	6264
aaa Lys	aat Asn 2090	gca Ala	acc Thr	atc Ile	ttg Leu	gaa Glu 2095	cta Leu	agg Arg	agc Ser	cag Gln	ctg Leu 2100	cag Gln	atc Ile	agc Ser	6309
aac Asn	aac Asn 2105	cgg Arg	acc Thr	ctg Leu	gaa Glu	ctg Leu 2110	cag Gln	ggg Gly	ctg Leu	att Ile	cat His 2115	gat Asp	tta Leu	cag Gln	6354

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aga Arg	gag Glu 2120	agg Arg	gaa Glu	aat Asn	ttg Leu	aga Arg 2125	cag Gln	gaa Glu	att Ile	gag Glu	aaa Lys 2130	ttc Phe	caa Gln	aag Lys	6399
cag Gln	gct Ala 2135	tta Leu	gag Glu	gca Ala	tct Ser	aat Asn 2140	agg Arg	att Ile	cag Gln	gaa Glu	tca Ser 2145	aag Lys	aat Asn	cag Gln	6444
tgt Cys	act Thr 2150	cag Gln	gtg Val	gta Val	cag Gln	gaa Glu 2155	aga Arg	gag Glu	agc Ser	ctt Leu	ctg Leu 2160	gtg Val	aaa Lys	atc Ile	6489
aaa Lys	gtc Val 2165	ctg Leu	gag Glu	caa Gln	gac Asp	aag Lys 2170	gca Ala	agg Arg	ctg Leu	cag Gln	agg Arg 2175	ctg Leu	gag Glu	gat Asp	6534
gag Glu	ctg Leu 2180	aat Asn	cgt Arg	gca Ala	aaa Lys	gca Ala 2185	act Thr	cta Leu	gag Glu	gca Ala	gaa Glu 2190	acc Thr	agg Arg	gtg Val	6579
aaa Lys	cag Gln 2195	cgc Arg	ctg Leu	gag Glu	tgt Cys	gag Glu 2200	aaa Lys	cag Gln	caa Gln	att Ile	cag Gln 2205	aat Asn	gac Asp	ctg Leu	6624
aat Asn	cag Gln 2210	tgg Trp	aag Lys	act Thr	caa Gln	tat Tyr 2215	tcc Ser	cgc Arg	aag Lys	gag Glu	gag Glu 2220	gct Ala	att Ile	agg Arg	6669
aag Lys	ata Ile 2225	gaa Glu	tcg Ser	gaa Glu	aga Arg	gaa Glu 2230	aag Lys	agt Ser	gag Glu	aga Arg	gag Glu 2235	aag Lys	aac Asn	agt Ser	6714
ctt Leu	agg Arg 2240	agt Ser	gag Glu	atc Ile	gaa Glu	aga Arg 2245	ctc Leu	caa Gln	gca Ala	gag Glu	atc Ile 2250	aag Lys	aga Arg	att Ile	6759
gaa Glu	gag Glu 2255	agg Arg	tgc Cys	agg Arg	cgt Arg	aag Lys 2260	ctg Leu	gag Glu	gat Asp	tct Ser	acc Thr 2265	agg Arg	gag Glu	aca Thr	6804
cag Gln	tca Ser 2270	cag Gln	tta Leu	gaa Glu	aca Thr	gaa Glu 2275	cgc Arg	tcc Ser	cga Arg	tat Tyr	cag Gln 2280	agg Arg	gag Glu	atc Ile	6849
gat Asp	aaa Lys 2285	ctc Leu	aga Arg	cag Gln	cgc Arg	cca Pro 2290	tat Tyr	ggg Gly	tcc Ser	cat His	cga Arg 2295	gag Glu	acc Thr	cag Gln	6894
act Thr	gac Asp 2300	tgt Cys	gag Glu	tgg Trp	acc Thr	gtt Val 2305	gac Asp	acc Thr	tcc Ser	aag Lys	ctg Leu 2310	gtg Val	ttt Phe	gat Asp	6939
ggg Gly	ctg Leu 2315	agg Arg	aag Lys	aag Lys	gtg Val	aca Thr 2320	gca Ala	atg Met	cag Gln	ctc Leu	tat Tyr 2325	gag Glu	tgt Cys	cag Gln	6984
ctg Leu	atc Ile 2330	gac Asp	aaa Lys	aca Thr	acc Thr	ttg Leu 2335	gac Asp	aaa Lys	cta Leu	ttg Leu	aag Lys 2340	ggg Gly	aag Lys	aag Lys	7029
tca Ser	gtg Val 2345	gaa Glu	gaa Glu	gtt Val	gct Ala	tct Ser 2350	gaa Glu	atc Ile	cag Gln	cca Pro	ttc Phe 2355	ctt Leu	cgg Arg	ggt Gly	7074
gca Ala	gga Gly 2360	tct Ser	atc Ile	gct Ala	gga Gly	gca Ala 2365	tct Ser	gct Ala	tct Ser	cct Pro	aag Lys 2370	gaa Glu	aaa Lys	tac Tyr	7119
tct Leu	ttg Leu	gta Glu	gag Glu	gcc Ala	aag Lys	aga Glu	aag Lys	aaa Lys	tta Glu	atc Glu	agc Glu	cca Glu	gaa Glu	tcc Glu	7164



Ser	Leu	Val	Glu	Ala	Lys	Arg	Lys	Lys	Leu	Ile	Ser	Pro	Glu	Ser	
2375						2380					2385				
aca	gtc	atg	ctt	ctg	gag	gcc	cag	gca	gct	aca	ggg	ggg	ata	att	7209
Thr	Val	Met	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Gly	Ile	Ile	
2390						2395					2400				
gat	ccc	cat	cgg	aat	gag	aag	ctg	act	gtc	gac	agt	gcc	ata	gct	7254
Asp	Pro	His	Arg	Asn	Glu	Lys	Leu	Thr	Val	Asp	Ser	Ala	Ile	Ala	
2405						2410					2415				
cgg	gac	ctc	att	gac	ttc	gat	gac	cgt	cag	cag	ata	tat	gca	gca	7299
Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Gln	Gln	Ile	Tyr	Ala	Ala	
2420						2425					2430				
gaa	aaa	gct	atc	act	ggg	ttt	gat	gat	cca	ttt	tca	ggc	aag	aca	7344
Glu	Lys	Ala	Ile	Thr	Gly	Phe	Asp	Asp	Pro	Phe	Ser	Gly	Lys	Thr	
2435						2440					2445				
gta	tct	gtt	tca	gaa	gcc	atc	aag	aaa	aat	ttg	att	gat	aga	gaa	7389
Val	Ser	Val	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu	Ile	Asp	Arg	Glu	
2450						2455					2460				
acc	gga	atg	cgc	ctg	ctg	gaa	gcc	cag	att	gct	gca	ggg	ggg	gta	7434
Thr	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Ala	Gly	Gly	Val	
2465						2470					2475				
gta	gac	cct	gtg	aac	agt	gtc	ttt	ttg	cca	aaa	gat	gtc	gcc	ttg	7479
Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys	Asp	Val	Ala	Leu	
2480						2485					2490				
gcc	cgg	ggg	ctg	att	gat	aga	gat	ttg	tat	cga	tcc	ctg	aat	gat	7524
Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg	Ser	Leu	Asn	Asp	
2495						2500					2505				
ccc	cga	gat	agt	cag	aaa	aac	ttt	gtg	gat	cca	gtc	acc	aaa	aag	7569
Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro	Val	Thr	Lys	Lys	
2510						2515					2520				
aag	gtc	agt	tac	gtg	cag	ctg	aag	gaa	cgg	tgc	aga	atc	gaa	cca	7614
Lys	Val	Ser	Tyr	Val	Gln	Leu	Lys	Glu	Arg	Cys	Arg	Ile	Glu	Pro	
2525						2530					2535				
cat	act	ggg	ctg	ctc	ttg	ctt	tca	gta	cag	aag	aga	agc	atg	tcc	7659
His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys	Arg	Ser	Met	Ser	
2540						2545					2550				
ttc	caa	gga	atc	aga	caa	cct	gtg	acc	gtc	act	gag	cta	gta	gat	7704
Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr	Glu	Leu	Val	Asp	
2555						2560					2565				
tct	ggg	ata	ttg	aga	ccg	tcc	act	gtc	aat	gaa	ctg	gaa	tct	ggg	7749
Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	Leu	Glu	Ser	Gly	
2570						2575					2580				
cag	att	tct	tat	gac	gag	gtt	ggg	gag	aga	att	aag	gac	ttc	ctc	7794
Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	Lys	Asp	Phe	Leu	
2585						2590					2595				
cag	ggg	tca	agc	tgc	ata	gca	ggc	ata	tac	aat	gag	acc	aca	aaa	7839
Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	Glu	Thr	Thr	Lys	
2600						2605					2610				
cag	aag	ctt	ggc	att	tat	gag	gcc	atg	aaa	att	ggc	tta	gtc	cga	7884
Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly	Leu	Val	Arg	
2615						2620					2625				
cct	ggg	act	gct	ctg	gag	ttg	ctg	gaa	gcc	caa	gca	gct	act	ggc	7929
Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	

2630	2635	2640	
ttt Phe 2645	ata Ile 2645	gtg Val 2645	gat Asp 2645
cct Pro 2650	gtt Val 2650	agc Ser 2650	aac Asn 2650
ttg Leu 2655	agg Arg 2655	tta Leu 2655	cca Pro 2655
gtg Val 2660	gag Glu 2660	gaa Glu 2660	7974
gcc Ala 2660	tat Tyr 2660	aag Lys 2660	aga Arg 2660
ggt Gly 2665	ctg Leu 2665	gtg Val 2665	ggc Gly 2665
att Ile 2670	gag Glu 2670	ttc Phe 2670	aaa Lys 2670
gag Glu 2675	aag Lys 2675	ctc Leu 2675	8019
ctg Leu 2675	tct Ser 2675	gca Ala 2680	gaa Glu 2680
cga Arg 2680	gct Ala 2680	gtc Val 2680	act Thr 2680
ggg Gly 2685	tat Tyr 2685	aat Asn 2685	gat Asp 2685
cct Pro 2690	gaa Glu 2690	aca Thr 2690	8064
gga Gly 2690	aac Asn 2690	atc Ile 2690	atc Ile 2690
atc Ile 2700	tct Ser 2700	ttg Leu 2700	ttc Phe 2700
caa Gln 2700	gcc Ala 2700	atg Met 2700	aat Asn 2700
aag Lys 2700	gaa Glu 2700	ctc Leu 2700	atc Ile 2700
8109			
gaa Glu 2705	aag Lys 2705	ggc Gly 2710	cat His 2710
ggt Gly 2710	att Ile 2710	cgc Arg 2710	tta Leu 2710
tta Leu 2715	tta Leu 2715	gaa Glu 2715	gca Ala 2715
cag Gln 2715	atc Ile 2715	gca Ala 2715	acc Thr 2715
8154			
ggg Gly 2720	ggg Gly 2720	atc Ile 2720	att Ile 2720
gac Asp 2725	cca Pro 2725	aag Lys 2725	gag Glu 2725
agg Arg 2730	cat His 2730	cgt Arg 2730	tta Leu 2730
cca Pro 2735	gtt Val 2735	gac Asp 2735	8199
ata Ile 2735	gca Ala 2735	tat Tyr 2740	ttc Phe 2740
aag Arg 2740	agg Arg 2740	ggc Gly 2740	tat Tyr 2740
ttc Phe 2745	aat Asn 2745	gag Glu 2745	gaa Glu 2745
ctc Leu 2745	agt Ser 2745	gag Glu 2745	att Ile 2745
8244			
ctc Leu 2750	tca Ser 2750	gat Asp 2750	cca Pro 2750
agt Ser 2750	gat Asp 2750	gat Asp 2750	acc Thr 2750
aaa Lys 2755	gga Gly 2755	ttt Phe 2755	ttt Phe 2755
gac Asp 2760	ccc Pro 2760	aac Asn 2760	8289
act Thr 2765	gaa Glu 2765	gaa Glu 2765	aat Asn 2765
ctt Leu 2770	acc Thr 2770	tat Tyr 2770	ctg Leu 2770
caa Gln 2770	cta Leu 2770	aaa Lys 2770	gaa Glu 2770
aga Arg 2775	tgc Cys 2775	att Ile 2775	8334
aag Lys 2780	gat Asp 2780	gag Glu 2780	gaa Glu 2780
aca Thr 2785	ggg Gly 2785	ctc Leu 2785	tgt Cys 2785
ctt Leu 2790	cct Pro 2790	ctg Leu 2790	aaa Lys 2790
gaa Glu 2790	aag Lys 2790	aag Lys 2790	8379
aag Lys 2795	aaa Lys 2795	cag Gln 2800	gtg Val 2800
cag Gln 2800	gtg Val 2800	aca Thr 2800	tca Ser 2800
caa Gln 2805	aag Lys 2805	aat Asn 2805	acc Thr 2805
ctc Leu 2805	agg Arg 2805	aag Lys 2805	cgt Arg 2805
8424			
aga Arg 2810	gtg Val 2810	gtc Val 2810	ata Ile 2810
gtt Val 2815	gac Asp 2815	cca Pro 2815	gaa Glu 2815
acc Thr 2820	aat Asn 2820	aaa Lys 2820	gaa Glu 2820
atg Met 2820	tct Ser 2820	gtt Val 2820	8469
cag Gln 2825	gag Glu 2825	gcc Ala 2830	tac Tyr 2830
aag Lys 2830	aag Lys 2830	ggc Gly 2830	cta Leu 2830
att Ile 2835	gat Asp 2835	tat Tyr 2835	gaa Glu 2835
acc Thr 2835	ttc Phe 2835	aaa Lys 2835	8514
gaa Glu 2840	ctg Leu 2840	tgt Cys 2845	gaa Glu 2845
tgt Cys 2845	gaa Glu 2845	tgt Cys 2845	gaa Glu 2845
ata Ile 2850	acc Thr 2850	atc Ile 2850	acg Thr 2850
8559			
gga Gly 2855	tca Ser 2855	gat Asp 2855	ggc Gly 2855
acc Thr 2860	acc Thr 2860	agg Arg 2860	gtg Val 2860
gtg Val 2865	gtc Val 2865	ctg Leu 2865	gta Val 2865
gat Asp 2865	aga Arg 2865	aag Lys 2865	ggc Gly 2865
8604			
ggc Gly 2870	agt Ser 2870	cag Gln 2875	tat Tyr 2875
gat Asp 2875	att Ile 2875	caa Gln 2875	gat Asp 2875
gct Ala 2880	att Ile 2880	gac Asp 2880	aag Lys 2880
gag Glu 2880	ctc Leu 2880	gtt Val 2880	8649
gac Asp 2885	agg Arg 2885	aag Lys 2885	ttc Phe 2885
ttt Phe 2890	gat Asp 2890	cag Gln 2890	tac Tyr 2890
cga Arg 2895	tcc Ser 2895	ggc Gly 2895	agc Ser 2895
ctc Leu 2895	agc Ser 2895	ctc Leu 2895	8694

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act Thr	caa Gln 2900	ttt Phe	gct Ala	gac Asp	atg Met	atc Ile 2905	tcc Ser	ttg Leu	aaa Lys	aat Asn	ggt Gly 2910	ggt Val	ggc Gly	acc Thr	8739
agc Ser	agc Ser 2915	agc Ser	atg Met	ggc Gly	agt Ser	ggt Gly 2920	gtc Val	agc Ser	gat Asp	gat Asp	ggt Val 2925	ttt Phe	agc Ser	agc Ser	8784
tcc Ser	cga Arg 2930	cat His	gaa Glu	tca Ser	gta Val	agt Ser 2935	aag Lys	att Ile	tcc Ser	acc Thr	ata Ile 2940	tcc Ser	agc Ser	gtc Val	8829
agg Arg	aat Asn 2945	tta Leu	acc Thr	ata Ile	agg Arg	agc Ser 2950	agc Ser	tct Ser	ttt Phe	tca Ser	gac Asp 2955	acc Thr	ctg Leu	gaa Glu	8874
gaa Glu	tcg Ser 2960	agc Ser	ccc Pro	att Ile	gca Ala	gcc Ala 2965	atc Ile	ttt Phe	gac Asp	aca Thr	gaa Glu 2970	aac Asn	ctg Leu	gag Glu	8919
aaa Lys	atc Ile 2975	tcc Ser	att Ile	aca Thr	gaa Glu	ggt Gly 2980	ata Ile	gag Glu	cgg Arg	ggc Gly	atc Ile 2985	ggt Val	gac Asp	agc Ser	8964
atc Ile	acg Thr 2990	ggt Gly	cag Gln	agg Arg	ctt Leu	ctg Leu 2995	gag Glu	gct Ala	cag Gln	gcc Ala	tgc Cys 3000	aca Thr	ggt Gly	ggc Gly	9009
atc Ile	atc Ile 3005	cac His	cca Pro	acc Thr	acg Thr	ggc Gly 3010	cag Gln	aag Lys	ctg Leu	tca Ser	ctt Leu 3015	cag Gln	gac Asp	gca Ala	9054
gtc Val	tcc Ser 3020	cag Gln	ggt Gly	gtg Val	att Ile	gac Asp 3025	caa Gln	gac Asp	atg Met	gcc Ala	acc Thr 3030	agg Arg	ctg Leu	aag Lys	9099
cct Pro	gct Ala 3035	cag Gln	aaa Lys	gcc Ala	ttc Phe	ata Ile 3040	ggc Gly	ttc Phe	gag Glu	ggt Gly	gtg Val 3045	aag Lys	gga Gly	aag Lys	9144
aag Lys	aag Lys 3050	atg Met	tca Ser	gca Ala	gca Ala	gag Glu 3055	gca Ala	gtg Val	aaa Lys	gaa Glu	aaa Lys 3060	tgg Trp	ctc Leu	ccg Pro	9189
tat Tyr	gag Glu 3065	gct Ala	ggc Gly	cag Gln	cgc Arg	ttc Phe 3070	ctg Leu	gag Glu	ttc Phe	cag Gln	tac Tyr 3075	ctc Leu	acg Thr	gga Gly	9234
ggt Gly	ctt Leu 3080	gtt Val	gac Asp	ccg Pro	gaa Glu	gtg Val 3085	cat His	ggg Gly	agg Arg	ata Ile	agc Ser 3090	acc Thr	gaa Glu	gaa Glu	9279
gcc Ala	atc Ile 3095	cgg Arg	aag Lys	ggg Gly	ttc Phe	atc Ile 3100	gat Asp	ggc Gly	cgc Arg	gcc Ala	gca Ala 3105	cag Gln	agg Arg	ctg Leu	9324
caa Gln	gac Asp 3110	acc Thr	agc Ser	agc Ser	tat Tyr	gcc Ala 3115	aaa Lys	atc Ile	ctg Leu	acc Thr	tgc Cys 3120	ccc Pro	aaa Lys	acc Thr	9369
aaa Lys	tta Leu 3125	aaa Lys	ata Ile	tcc Ser	tat Tyr	aag Lys 3130	gat Asp	gcc Ala	ata Ile	aat Asn	cgc Arg 3135	tcc Ser	atg Met	gta Val	9414
gaa Glu	gat Asp 3140	atc Ile	act Thr	ggg Gly	ctg Leu	cgc Arg 3145	ctt Leu	ctg Leu	gaa Glu	gct Ala	gcc Ala 3150	tcc Ser	gtg Val	tcg Ser	9459

tcc aag ggc tta ccc agc cct tac aac atg tct tcc gct ccg ggc 9504  
 Ser Lys Gly Leu Pro Ser Pro Tyr Asn Met Ser Ser Ala Pro Gly  
 3155 3160 3165

tcc cgc tcc ggc tcc cgc tcg gga tct cgc tcc gga tct cgc tcc 9549  
 Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser  
 3170 3175 3180

ggg tcc cgc agt ggg tcc cgg aga gga agc ttt gac gcc aca ggg 9594  
 Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr Gly  
 3185 3190 3195

aat tct tcc tac tct tat tcc tac tca ttt agc agt agt tct att 9639  
 Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser Ser Ser Ile  
 3200 3205 3210

ggg cac tagtagtcag ttgggagtg ttgctatacc ttgacttcat ttatatgaat 9695  
 Gly His  
 3215

ttccacttta ttaaataata aaaaagaaaa tcccggtgct tgcagtagag tgataggaca 9755

ttctatgctt acagaaaata tagccatgat tgaaatcaaa tagtaaaggc tgttctggct 9815

ttttatcttc ttagctcatc ttaaataagc agtacacttg gatgcagtgc gtctgaagtg 9875

ctaatacagtt gtaacaatag cacaatatcga acttaggatt tgtttcttct cttctgtggt 9935

tcgatttttg atcaattctt taattttgga agcctataat acagttttct attcttggag 9995

ataaaaaatta aatggatcac tgatatttta gtcattctgc ttctcatcta aatattttcca 10055

tattccgtat taggagaaaa ttaccctccc agcaccagcc cccctctca aacccccaac 10115

ccaaaaccaa gcattttgga atgagtcgcc tttagtttta gagtgtggac tgtataaccc 10175

atatactctt tgatgtactt gtttggtttg gtattaattt gactgtgcat gacagcggca 10235

atctttgctt ttctttggtc aaagttttct gtttattttg cttgtcatat tcgatgtact 10295

ttaagaaggt gtctttatga agtttgctat tctggcaata aacttttaga cttttgaa 10353

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 <211> 3215  
 <212> PRT  
 <213> Pan troglodytes

<400> 46

Met Glu Lys Arg Gly Gly His Cys Ser Gly Arg Gly Gln Glu Pro Lys  
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His Arg Gly Arg Lys Ala Pro Gly Ile Glu Tyr Trp Asp Ser Ala Val  
 20 25 30

Glu Gly Val Ala Cys Gln Ala Ala Glu Cys Val Ser Tyr Leu Trp Ile  
 35 40 45

Val Gly Ala Asn Glu Asp Ser Gln Thr Ala Lys Gln Leu Lys Leu Lys  
 50 55 60

Glu Pro Ser Asp Arg Phe Asn Glu Ser Glu Val Cys Arg Ser Thr Pro  
 65 70 75 80

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Thr Phe Ala Arg Gln Asn Cys Phe Thr Val His Lys His Phe Gly Asn  
85 90 95

Ala Leu Tyr Gln Lys Lys Gln Leu Phe Met Asp Gly Val Thr Gly Ser  
100 105 110

Val Ser Lys Pro Gly Ser Val Pro Gly Ala Asn Gly Val Val Asn Thr  
115 120 125

Gln Pro Leu Ala Val Asn Thr Gln Pro Leu Asn Trp Glu Trp Pro Trp  
130 135 140

Ser Lys Ser Leu Glu Cys Ser Ser Ser Ala Ser Leu Ile Gly Thr Asn  
145 150 155 160

Ser Asp Ala Ala Pro Leu Arg Pro Cys Arg Pro Pro Ser His Ser Ser  
165 170 175

Ser Ser Arg Ser Cys Pro Arg Pro Val Ala Val Ser Ala Leu Ala Ala  
180 185 190

Ala Ser Gly Gly Pro Arg Trp Arg Ala Ala Thr Ser Arg Ala Phe Arg  
195 200 205

Thr Pro Ala Arg Phe Pro Gly Arg Pro Pro Ile Leu Gly Pro Leu Arg  
210 215 220

Phe Leu Arg Ala Gly Pro Pro Arg Leu Cys Leu Gly Ala Glu Pro Leu  
225 230 235 240

Ser Arg Leu Pro Ala Asp Met Ser Cys Asn Gly Gly Ser His Pro Arg  
245 250 255

Ile Asn Thr Leu Gly Arg Met Ile Arg Ala Glu Ser Gly Pro Asp Leu  
260 265 270

Arg Tyr Glu Val Thr Ser Gly Gly Gly Gly Thr Ser Arg Met Tyr Tyr  
275 280 285

Ser Arg Arg Gly Val Ile Thr Asp Gln Asn Ser Asp Gly Tyr Trp Trp  
290 295 300

Val Pro Ala Arg Arg Ala Arg Ala Ala Gly Leu Ala Gly Gln Gly Gly  
305 310 315 320

Thr Ile Leu Leu Trp Thr Thr Gly Arg Ile Glu Ser Arg Ser Arg Ala  
325 330 335

Gly Gly Gln Arg Gly Arg Arg Ala Arg Ala Gly Leu Ser Pro Ala Cys  
340 345 350

Trp Thr Arg Leu Gln Pro Pro Leu Ser Gln Pro Ala Asn Gly Arg Ser  
355 360 365

Gly Glu Val Gly Leu Arg Pro Gln Asn Pro Thr Ser Pro Thr Val Ile  
370 375 380

Lys Val Lys Glu Glu Arg Ser Gly Ala Pro Val Leu Ser Gly Gly Arg  
385 390 395 400

Val Val Leu Gly Ala Pro Gln Ser Leu Pro Ala His Pro Gln Ser Pro  
405 410 415

Val Thr Pro Arg Pro Arg Leu Gln Arg Leu Leu Asp Ser Ser Ala Thr  
420 425 430

Gln Gly Arg Leu Tyr Gln Gly Cys Ala Ser Arg Arg Arg Gly Val Leu  
435 440 445

Ser Arg Gly Gly Ala Ser Ala Ser Pro Gln Thr Thr Asn Thr Ile Gln  
450 455 460

Glu Leu Leu Gln Asn Cys Ser Asp Cys Leu Met Arg Ala Glu Leu Ile  
465 470 475 480

Val Gln Pro Glu Leu Lys Tyr Gly Asp Gly Ile Gln Leu Thr Arg Ser  
485 490 495

Arg Glu Leu Asp Glu Cys Phe Ala Gln Ala Asn Asp Gln Met Glu Ile  
500 505 510

Leu Asp Ser Leu Ile Arg Glu Met Arg Gln Met Gly Gln Pro Cys Asp  
515 520 525

Ala Tyr Gln Lys Arg Leu Leu Gln Leu Gln Glu Gln Met Arg Ala Leu  
530 535 540

Tyr Lys Ala Ile Ser Val Pro Arg Val Arg Arg Ala Ser Ser Lys Gly  
545 550 555 560

Gly Gly Gly Tyr Thr Cys Gln Ser Gly Ser Gly Trp Asp Glu Phe Thr  
565 570 575

Lys His Val Thr Ser Glu Cys Leu Gly Trp Met Arg Gln Gln Arg Ala  
580 585 590

Glu Met Asp Met Val Ala Trp Gly Val Asp Leu Ala Ser Val Glu Gln  
595 600 605

His Ile Asn Ser His Arg Gly Ile His Asn Ser Ile Gly Asp Tyr Arg  
610 615 620

Trp Gln Leu Asp Lys Ile Lys Ala Asp Leu Arg Glu Lys Ser Ala Ile  
Seite 202

625 630 635 640  
 Tyr Gln Trp Arg Glu Glu Tyr Glu Asn Leu Leu Lys Ala Ser Phe Glu  
 645 650 655  
 Arg Met Asp His Leu Arg Gln Leu Gln Asn Ile Ile Gln Ala Thr Ser  
 660 665 670  
 Arg Glu Ile Met Trp Ile Asn Asp Cys Glu Glu Glu Glu Leu Leu Tyr  
 675 680 685  
 Asp Trp Ser Asp Lys Asn Thr Asn Ile Ala Gln Lys Gln Glu Ala Phe  
 690 695 700  
 Ser Ile Arg Met Ser Gln Leu Glu Val Lys Glu Lys Glu Leu Asn Lys  
 705 710 715 720  
 Leu Lys Gln Glu Ser Asp Gln Leu Val Leu Asn Gln His Pro Ala Ser  
 725 730 735  
 Asp Lys Ile Glu Ala Tyr Met Asp Thr Leu Gln Thr Gln Trp Ser Trp  
 740 745 750  
 Ile Leu Gln Ile Thr Lys Cys Ile Asp Val His Leu Lys Glu Asn Ala  
 755 760 765  
 Ala Tyr Phe Gln Phe Phe Glu Glu Ala Gln Ser Thr Glu Ala Tyr Leu  
 770 775 780  
 Lys Gly Leu Gln Asp Ser Ile Arg Lys Lys Tyr Arg Ser Asp Lys Asn  
 785 790 795 800  
 Met Pro Leu Gln His Leu Leu Glu Gln Ile Lys Glu Leu Glu Lys Glu  
 805 810 815  
 Arg Glu Lys Ile Leu Glu Tyr Lys Arg Gln Val Gln Asn Leu Val Asn  
 820 825 830  
 Lys Ser Lys Lys Ile Val Gln Leu Lys Pro Arg Asn Pro Asp Tyr Arg  
 835 840 845  
 Ser Asn Lys Pro Ile Ile Leu Arg Ala Leu Cys Asp Tyr Lys Gln Asp  
 850 855 860  
 Gln Lys Ile Val His Lys Gly Asp Glu Cys Ile Leu Lys Asp Asn Asn  
 865 870 875 880  
 Glu Arg Ser Lys Trp Tyr Val Thr Gly Pro Gly Gly Val Asp Met Leu  
 885 890 895  
 Val Pro Ser Val Gly Leu Ile Ile Pro Pro Pro Asn Pro Leu Ala Leu  
 900 905 910

Lys Thr Met Arg Gln Glu Asp Tyr Met Lys Thr Ile Ala Asp Leu Glu  
 915 920 925  
 Leu His Tyr Gln Glu Phe Ile Arg Asn Ser Gln Gly Ser Glu Met Phe  
 930 935 940  
 Gly Asp Asp Asp Lys Arg Lys Ile Gln Ser Gln Phe Thr Asp Ala Gln  
 945 950 955 960  
 Lys His Tyr Gln Thr Leu Val Ile Gln Leu Pro Gly Tyr Pro Gln His  
 965 970 975  
 Gln Thr Val Thr Thr Thr Glu Ile Thr His His Gly Thr Cys Gln Asp  
 980 985 990  
 Val Asn His Asn Lys Val Ile Glu Thr Asn Arg Glu Asn Asp Lys Gln  
 995 1000 1005  
 Glu Thr Trp Met Leu Met Glu Leu Gln Lys Ile Arg Arg Gln Ile  
 1010 1015 1020  
 Glu His Cys Glu Gly Arg Met Thr Leu Lys Asn Leu Pro Leu Ala  
 1025 1030 1035  
 Asp Gln Gly Ser Ser His His Ile Thr Val Lys Ile Asn Glu Leu  
 1040 1045 1050  
 Lys Ser Val Gln Asn Asp Ser Gln Ala Ile Ala Glu Val Leu Asn  
 1055 1060 1065  
 Gln Leu Lys Asp Met Leu Ala Asn Phe Arg Gly Ser Glu Lys Tyr  
 1070 1075 1080  
 Cys Tyr Leu Gln Asn Glu Val Phe Gly Leu Phe Gln Lys Leu Glu  
 1085 1090 1095  
 Asn Ile Asn Gly Val Thr Asp Gly Tyr Leu Asn Ser Leu Cys Thr  
 1100 1105 1110  
 Val Arg Ala Leu Leu Gln Ala Ile Leu Gln Thr Glu Asp Met Leu  
 1115 1120 1125  
 Lys Val Tyr Glu Ala Arg Leu Pro Glu Glu Glu Thr Val Cys Leu  
 1130 1135 1140  
 Asp Leu Asp Lys Ala Glu Ala Tyr Arg Cys Gly Leu Lys Lys Ile  
 1145 1150 1155  
 Lys Asn Asp Leu Asn Leu Lys Lys Ser Leu Leu Ala Thr Met Lys  
 1160 1165 1170



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Thr	Glu	Leu	Gln	Lys	Ala	Gln	Gln	Ile	His	Ser	Gln	Thr	Ser	Gln
	1175					1180					1185			
Gln	Tyr	Pro	Leu	Tyr	Asp	Leu	Asp	Leu	Gly	Lys	Phe	Gly	Glu	Lys
	1190					1195					1200			
Val	Thr	Gln	Leu	Thr	Asp	Arg	Trp	Gln	Arg	Ile	Asp	Lys	Gln	Ile
	1205					1210					1215			
Asp	Phe	Arg	Leu	Trp	Asp	Leu	Glu	Lys	Gln	Ile	Lys	Gln	Leu	Arg
	1220					1225					1230			
Asn	Tyr	Arg	Asp	Asn	Tyr	Gln	Ala	Phe	Cys	Lys	Trp	Val	Tyr	Asp
	1235					1240					1245			
Ala	Lys	Arg	Arg	Gln	Asp	Ser	Leu	Glu	Ser	Met	Lys	Phe	Gly	Asp
	1250					1255					1260			
Ser	Asn	Thr	Val	Met	Arg	Phe	Leu	Asn	Glu	Gln	Lys	Asn	Leu	His
	1265					1270					1275			
Ser	Glu	Ile	Ser	Gly	Lys	Arg	Asp	Lys	Ser	Glu	Glu	Val	Gln	Lys
	1280					1285					1290			
Ile	Ala	Glu	Leu	Cys	Ala	Asn	Ser	Ile	Lys	Asp	Tyr	Glu	Leu	Gln
	1295					1300					1305			
Leu	Ala	Ser	Tyr	Thr	Ser	Gly	Leu	Glu	Thr	Leu	Leu	Asn	Ile	Pro
	1310					1315					1320			
Ile	Lys	Arg	Thr	Met	Ile	Gln	Ser	Pro	Ser	Gly	Val	Ile	Leu	Gln
	1325					1330					1335			
Glu	Ala	Ala	Asp	Val	His	Ala	Arg	Tyr	Ile	Glu	Leu	Leu	Thr	Arg
	1340					1345					1350			
Ser	Gly	Asp	Tyr	Tyr	Arg	Phe	Leu	Ser	Glu	Met	Leu	Lys	Ser	Leu
	1355					1360					1365			
Glu	Asp	Leu	Lys	Leu	Lys	Asn	Thr	Lys	Ile	Glu	Val	Leu	Glu	Glu
	1370					1375					1380			
Glu	Leu	Arg	Leu	Ala	Arg	Asp	Ala	Asn	Ser	Glu	Asn	Cys	Asn	Lys
	1385					1390					1395			
Asn	Lys	Phe	Leu	Asp	Gln	Asn	Leu	Gln	Lys	Tyr	Gln	Ala	Glu	Cys
	1400					1405					1410			
Ser	Gln	Phe	Lys	Ala	Lys	Leu	Ala	Ser	Leu	Glu	Glu	Leu	Lys	Arg
	1415					1420					1425			

Gln Ala Glu Leu Asp Gly Lys Ser Ala Lys Gln Asn Leu Asp Lys  
1430 1435 1440

Cys Tyr Gly Gln Ile Lys Glu Leu Asn Glu Lys Ile Thr Arg Leu  
1445 1450 1455

Thr Tyr Glu Ile Glu Asp Glu Lys Arg Arg Arg Lys Ser Val Glu  
1460 1465 1470

Asp Arg Phe Asp Gln Gln Lys Asn Asp Tyr Asp Gln Leu Gln Lys  
1475 1480 1485

Ala Arg Gln Cys Glu Lys Glu Asn Leu Gly Trp Gln Lys Leu Glu  
1490 1495 1500

Ser Glu Lys Ala Ile Lys Glu Lys Glu Tyr Glu Ile Glu Arg Leu  
1505 1510 1515

Arg Val Leu Leu Gln Glu Glu Gly Thr Arg Lys Arg Glu Tyr Glu  
1520 1525 1530

Asn Glu Leu Ala Lys Val Arg Asn His Tyr Asn Glu Glu Met Ser  
1535 1540 1545

Asn Leu Arg Asn Lys Tyr Glu Thr Glu Ile Asn Ile Thr Lys Thr  
1550 1555 1560

Thr Ile Lys Glu Ile Ser Met Gln Lys Glu Asp Asp Ser Lys Asn  
1565 1570 1575

Leu Arg Asn Gln Leu Asp Arg Leu Ser Arg Glu Asn Arg Asp Leu  
1580 1585 1590

Lys Asp Glu Ile Val Arg Leu Asn Asp Ser Ile Leu Gln Ala Thr  
1595 1600 1605

Glu Gln Arg Arg Arg Ala Glu Glu Asn Ala Leu Gln Gln Lys Ala  
1610 1615 1620

Cys Gly Ser Glu Ile Met Gln Lys Lys Gln His Leu Glu Ile Glu  
1625 1630 1635

Leu Lys Gln Val Met Gln Gln Arg Ser Glu Asp Asn Ala Arg His  
1640 1645 1650

Lys Gln Ser Leu Glu Glu Ala Ala Lys Thr Ile Gln Asp Lys Asn  
1655 1660 1665

Lys Glu Ile Glu Arg Leu Lys Ala Glu Phe Gln Glu Glu Ala Lys  
1670 1675 1680

Arg Arg Trp Glu Tyr Glu Asn Glu Leu Ser Lys Val Arg Asn Asn

1685

1690

1695

Tyr Asp Glu Glu Ile Ile Ser Leu Lys Asn Gln Phe Glu Thr Glu  
1700 1705 1710

Ile Asn Ile Thr Lys Thr Thr Ile His Gln Leu Thr Met Gln Lys  
1715 1720 1725

Glu Glu Asp Thr Ser Gly Tyr Arg Ala Gln Ile Asp Asn Leu Thr  
1730 1735 1740

Arg Glu Asn Arg Ser Leu Ser Glu Glu Ile Lys Arg Leu Lys Asn  
1745 1750 1755

Thr Leu Thr Gln Thr Thr Glu Asn Leu Arg Arg Val Glu Glu Asp  
1760 1765 1770

Val Gln Gln Gln Lys Ala Thr Gly Ser Glu Val Ser Gln Arg Lys  
1775 1780 1785

Gln Gln Leu Glu Val Glu Leu Arg Gln Val Thr Gln Met Arg Thr  
1790 1795 1800

Glu Glu Ser Val Arg Tyr Lys Gln Ser Leu Asp Asp Ala Ala Lys  
1805 1810 1815

Thr Ile Gln Asp Lys Asn Lys Glu Ile Glu Arg Leu Lys Gln Leu  
1820 1825 1830

Ile Asp Lys Glu Thr Asn Asp Arg Lys Cys Leu Glu Asp Glu Asn  
1835 1840 1845

Ala Arg Leu Gln Arg Val Gln Tyr Asp Leu Gln Lys Ala Asn Ser  
1850 1855 1860

Ser Ala Thr Glu Thr Ile Asn Lys Leu Lys Val Gln Glu Gln Glu  
1865 1870 1875

Leu Thr Arg Leu Arg Ile Asp Tyr Glu Arg Val Ser Gln Glu Arg  
1880 1885 1890

Thr Val Lys Asp Gln Asp Ile Thr Arg Phe Gln Ser Ser Leu Lys  
1895 1900 1905

Glu Leu Gln Leu Gln Lys Gln Lys Val Glu Glu Glu Leu Asn Arg  
1910 1915 1920

Leu Lys Arg Thr Ala Ser Glu Asp Ser Cys Lys Arg Lys Lys Leu  
1925 1930 1935

Glu Glu Glu Leu Glu Gly Met Arg Arg Ser Leu Lys Glu Gln Ala  
1940 1945 1950

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Ile	Lys 1955	Ile	Thr	Asn	Leu	Thr 1960	Gln	Gln	Leu	Glu	Gln 1965	Ala	Ser	Ile
Val	Lys 1970	Lys	Arg	Ser	Glu	Asp 1975	Asp	Leu	Arg	Gln	Gln 1980	Arg	Asp	Val
Leu	Asp 1985	Gly	His	Leu	Arg	Glu 1990	Lys	Gln	Arg	Thr	Gln 1995	Glu	Glu	Leu
Arg	Arg 2000	Leu	Ser	Ser	Glu	Val 2005	Glu	Ala	Leu	Arg	Arg 2010	Gln	Leu	Leu
Gln	Glu 2015	Gln	Glu	Ser	Val	Lys 2020	Gln	Ala	His	Leu	Arg 2025	Asn	Glu	His
Phe	Gln 2030	Lys	Ala	Ile	Glu	Asp 2035	Lys	Ser	Arg	Ser	Leu 2040	Asn	Glu	Ser
Lys	Ile 2045	Glu	Ile	Glu	Arg	Leu 2050	Gln	Ser	Leu	Thr	Glu 2055	Asn	Leu	Thr
Lys	Glu 2060	His	Leu	Met	Leu	Glu 2065	Glu	Glu	Leu	Arg	Asn 2070	Leu	Arg	Leu
Glu	Tyr 2075	Asp	Asp	Leu	Arg	Arg 2080	Gly	Arg	Ser	Glu	Ala 2085	Asp	Ser	Asp
Lys	Asn 2090	Ala	Thr	Ile	Leu	Glu 2095	Leu	Arg	Ser	Gln	Leu 2100	Gln	Ile	Ser
Asn	Asn 2105	Arg	Thr	Leu	Glu	Leu 2110	Gln	Gly	Leu	Ile	His 2115	Asp	Leu	Gln
Arg	Glu 2120	Arg	Glu	Asn	Leu	Arg 2125	Gln	Glu	Ile	Glu	Lys 2130	Phe	Gln	Lys
Gln	Ala 2135	Leu	Glu	Ala	Ser	Asn 2140	Arg	Ile	Gln	Glu	Ser 2145	Lys	Asn	Gln
Cys	Thr 2150	Gln	Val	Val	Gln	Glu 2155	Arg	Glu	Ser	Leu	Leu 2160	Val	Lys	Ile
Lys	Val 2165	Leu	Glu	Gln	Asp	Lys 2170	Ala	Arg	Leu	Gln	Arg 2175	Leu	Glu	Asp
Glu	Leu 2180	Asn	Arg	Ala	Lys	Ala 2185	Thr	Leu	Glu	Ala	Glu 2190	Thr	Arg	Val
Lys	Gln 2195	Arg	Leu	Glu	Cys	Glu 2200	Lys	Gln	Gln	Ile	Gln 2205	Asn	Asp	Leu

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Asn	Gln	Trp	Lys	Thr	Gln	Tyr	Ser	Arg	Lys	Glu	Glu	Ala	Ile	Arg
	2210					2215					2220			
Lys	Ile	Glu	Ser	Glu	Arg	Glu	Lys	Ser	Glu	Arg	Glu	Lys	Asn	Ser
	2225					2230					2235			
Leu	Arg	Ser	Glu	Ile	Glu	Arg	Leu	Gln	Ala	Glu	Ile	Lys	Arg	Ile
	2240					2245					2250			
Glu	Glu	Arg	Cys	Arg	Arg	Lys	Leu	Glu	Asp	Ser	Thr	Arg	Glu	Thr
	2255					2260					2265			
Gln	Ser	Gln	Leu	Glu	Thr	Glu	Arg	Ser	Arg	Tyr	Gln	Arg	Glu	Ile
	2270					2275					2280			
Asp	Lys	Leu	Arg	Gln	Arg	Pro	Tyr	Gly	Ser	His	Arg	Glu	Thr	Gln
	2285					2290					2295			
Thr	Asp	Cys	Glu	Trp	Thr	Val	Asp	Thr	Ser	Lys	Leu	Val	Phe	Asp
	2300					2305					2310			
Gly	Leu	Arg	Lys	Lys	Val	Thr	Ala	Met	Gln	Leu	Tyr	Glu	Cys	Gln
	2315					2320					2325			
Leu	Ile	Asp	Lys	Thr	Thr	Leu	Asp	Lys	Leu	Leu	Lys	Gly	Lys	Lys
	2330					2335					2340			
Ser	Val	Glu	Glu	Val	Ala	Ser	Glu	Ile	Gln	Pro	Phe	Leu	Arg	Gly
	2345					2350					2355			
Ala	Gly	Ser	Ile	Ala	Gly	Ala	Ser	Ala	Ser	Pro	Lys	Glu	Lys	Tyr
	2360					2365					2370			
Ser	Leu	Val	Glu	Ala	Lys	Arg	Lys	Lys	Leu	Ile	Ser	Pro	Glu	Ser
	2375					2380					2385			
Thr	Val	Met	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Gly	Ile	Ile
	2390					2395					2400			
Asp	Pro	His	Arg	Asn	Glu	Lys	Leu	Thr	Val	Asp	Ser	Ala	Ile	Ala
	2405					2410					2415			
Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Gln	Gln	Ile	Tyr	Ala	Ala
	2420					2425					2430			
Glu	Lys	Ala	Ile	Thr	Gly	Phe	Asp	Asp	Pro	Phe	Ser	Gly	Lys	Thr
	2435					2440					2445			
Val	Ser	Val	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu	Ile	Asp	Arg	Glu
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Thr	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Ala	Gly	Gly	Val
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Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys	Asp	Val	Ala	Leu
	2480					2485					2490			
Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg	Ser	Leu	Asn	Asp
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Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro	Val	Thr	Lys	Lys
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Lys	Val	Ser	Tyr	Val	Gln	Leu	Lys	Glu	Arg	Cys	Arg	Ile	Glu	Pro
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His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys	Arg	Ser	Met	Ser
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Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr	Glu	Leu	Val	Asp
	2555					2560					2565			
Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	Leu	Glu	Ser	Gly
	2570					2575					2580			
Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	Lys	Asp	Phe	Leu
	2585					2590					2595			
Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	Glu	Thr	Thr	Lys
	2600					2605					2610			
Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly	Leu	Val	Arg
	2615					2620					2625			
Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly
	2630					2635					2640			
Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu	Pro	Val	Glu	Glu
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Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Asn	Asp	Pro	Glu	Thr
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Gly	Gly	Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg	Leu	Pro	Val	Asp

2720

2725

2730

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Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn  
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Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg Cys Ile  
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Gly Ser Asp Gly Thr Thr Arg Val Val Leu Val Asp Arg Lys Thr  
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Gly Ser Gln Tyr Asp Ile Gln Asp Ala Ile Asp Lys Gly Leu Val  
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Asp Arg Lys Phe Phe Asp Gln Tyr Arg Ser Gly Ser Leu Ser Leu  
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Thr Gln Phe Ala Asp Met Ile Ser Leu Lys Asn Gly Val Gly Thr  
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Ser Ser Ser Met Gly Ser Gly Val Ser Asp Asp Val Phe Ser Ser  
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Ser Arg His Glu Ser Val Ser Lys Ile Ser Thr Ile Ser Ser Val  
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Arg Asn Leu Thr Ile Arg Ser Ser Ser Phe Ser Asp Thr Leu Glu  
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Glu Ser Ser Pro Ile Ala Ala Ile Phe Asp Thr Glu Asn Leu Glu  
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Lys Ile Ser Ile Thr Glu Gly Ile Glu Arg Gly Ile Val Asp Ser  
 2975 2980 2985

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Ile Thr Gly Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr Gly Gly  
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Ile Ile His Pro Thr Thr Gly Gln Lys Leu Ser Leu Gln Asp Ala  
 3005 3010 3015

Val Ser Gln Gly Val Ile Asp Gln Asp Met Ala Thr Arg Leu Lys  
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Pro Ala Gln Lys Ala Phe Ile Gly Phe Glu Gly Val Lys Gly Lys  
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Lys Lys Met Ser Ala Ala Glu Ala Val Lys Glu Lys Trp Leu Pro  
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Tyr Glu Ala Gly Gln Arg Phe Leu Glu Phe Gln Tyr Leu Thr Gly  
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Gly Leu Val Asp Pro Glu Val His Gly Arg Ile Ser Thr Glu Glu  
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Ala Ile Arg Lys Gly Phe Ile Asp Gly Arg Ala Ala Gln Arg Leu  
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Gln Asp Thr Ser Ser Tyr Ala Lys Ile Leu Thr Cys Pro Lys Thr  
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Lys Leu Lys Ile Ser Tyr Lys Asp Ala Ile Asn Arg Ser Met Val  
 3125 3130 3135

Glu Asp Ile Thr Gly Leu Arg Leu Leu Glu Ala Ala Ser Val Ser  
 3140 3145 3150

Ser Lys Gly Leu Pro Ser Pro Tyr Asn Met Ser Ser Ala Pro Gly  
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Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser Gly Ser Arg Ser  
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Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr Gly  
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Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser Ser Ser Ile  
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Gly His  
 3215

<210> 47  
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 <212> DNA



&lt;213&gt; Gallus gallus

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(6702)

&lt;400&gt; 47

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Met Ser Met Asn Gly Gly Ser His Pro Arg Ile Asn Thr Leu Gly Arg	
1 5 10 15	
atg gcg cgg gcc gac tcg ggc acc gac ctg cgc tac gag atg agc tcc	96
Met Ala Arg Ala Asp Ser Gly Thr Asp Leu Arg Tyr Glu Met Ser Ser	
20 25 30	
cat gtg gtg ggc ggc ggc ggc ggc ggc acc cac acc cac aag acc tac	144
His Val Val Gly Gly Gly Gly Gly Gly Thr His Thr His Lys Thr Tyr	
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tat tac cag aag acc tac ggg ggc gac tac gcc tcc gac ggg tac ggt	192
Tyr Tyr Gln Lys Thr Tyr Gly Gly Asp Tyr Ala Ser Asp Gly Tyr Gly	
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cag aat ggg acc tgt aca gtt acc aga cgt cag aac acc att cag gag	240
Gln Asn Gly Thr Cys Thr Val Thr Arg Arg Gln Asn Thr Ile Gln Glu	
65 70 75 80	
ctt ctg caa aac tgt tcg gat tgc ctg atg aga gct gag ctc ata gta	288
Leu Leu Gln Asn Cys Ser Asp Cys Leu Met Arg Ala Glu Leu Ile Val	
85 90 95	
caa cct gaa ttg aaa tat ggt gat ggt gtc cag att aga gga aac aga	336
Gln Pro Glu Leu Lys Tyr Gly Asp Gly Val Gln Ile Arg Gly Asn Arg	
100 105 110	
gat ctg gaa gaa tgt ttt gcg cag gca aat gac caa atg gac atc ctg	384
Asp Leu Glu Glu Cys Phe Ala Gln Ala Asn Asp Gln Met Asp Ile Leu	
115 120 125	
gat ggg ctg atc cga gag cta agg cag atg aat cag ccc tgt gaa atg	432
Asp Gly Leu Ile Arg Glu Leu Arg Gln Met Asn Gln Pro Cys Glu Met	
130 135 140	
tat cag aaa agg ctg ctc caa ctt caa gag caa atg cga gct ctg tac	480
Tyr Gln Lys Arg Leu Leu Gln Leu Gln Met Arg Ala Leu Tyr	
145 150 155 160	
aaa gcc att agt gtt ccc cgt gcc agg agg gcc agc tcc aaa ggt ggt	528
Lys Ala Ile Ser Val Pro Arg Ala Arg Arg Ala Ser Ser Lys Gly Gly	
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ggt tgc tac tcc tct cag agt ggt tca ggc tgg gat gag tac aca aaa	576
Gly Cys Tyr Ser Ser Gln Ser Gly Ser Gly Trp Asp Glu Tyr Thr Lys	
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cgt gtg aca agt gaa tgc tta aat tgg atg agg caa cag aag gct gaa	624
Arg Val Thr Ser Glu Cys Leu Asn Trp Met Arg Gln Gln Lys Ala Glu	
195 200 205	
atg gag ctg gtg aaa tgg ggc ttt gat gca gca tct att gag caa cag	672
Met Glu Leu Val Lys Trp Gly Phe Asp Ala Ala Ser Ile Glu Gln Gln	
210 215 220	
att agt gac cat aga aga act cac aat gcc att gga gac tat cgc tgg	720
Ile Ser Asp His Arg Arg Thr His Asn Ala Ile Gly Asp Tyr Arg Trp	
225 230 235 240	
cac ctg gac aaa gtc aaa aca gat ctg cgt gag aag gct gcc gtt cac	768

His	Leu	Asp	Lys	Val	Lys	Thr	Asp	Leu	Arg	Glu	Lys	Ala	Ala	Val	His		
				245					250					255			
cag	ctg	gag	gaa	gaa	tac	gaa	gga	ctg	ctg	aaa	tac	tcc	ttt	gag	aga	816	
Gln	Leu	Glu	Glu	Glu	Tyr	Glu	Gly	Leu	Leu	Lys	Tyr	Ser	Phe	Glu	Arg		
			260					265					270				
atg	gat	cag	ctc	cgt	caa	ttc	cag	aac	ctt	atc	caa	gca	acc	agc	aga	864	
Met	Asp	Gln	Leu	Arg	Gln	Phe	Gln	Asn	Leu	Ile	Gln	Ala	Thr	Ser	Arg		
			275				280					285					
gag	atc	atg	tgg	atc	aat	gac	tgt	gag	gaa	gaa	gag	ctt	ctc	tac	gac	912	
Glu	Ile	Met	Trp	Ile	Asn	Asp	Cys	Glu	Glu	Glu	Glu	Leu	Leu	Tyr	Asp		
	290					295					300						
tgg	agc	gac	agg	aac	aca	gat	atc	tcc	agg	aag	cag	gag	gcc	ttc	tct	960	
Trp	Ser	Asp	Arg	Asn	Thr	Asp	Ile	Ser	Arg	Lys	Gln	Glu	Ala	Phe	Ser		
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aaa	cgt	atg	agt	gaa	ctg	gag	ctt	aaa	gaa	aaa	gaa	ctc	aac	aag	cta	1008	
Lys	Arg	Met	Ser	Glu	Leu	Glu	Leu	Lys	Glu	Lys	Glu	Leu	Asn	Lys	Leu		
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aag	caa	gaa	agt	gac	cag	ctt	gtg	ctc	aac	cag	cac	cct	gct	tca	gac	1056	
Lys	Gln	Glu	Ser	Asp	Gln	Leu	Val	Leu	Asn	Gln	His	Pro	Ala	Ser	Asp		
			340				345					350					
aaa	att	gag	gcc	tac	atg	gat	aca	cta	caa	act	cag	tgg	agc	tgg	att	1104	
Lys	Ile	Glu	Ala	Tyr	Met	Asp	Thr	Leu	Gln	Thr	Gln	Trp	Ser	Trp	Ile		
		355					360					365					
ctt	cag	atc	acg	aag	tgc	att	gat	gtt	cat	ttg	aaa	gag	aat	gca	gct	1152	
Leu	Gln	Ile	Thr	Lys	Cys	Ile	Asp	Val	His	Leu	Lys	Glu	Asn	Ala	Ala		
	370					375					380						
tac	ttt	cag	ttc	ttt	gag	gag	gcc	caa	gct	aca	gag	agc	tat	ctg	aag	1200	
Tyr	Phe	Gln	Phe	Phe	Glu	Glu	Ala	Gln	Ala	Thr	Glu	Ser	Tyr	Leu	Lys		
385					390				395					400			
aat	tta	cag	gac	tcc	atc	aga	aag	aag	ttc	ata	tgt	gat	aag	agc	atg	1248	
Asn	Leu	Gln	Asp	Ser	Ile	Arg	Lys	Lys	Phe	Ile	Cys	Asp	Lys	Ser	Met		
				405					410					415			
tca	ctt	cag	agc	ttg	ctg	gag	cag	atc	aaa	gag	ctg	gag	aat	gaa	cga	1296	
Ser	Leu	Gln	Ser	Leu	Leu	Glu	Gln	Ile	Lys	Glu	Leu	Glu	Asn	Glu	Arg		
			420					425					430				
gag	aga	att	ctt	gaa	tac	aag	agg	caa	gtg	cag	agt	ttg	gtg	aat	aaa	1344	
Glu	Arg	Ile	Leu	Glu	Tyr	Lys	Arg	Gln	Val	Gln	Ser	Leu	Val	Asn	Lys		
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tcc	aag	aag	att	gtg	cag	ctg	aag	cca	cgt	aac	cca	gat	tac	cgg	agt	1392	
Ser	Lys	Lys	Ile	Val	Gln	Leu	Lys	Pro	Arg	Asn	Pro	Asp	Tyr	Arg	Ser		
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aac	aag	ccc	att	atc	ctc	aag	gct	cta	tgt	gac	tac	aaa	cag	gat	ctg	1440	
Asn	Lys	Pro	Ile	Ile	Leu	Lys	Ala	Leu	Cys	Asp	Tyr	Lys	Gln	Asp	Leu		
465					470				475						480		
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Lys	Thr	Val	Arg	Lys	Gly	Asp	Glu	Cys	Ile	Leu	Lys	Asp	Asn	Asn	Glu		
				485					490					495			
cgc	agc	aag	tgg	ttg	gtg	act	ggc	cct	gga	gga	gtg	gat	atg	ctg	gtg	1536	
Arg	Ser	Lys	Trp	Leu	Val	Thr	Gly	Pro	Gly	Gly	Val	Asp	Met	Leu	Val		
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cca	tct	gtt	agt	ctg	atc	atc	cca	ccc	cca	aat	cca	tta	gca	gtg	gat	1584	
Pro	Ser	Val	Ser	Leu	Ile	Ile	Pro	Pro	Pro	Asn	Pro	Leu	Ala	Val	Asp		

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ctt gct acc aaa att gag caa tac tac gaa gct att ctg gct ttg tgg			1632
Leu Ala Thr Lys Ile Glu Gln Tyr Tyr Glu Ala Ile Leu Ala Leu Trp			
530	535	540	
aac cag ctg tat atc aac atg aag agc ctg gta tct tgg cat tat tgc			1680
Asn Gln Leu Tyr Ile Asn Met Lys Ser Leu Val Ser Trp His Tyr Cys			
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atg att gac att gag aaa atc aga gcg atg act att gct aag ctg aaa			1728
Met Ile Asp Ile Glu Lys Ile Arg Ala Met Thr Ile Ala Lys Leu Lys			
565	570	575	
aca atg cgt aag gaa gat tac caa aaa ata ata act gac ttg gag atc			1776
Thr Met Arg Lys Glu Asp Tyr Gln Lys Ile Ile Thr Asp Leu Glu Ile			
580	585	590	
cat tat caa gaa ttc ctc agg aac agc caa ggc tct gag atg ttt ggt			1824
His Tyr Gln Glu Phe Leu Arg Asn Ser Gln Gly Ser Glu Met Phe Gly			
595	600	605	
gat gaa gac aaa cga aag atc cag acg cag ttc act gat gct cag aaa			1872
Asp Glu Asp Lys Arg Lys Ile Gln Thr Gln Phe Thr Asp Ala Gln Lys			
610	615	620	
cac tac caa acc tta ata ata caa cta ccc aat caa cca cgg cca ccc			1920
His Tyr Gln Thr Leu Ile Ile Gln Leu Pro Asn Gln Pro Arg Pro Pro			
625	630	635	640
cag aca gtg att cca act gag agt tgt cct gtg ggt acc tca aac acc			1968
Gln Thr Val Ile Pro Thr Glu Ser Cys Pro Val Gly Thr Ser Asn Thr			
645	650	655	
att ata gtt aat gag aga aac cga gaa cat gat aaa cag gag gct tgg			2016
Ile Ile Val Asn Glu Arg Asn Arg Glu His Asp Lys Gln Glu Ala Trp			
660	665	670	
ctg ctg atg gaa ctt cag aaa ctt cgg cgt cag att gaa gct tct gag			2064
Leu Leu Met Glu Leu Gln Lys Leu Arg Arg Gln Ile Glu Ala Ser Glu			
675	680	685	
att cga atg gtt caa aga gct cca ctt ggt gtg gat caa ggg gct ctg			2112
Ile Arg Met Val Gln Arg Ala Pro Leu Gly Val Asp Gln Gly Ala Leu			
690	695	700	
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His Asp Phe Ser Val Arg Ile Gln Asp Leu Glu Gly Val Gln Asn Asp			
705	710	715	720
tct caa ata atg gct gaa acc ctc aat aag cat aag gac ttg ctg cct			2208
Ser Gln Ile Met Ala Glu Thr Leu Asn Lys His Lys Asp Leu Leu Pro			
725	730	735	
aac ttc aga ggc tgt gaa aag tat gtg tac ttg caa tca gag ata aat			2256
Asn Phe Arg Gly Cys Glu Lys Tyr Val Tyr Leu Gln Ser Glu Ile Asn			
740	745	750	
gcc ctg ttt caa aaa ctg gaa aac att aat ggt gtt tct gct ggc tac			2304
Ala Leu Phe Gln Lys Leu Glu Asn Ile Asn Gly Val Ser Ala Gly Tyr			
755	760	765	
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Leu Asp Ser Leu Asn Ala Leu Arg Cys Leu Leu Gln Leu Ile Leu Gln			
770	775	780	
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Thr Glu Asp Val Ile Arg Val Phe Glu Val Arg Leu Ser Glu Glu Glu			
785	790	795	800

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Lys	Lys	Met	Lys	Ser	Asp	Leu	Asn	Met	Lys	Lys	Ser	Leu	Leu	Asn	Thr	
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Leu	Glu	Asn	Glu	Leu	Gln	Lys	Met	Ile	Gln	Ile	His	Ser	Gln	Ser	Cys	
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Gln	Ser	Tyr	Thr	Leu	Tyr	Asp	Met	Asp	Val	Gly	Lys	Phe	Thr	Asp	Lys	
	850					855					860					
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Val	Thr	Gln	Leu	Ile	Asp	Arg	Trp	Gln	Arg	Ala	Glu	Lys	Gln	Ile	Asp	
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Asn	Arg	Ser	Trp	Asp	Leu	Glu	Arg	Gln	Ile	Lys	Gln	Leu	Lys	Thr	Tyr	
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Arg	Asp	Leu	Tyr	Gln	Ala	Leu	Cys	Lys	Trp	Ile	Cys	Asp	Ala	Lys	Arg	
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Arg	Gln	Asp	Ser	Ile	Glu	Ser	Thr	Lys	Leu	Cys	Asp	Ser	Asn	Thr	Ile	
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Met	Arg	Tyr	Leu	His	Asp	Gln	Lys	Asn	Leu	His	Ser	Glu	Ile	Cys	Gly	
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Lys	Arg	Asp	Lys	Val	Glu	Glu	Leu	Leu	Lys	His	Ala	Asp	Gln	Cys	Ser	
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gct	gca	att	aag	gat	tat	gag	ctt	cag	gtt	gct	tcc	tac	agt	tct	gga	2928
Ala	Ala	Ile	Lys	Asp	Tyr	Glu	Leu	Gln	Val	Ala	Ser	Tyr	Ser	Ser	Gly	
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tta	gaa	acg	ttg	ctc	aac	ata	cct	atc	aag	aag	tgt	gtg	gtt	cag	tct	2976
Leu	Glu	Thr	Leu	Leu	Asn	Ile	Pro	Ile	Lys	Lys	Cys	Val	Val	Gln	Ser	
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cca	gca	gtg	ctg	att	ctg	caa	gag	gct	agt	gag	gct	cag	gct	cgc	tac	3024
Pro	Ala	Val	Leu	Ile	Leu	Gln	Glu	Ala	Ser	Glu	Ala	Gln	Ala	Arg	Tyr	
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Ile	Glu	Leu	Leu	Thr	Arg	Ser	Gly	Asp	Tyr	Tyr	Lys	Phe	Leu	Ser		
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gaa	atg	tta	aag	agc	atg	gag	gac	ctg	aag	atg	aaa	gcc	acc	aaa		3114
Glu	Met	Leu	Lys	Ser	Met	Glu	Asp	Leu	Lys	Met	Lys	Ala	Thr	Lys		
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Ile	Glu	Leu	Leu	Glu	Glu	Glu	Leu	Arg	Leu	Ala	Arg	Asp	Ser	Asn		
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tca	gaa	aca	aac	aac	aag	cat	aaa	ttc	ctg	gaa	cag	aat	ctg	cag		3204
Ser	Glu	Thr	Asn	Asn	Lys	His	Lys	Phe	Leu	Glu	Gln	Asn	Leu	Gln		
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ttg Leu	gag Glu 1085	gag Glu	atg Met	aaa Lys	aga Arg	cag Gln 1090	gct Ala	gaa Glu	atg Met	gat Asp	gga Gly 1095	aat Asn	tct Ser	gct Ala	3294
aag Lys	caa Gln 1100	aac Asn	ctg Leu	gac Asp	aaa Lys	tgc Cys 1105	tat Tyr	gcc Ala	caa Gln	ata Ile	aag Lys 1110	gat Asp	cta Leu	aat Asn	3339
gac Asp	aga Arg 1115	ata Ile	acc Thr	agg Arg	ttg Leu	act Thr 1120	tac Tyr	gag Glu	act Thr	gaa Glu	gat Asp 1125	gag Glu	aaa Lys	agg Arg	3384
aaa Lys	agg Arg 1130	aag Lys	ttg Leu	ctg Leu	gag Glu	gac Asp 1135	aga Arg	tat Tyr	gag Glu	caa Gln	caa Gln 1140	aag Lys	aat Asn	gac Asp	3429
tac Tyr	gac Asp 1145	cag Gln	ctg Leu	cag Gln	aaa Lys	aca Thr 1150	aga Arg	caa Gln	aac Asn	gag Glu	aaa Lys 1155	gac Asp	agc Ser	ctt Leu	3474
ggc Gly	tgg Trp 1160	cag Gln	aag Lys	tta Leu	gaa Glu	tct Ser 1165	gag Glu	aag Lys	gtc Val	atc Ile	aag Lys 1170	gag Glu	aag Lys	gag Glu	3519
tac Tyr	gag Glu 1175	ata Ile	gaa Glu	aga Arg	tta Leu	agg Arg 1180	gtt Val	ctc Leu	ctg Leu	cag Gln	gat Asp 1185	gaa Glu	ggc Gly	aca Thr	3564
cgg Arg	aag Lys 1190	agg Arg	gag Glu	tat Tyr	gaa Glu	aat Asn 1195	gag Glu	ctg Leu	gct Ala	aag Lys	gta Val 1200	aga Arg	aac Asn	cag Gln	3609
ttt Phe	agc Ser 1205	gag Glu	gag Glu	atg Met	agt Ser	aat Asn 1210	tta Leu	aag Lys	aac Asn	aag Lys	tat Tyr 1215	gaa Glu	aca Thr	gaa Glu	3654
att Ile	aat Asn 1220	att Ile	aag Lys	aag Lys	acc Thr	aca Thr 1225	atc Ile	cag Gln	cag Gln	ata Ile	gct Ala 1230	gca Ala	cag Gln	aaa Lys	3699
gat Asp	gat Asp 1235	gat Asp	gca Ala	aaa Lys	ggc Gly	ctc Leu 1240	aga Arg	gcc Ala	cag Gln	gtt Val	gac Asp 1245	aga Arg	ctg Leu	tca Ser	3744
aga Arg	gaa Glu 1250	aac Asn	aga Arg	gac Asp	ctt Leu	aag Lys 1255	gat Asp	gag Glu	att Ile	gtg Val	agg Arg 1260	ctg Leu	aac Asn	gat Asp	3789
gcc Ala	att Ile 1265	ctg Leu	caa Gln	acc Thr	aca Thr	gat Asp 1270	cag Gln	cgg Arg	agg Arg	agg Arg	gca Ala 1275	gaa Glu	gaa Glu	gat Asp	3834
gct Ala	ctt Leu 1280	cag Gln	cag Gln	aag Lys	gct Ala	tgc Cys 1285	agt Ser	tct Ser	gag Glu	gtg Val	tcg Ser 1290	cag Gln	cag Gln	aag Lys	3879
cac His	cag Gln 1295	tta Leu	gag Glu	ctg Leu	gag Glu	ctg Leu 1300	aaa Lys	cag Gln	atc Ile	att Ile	cag Gln 1305	ctt Leu	cgt Arg	ggc Gly	3924
gaa Glu	gac Asp 1310	aac Asn	tca Ser	aga Arg	tac Tyr	aag Lys 1315	cag Gln	gct Ala	ctt Leu	gaa Glu	gag Glu 1320	gct Ala	gct Ala	gct Ala	3969
act	att	cag	gat	aaa	act	aag	gag	ctg	gaa	agg	cta	aag	ctt	cag	4014

Thr	Ile	Gln	Asp	Lys	Thr	Lys	Glu	Leu	Glu	Arg	Leu	Lys	Leu	Gln	
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ctt	cag	gaa	gaa	gct	aaa	agc	cga	tgg	gag	ctt	gaa	aat	gag	ttg	4059
Leu	Gln	Glu	Glu	Ala	Lys	Ser	Arg	Trp	Glu	Leu	Glu	Asn	Glu	Leu	
	1340					1345					1350				
gct	aag	gta	agg	aac	agt	tat	gat	gag	gaa	att	att	agc	tta	aag	4104
Ala	Lys	Val	Arg	Asn	Ser	Tyr	Asp	Glu	Glu	Ile	Ile	Ser	Leu	Lys	
	1355					1360					1365				
aac	aaa	tat	gaa	aca	gag	att	aat	atc	aca	aag	acc	aca	att	cat	4149
Asn	Lys	Tyr	Glu	Thr	Glu	Ile	Asn	Ile	Thr	Lys	Thr	Thr	Ile	His	
	1370					1375					1380				
cag	gtc	act	atg	caa	aag	gaa	gag	gat	acc	aat	aat	tat	aga	aca	4194
Gln	Val	Thr	Met	Gln	Lys	Glu	Glu	Asp	Thr	Asn	Asn	Tyr	Arg	Thr	
	1385					1390					1395				
cag	ctt	gat	aat	gct	gtg	aga	gaa	aat	agg	aat	ttg	tgt	gag	gaa	4239
Gln	Leu	Asp	Asn	Ala	Val	Arg	Glu	Asn	Arg	Asn	Leu	Cys	Glu	Glu	
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att	agg	aga	ctg	aag	aat	aca	ata	act	caa	aca	aca	gat	aat	cta	4284
Ile	Arg	Arg	Leu	Lys	Asn	Thr	Ile	Thr	Gln	Thr	Thr	Asp	Asn	Leu	
	1415					1420					1425				
cgg	aaa	ata	gaa	gag	aat	gct	cag	cag	caa	aag	gca	gct	ggc	tca	4329
Arg	Lys	Ile	Glu	Glu	Asn	Ala	Gln	Gln	Gln	Lys	Ala	Ala	Gly	Ser	
	1430					1435					1440				
gag	ctt	tct	cag	aag	aaa	cag	cag	ctg	gag	att	gaa	cta	aaa	caa	4374
Glu	Leu	Ser	Gln	Lys	Lys	Gln	Gln	Leu	Glu	Ile	Glu	Leu	Lys	Gln	
	1445					1450					1455				
gtt	att	cag	agg	cac	tct	gac	gag	agc	atg	cga	tac	aaa	caa	tcg	4419
Val	Ile	Gln	Arg	His	Ser	Asp	Glu	Ser	Met	Arg	Tyr	Lys	Gln	Ser	
	1460					1465					1470				
ctt	gat	gat	gct	tct	aag	acc	att	aaa	gag	aga	aac	aaa	gag	att	4464
Leu	Asp	Asp	Ala	Ser	Lys	Thr	Ile	Lys	Glu	Arg	Asn	Lys	Glu	Ile	
	1475					1480					1485				
gaa	agg	ctg	aga	aag	ttg	ttg	gat	atc	caa	aaa	cat	aag	ctg	gag	4509
Glu	Arg	Leu	Arg	Lys	Leu	Leu	Asp	Ile	Gln	Lys	His	Lys	Leu	Glu	
	1490					1495					1500				
gag	gaa	ctt	tgc	agg	cag	aat	aag	aat	gtg	atg	gag	gag	aca	gcc	4554
Glu	Glu	Leu	Cys	Arg	Gln	Asn	Lys	Asn	Val	Met	Glu	Glu	Thr	Ala	
	1505					1510					1515				
agg	agg	aag	aaa	ctg	gac	gag	gaa	gta	gaa	ggc	atg	agg	aga	tct	4599
Arg	Arg	Lys	Lys	Leu	Asp	Glu	Glu	Val	Glu	Gly	Met	Arg	Arg	Ser	
	1520					1525					1530				
ctg	aga	gag	caa	tca	gtt	aaa	ata	act	aat	ctc	aca	cag	cag	ata	4644
Leu	Arg	Glu	Gln	Ser	Val	Lys	Ile	Thr	Asn	Leu	Thr	Gln	Gln	Ile	
	1535					1540					1545				
gag	gaa	gtg	tct	att	gta	aag	aag	aga	aat	gaa	gat	gac	ctt	aga	4689
Glu	Glu	Val	Ser	Ile	Val	Lys	Lys	Arg	Asn	Glu	Asp	Asp	Leu	Arg	
	1550					1555					1560				
cac	caa	aga	gaa	gta	cta	gat	ggc	cac	gtg	aga	gag	aaa	caa	agg	4734
His	Gln	Arg	Glu	Val	Leu	Asp	Gly	His	Val	Arg	Glu	Lys	Gln	Arg	
	1565					1570					1575				
tac	atg	gag	gag	ata	aga	aaa	tac	acc	tct	gat	ctt	gag	act	tta	4779
Tyr	Met	Glu	Glu	Ile	Arg	Lys	Tyr	Thr	Ser	Asp	Leu	Glu	Thr	Leu	

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1580	1585	1590	
cgt Arg 1595	cag Gln 1600	aaa Lys 1605	4824
ctg Leu 1610	cag Gln 1615	gag Glu 1620	4869
aac Asn 1625	att Ile 1630	ctt Leu 1635	4914
acc Thr 1640	gaa Glu 1645	gag Glu 1650	4959
cga Arg 1655	tat Tyr 1660	atg Met 1665	5004
gaa Glu 1670	tct Ser 1675	cta Leu 1680	5049
ctt Leu 1685	caa Gln 1690	cag Gln 1695	5094
aat Asn 1700	agg Arg 1705	cag Gln 1710	5139
aaa Lys 1715	ctg Leu 1720	agg Arg 1725	5184
tcc Ser 1730	cac His 1735	aga Arg 1740	5229
ctg Leu 1745	ctg Leu 1750	gcc Ala 1755	5274
aga Arg 1760	aac Asn 1765	aac Asn 1770	5319
gag Glu 1775	cgc Arg 1780	aaa Lys 1785	5364
ctg Leu 1790	tgg Trp 1795	tcc Ser 1800	5409
gaa Glu 1805	cag Gln 1810	aag Lys 1815	5454
gag Glu 1820	agt Ser 1825	ctg Leu 1830	5499
att Ile 1835	aga Arg 1840	ctg Leu 1845	5544

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gct Ala	gtc Val 1850	aaa Lys	aac Asn	cag Gln	tca Ser	gag Glu 1855	ttg Leu	gag Glu	tct Ser	gaa Glu	cg Arg 1860	ctc Leu	agg Arg	ctg Leu	5589
cag Gln	aga Arg 1865	gag Glu	att Ile	gag Glu	aaa Lys	ctt Leu 1870	aaa Lys	caa Gln	cg Arg	cca Pro	tat Tyr 1875	ggg Gly	tct Ser	cac His	5634
aga Arg	tct Ser 1880	act Thr	cag Gln	act Thr	gaa Glu	gaa Glu 1885	gac Asp	ttc Phe	tgt Cys	att Ile	gat Asp 1890	gcc Ala	tcc Ser	aag Lys	5679
ttg Leu	ctg Leu 1895	ttc Phe	aat Asn	ggg Gly	ctg Leu	cg Arg 1900	aag Lys	aaa Lys	att Ile	aca Thr	gca Ala 1905	atg Met	cag Gln	cta Leu	5724
tat Tyr	gaa Glu 1910	tgt Cys	cag Gln	ctt Leu	ata Ile	gac Asp 1915	aaa Lys	ctc Leu	act Thr	ctg Leu	gat Asp 1920	aaa Lys	ttg Leu	ctg Leu	5769
aag Lys	ggg Gly 1925	cag Gln	agg Arg	tca Ser	gta Val	gaa Glu 1930	gaa Glu	gtt Val	gct Ala	gct Ala	gac Asp 1935	att Ile	gaa Glu	ccc Pro	5814
ttt Phe	ctg Leu 1940	aaa Lys	ggg Gly	gca Ala	ggg Gly	gct Ala 1945	att Ile	gca Ala	gga Gly	gtg Val	tct Ser 1950	gtt Val	tta Leu	ccc Pro	5859
aga Arg	cag Gln 1955	aag Lys	tac Tyr	tcc Ser	ttt Phe	gtt Val 1960	gag Glu	gcc Ala	aaa Lys	cg Arg	aac Asn 1965	cag Gln	ctg Leu	ctt Leu	5904
acg Thr	gag Ala 1970	gaa Glu	aat Asn	gca Ala	gtc Val	ctg Leu 1975	ctc Leu	ttg Leu	gaa Glu	gcc Ala	cag Gln 1980	gca Ala	gca Ala	aca Thr	5949
gga Gly	gga Gly 1985	gtg Val	ata Ile	gat Asp	cca Pro	cac His 1990	cg Arg	aat Asn	gag Glu	gtg Val	tta Leu 1995	aca Thr	gtg Val	gac Asp	5994
agt Ser	gct Ala 2000	att Ile	gcc Ala	aga Arg	gat Asp	ctg Leu 2005	att Ile	gac Asp	ttt Phe	gat Asp	gac Asp 2010	aga Arg	gaa Glu	caa Gln	6039
atc Ile	tat Tyr 2015	aca Thr	gca Ala	gaa Glu	aag Lys	gct Ala 2020	att Ile	aca Thr	ggg Gly	ttt Phe	aaa Lys 2025	gat Asp	cct Pro	ttc Phe	6084
tca Ser	ggc Gly 2030	aaa Lys	act Thr	gtg Val	cca Pro	cta Leu 2035	tct Ser	gaa Glu	gcc Ala	atc Ile	aag Lys 2040	aaa Lys	aac Asn	ttg Leu	6129
gtt Val	gac Asp 2045	aga Arg	gaa Glu	att Ile	ggg Gly	atg Met 2050	cg Arg	ctg Leu	ctt Leu	gaa Glu	gcc Ala 2055	cag Gln	ctg Leu	gct Ala	6174
gtg Val	gga Gly 2060	ggg Gly	att Ile	gtt Val	gat Asp	cct Pro 2065	gtc Val	aac Asn	agt Ser	gtt Val	ttc Phe 2070	cta Leu	ccc Pro	aaa Lys	6219
gat Asp	gta Val 2075	gct Ala	tta Leu	tcc Ser	cg Arg	gga Gly 2080	ttg Leu	att Ile	gac Asp	aaa Lys	gat Asp 2085	ctg Leu	tac Tyr	agg Arg	6264
att Ile	cta Leu 2090	aac Asn	aac Asn	tgc Cys	caa Gln	agt Ser 2095	acc Thr	aca Thr	aag Lys	aac Asn	ttc Phe 2100	att Ile	gat Asp	ccc Pro	6309



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agc acc aaa aaa gca gtc act tac atg cag cta aag gaa aaa tgc	6354
Ser Thr Lys Lys Ala Val Thr Tyr Met Gln Leu Lys Glu Lys Cys	
2105 2110 2115	
agg att gag cca cat act ggc ttg ctc ctc ctt cca gtg cag aag	6399
Arg Ile Glu Pro His Thr Gly Leu Leu Leu Leu Pro Val Gln Lys	
2120 2125 2130	
agg agt atg tca ttc caa ggg atc agg cag cct gtc tca gca gat	6444
Arg Ser Met Ser Phe Gln Gly Ile Arg Gln Pro Val Ser Ala Asp	
2135 2140 2145	
gct ctt ctt gag gct gga att att aag gaa tca aca aga aat gat	6489
Ala Leu Leu Glu Ala Gly Ile Ile Lys Glu Ser Thr Arg Asn Asp	
2150 2155 2160	
ttg gaa aga ggt gca atc aca gtg gaa gaa gtg agt gag agg att	6534
Leu Glu Arg Gly Ala Ile Thr Val Glu Glu Val Ser Glu Arg Ile	
2165 2170 2175	
att gat ttc ctt cag ggc tct agc tgt att gca ggt atc tac aat	6579
Ile Asp Phe Leu Gln Gly Ser Ser Cys Ile Ala Gly Ile Tyr Asn	
2180 2185 2190	
gag gct act aaa gag aaa ctt ggc att tac cag gct atg aaa ata	6624
Glu Ala Thr Lys Glu Lys Leu Gly Ile Tyr Gln Ala Met Lys Ile	
2195 2200 2205	
ggc ttg gtt aga cca gag ctg tca ctg ggt aca aag acc cag aaa	6669
Gly Leu Val Arg Pro Glu Leu Ser Leu Gly Thr Lys Thr Gln Lys	
2210 2215 2220	
ctg gaa aca tca ttt ctc tgt ttc aag caa tga	6702
Leu Glu Thr Ser Phe Leu Cys Phe Lys Gln	
2225 2230	

<210> 48  
 <211> 2233  
 <212> PRT  
 <213> Gallus gallus  
 <400> 48

Met Ser Met Asn Gly Gly Ser His Pro Arg Ile Asn Thr Leu Gly Arg  
 1 5 10 15

Met Ala Arg Ala Asp Ser Gly Thr Asp Leu Arg Tyr Glu Met Ser Ser  
 20 25 30

His Val Val Gly Gly Gly Gly Gly Gly Thr His Thr His Lys Thr Tyr  
 35 40 45

Tyr Tyr Gln Lys Thr Tyr Gly Gly Asp Tyr Ala Ser Asp Gly Tyr Gly  
 50 55 60

Gln Asn Gly Thr Cys Thr Val Thr Arg Arg Gln Asn Thr Ile Gln Glu  
 65 70 75 80

Leu Leu Gln Asn Cys Ser Asp Cys Leu Met Arg Ala Glu Leu Ile Val  
 85 90 95

Gln Pro Glu Leu Lys Tyr Gly Asp Gly Val Gln Ile Arg Gly Asn Arg

Asp Leu Glu Glu Cys Phe Ala Gln Ala Asn Asp Gln Met Asp Ile Leu  
115 120 125

Asp Gly Leu Ile Arg Glu Leu Arg Gln Met Asn Gln Pro Cys Glu Met  
130 135 140

Tyr Gln Lys Arg Leu Leu Gln Leu Gln Glu Gln Met Arg Ala Leu Tyr  
145 150 155 160

Lys Ala Ile Ser Val Pro Arg Ala Arg Arg Ala Ser Ser Lys Gly Gly  
165 170 175

Gly Cys Tyr Ser Ser Gln Ser Gly Ser Gly Trp Asp Glu Tyr Thr Lys  
180 185 190

Arg Val Thr Ser Glu Cys Leu Asn Trp Met Arg Gln Gln Lys Ala Glu  
195 200 205

Met Glu Leu Val Lys Trp Gly Phe Asp Ala Ala Ser Ile Glu Gln Gln  
210 215 220

Ile Ser Asp His Arg Arg Thr His Asn Ala Ile Gly Asp Tyr Arg Trp  
225 230 235 240

His Leu Asp Lys Val Lys Thr Asp Leu Arg Glu Lys Ala Ala Val His  
245 250 255

Gln Leu Glu Glu Glu Tyr Glu Gly Leu Leu Lys Tyr Ser Phe Glu Arg  
260 265 270

Met Asp Gln Leu Arg Gln Phe Gln Asn Leu Ile Gln Ala Thr Ser Arg  
275 280 285

Glu Ile Met Trp Ile Asn Asp Cys Glu Glu Glu Glu Leu Leu Tyr Asp  
290 295 300

Trp Ser Asp Arg Asn Thr Asp Ile Ser Arg Lys Gln Glu Ala Phe Ser  
305 310 315 320

Lys Arg Met Ser Glu Leu Glu Leu Lys Glu Lys Glu Leu Asn Lys Leu  
325 330 335

Lys Gln Glu Ser Asp Gln Leu Val Leu Asn Gln His Pro Ala Ser Asp  
340 345 350

Lys Ile Glu Ala Tyr Met Asp Thr Leu Gln Thr Gln Trp Ser Trp Ile  
355 360 365

Leu Gln Ile Thr Lys Cys Ile Asp Val His Leu Lys Glu Asn Ala Ala  
370 375 380

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Tyr Phe Gln Phe Phe Glu Glu Ala Gln Ala Thr Glu Ser Tyr Leu Lys  
 385 390 395 400  
 Asn Leu Gln Asp Ser Ile Arg Lys Lys Phe Ile Cys Asp Lys Ser Met  
 405 410 415  
 Ser Leu Gln Ser Leu Leu Glu Gln Ile Lys Glu Leu Glu Asn Glu Arg  
 420 425 430  
 Glu Arg Ile Leu Glu Tyr Lys Arg Gln Val Gln Ser Leu Val Asn Lys  
 435 440 445  
 Ser Lys Lys Ile Val Gln Leu Lys Pro Arg Asn Pro Asp Tyr Arg Ser  
 450 455 460  
 Asn Lys Pro Ile Ile Leu Lys Ala Leu Cys Asp Tyr Lys Gln Asp Leu  
 465 470 475 480  
 Lys Thr Val Arg Lys Gly Asp Glu Cys Ile Leu Lys Asp Asn Asn Glu  
 485 490 495  
 Arg Ser Lys Trp Leu Val Thr Gly Pro Gly Gly Val Asp Met Leu Val  
 500 505 510  
 Pro Ser Val Ser Leu Ile Ile Pro Pro Pro Asn Pro Leu Ala Val Asp  
 515 520 525  
 Leu Ala Thr Lys Ile Glu Gln Tyr Tyr Glu Ala Ile Leu Ala Leu Trp  
 530 535 540  
 Asn Gln Leu Tyr Ile Asn Met Lys Ser Leu Val Ser Trp His Tyr Cys  
 545 550 555 560  
 Met Ile Asp Ile Glu Lys Ile Arg Ala Met Thr Ile Ala Lys Leu Lys  
 565 570 575  
 Thr Met Arg Lys Glu Asp Tyr Gln Lys Ile Ile Thr Asp Leu Glu Ile  
 580 585 590  
 His Tyr Gln Glu Phe Leu Arg Asn Ser Gln Gly Ser Glu Met Phe Gly  
 595 600 605  
 Asp Glu Asp Lys Arg Lys Ile Gln Thr Gln Phe Thr Asp Ala Gln Lys  
 610 615 620  
 His Tyr Gln Thr Leu Ile Ile Gln Leu Pro Asn Gln Pro Arg Pro Pro  
 625 630 635 640  
 Gln Thr Val Ile Pro Thr Glu Ser Cys Pro Val Gly Thr Ser Asn Thr  
 645 650 655

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Ile Ile Val Asn Glu Arg Asn Arg Glu His Asp Lys Gln Glu Ala Trp  
660 665 670

Leu Leu Met Glu Leu Gln Lys Leu Arg Arg Gln Ile Glu Ala Ser Glu  
675 680 685

Ile Arg Met Val Gln Arg Ala Pro Leu Gly Val Asp Gln Gly Ala Leu  
690 695 700

His Asp Phe Ser Val Arg Ile Gln Asp Leu Glu Gly Val Gln Asn Asp  
705 710 715 720

Ser Gln Ile Met Ala Glu Thr Leu Asn Lys His Lys Asp Leu Leu Pro  
725 730 735

Asn Phe Arg Gly Cys Glu Lys Tyr Val Tyr Leu Gln Ser Glu Ile Asn  
740 745 750

Ala Leu Phe Gln Lys Leu Glu Asn Ile Asn Gly Val Ser Ala Gly Tyr  
755 760 765

Leu Asp Ser Leu Asn Ala Leu Arg Cys Leu Leu Gln Leu Ile Leu Gln  
770 775 780

Thr Glu Asp Val Ile Arg Val Phe Glu Val Arg Leu Ser Glu Glu Glu  
785 790 795 800

Thr Val Pro Leu Asp Leu Asp Lys Val Glu Ala Tyr Arg Ala Cys Leu  
805 810 815

Lys Lys Met Lys Ser Asp Leu Asn Met Lys Lys Ser Leu Leu Asn Thr  
820 825 830

Leu Glu Asn Glu Leu Gln Lys Met Ile Gln Ile His Ser Gln Ser Cys  
835 840 845

Gln Ser Tyr Thr Leu Tyr Asp Met Asp Val Gly Lys Phe Thr Asp Lys  
850 855 860

Val Thr Gln Leu Ile Asp Arg Trp Gln Arg Ala Glu Lys Gln Ile Asp  
865 870 875 880

Asn Arg Ser Trp Asp Leu Glu Arg Gln Ile Lys Gln Leu Lys Thr Tyr  
885 890 895

Arg Asp Leu Tyr Gln Ala Leu Cys Lys Trp Ile Cys Asp Ala Lys Arg  
900 905 910

Arg Gln Asp Ser Ile Glu Ser Thr Lys Leu Cys Asp Ser Asn Thr Ile  
915 920 925

Met Arg Tyr Leu His Asp Gln Lys Asn Leu His Ser Glu Ile Cys Gly  
 930 935 940

Lys Arg Asp Lys Val Glu Glu Leu Leu Lys His Ala Asp Gln Cys Ser  
 945 950 955 960

Ala Ala Ile Lys Asp Tyr Glu Leu Gln Val Ala Ser Tyr Ser Ser Gly  
 965 970 975

Leu Glu Thr Leu Leu Asn Ile Pro Ile Lys Lys Cys Val Val Gln Ser  
 980 985 990

Pro Ala Val Leu Ile Leu Gln Glu Ala Ser Glu Ala Gln Ala Arg Tyr  
 995 1000 1005

Ile Glu Leu Leu Thr Arg Ser Gly Asp Tyr Tyr Lys Phe Leu Ser  
 1010 1015 1020

Glu Met Leu Lys Ser Met Glu Asp Leu Lys Met Lys Ala Thr Lys  
 1025 1030 1035

Ile Glu Leu Leu Glu Glu Glu Leu Arg Leu Ala Arg Asp Ser Asn  
 1040 1045 1050

Ser Glu Thr Asn Asn Lys His Lys Phe Leu Glu Gln Asn Leu Gln  
 1055 1060 1065

Lys Tyr Gln Met Asp Ile Ser Gln Leu Lys Ala Lys Leu Met Ser  
 1070 1075 1080

Leu Glu Glu Met Lys Arg Gln Ala Glu Met Asp Gly Asn Ser Ala  
 1085 1090 1095

Lys Gln Asn Leu Asp Lys Cys Tyr Ala Gln Ile Lys Asp Leu Asn  
 1100 1105 1110

Asp Arg Ile Thr Arg Leu Thr Tyr Glu Thr Glu Asp Glu Lys Arg  
 1115 1120 1125

Lys Arg Lys Leu Leu Glu Asp Arg Tyr Glu Gln Gln Lys Asn Asp  
 1130 1135 1140

Tyr Asp Gln Leu Gln Lys Thr Arg Gln Asn Glu Lys Asp Ser Leu  
 1145 1150 1155

Gly Trp Gln Lys Leu Glu Ser Glu Lys Val Ile Lys Glu Lys Glu  
 1160 1165 1170

Tyr Glu Ile Glu Arg Leu Arg Val Leu Leu Gln Asp Glu Gly Thr  
 1175 1180 1185

Arg Lys Arg Glu Tyr Glu Asn Glu Leu Ala Lys Val Arg Asn Gln  
 1190 1195



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Val	Ile	Gln	Arg	His	Ser	Asp	Glu	Ser	Met	Arg	Tyr	Lys	Gln	Ser
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Leu	Asp	Asp	Ala	Ser	Lys	Thr	Ile	Lys	Glu	Arg	Asn	Lys	Glu	Ile
	1475					1480					1485			
Glu	Arg	Leu	Arg	Lys	Leu	Leu	Asp	Ile	Gln	Lys	His	Lys	Leu	Glu
	1490					1495					1500			
Glu	Glu	Leu	Cys	Arg	Gln	Asn	Lys	Asn	Val	Met	Glu	Glu	Thr	Ala
	1505					1510					1515			
Arg	Arg	Lys	Lys	Leu	Asp	Glu	Glu	Val	Glu	Gly	Met	Arg	Arg	Ser
	1520					1525					1530			
Leu	Arg	Glu	Gln	Ser	Val	Lys	Ile	Thr	Asn	Leu	Thr	Gln	Gln	Ile
	1535					1540					1545			
Glu	Glu	Val	Ser	Ile	Val	Lys	Lys	Arg	Asn	Glu	Asp	Asp	Leu	Arg
	1550					1555					1560			
His	Gln	Arg	Glu	Val	Leu	Asp	Gly	His	Val	Arg	Glu	Lys	Gln	Arg
	1565					1570					1575			
Tyr	Met	Glu	Glu	Ile	Arg	Lys	Tyr	Thr	Ser	Asp	Leu	Glu	Thr	Leu
	1580					1585					1590			
Arg	Arg	Gln	Leu	Val	Gln	Glu	Gln	Glu	Gln	Leu	Lys	Gln	Ala	His
	1595					1600					1605			
Leu	Arg	Asn	Glu	His	Leu	Gln	Lys	Thr	Ser	Glu	Glu	Lys	Ser	Lys
	1610					1615					1620			
Asn	Leu	Asn	Glu	Cys	Lys	Ile	Glu	Ile	Glu	Arg	Leu	Gln	Ser	Leu
	1625					1630					1635			
Thr	Glu	Asn	Leu	Thr	Lys	Glu	His	Leu	Leu	Leu	Glu	Glu	Glu	Leu
	1640					1645					1650			
Arg	Asn	Val	Arg	Leu	Glu	Tyr	Asp	Asp	Leu	Lys	Met	Val	Arg	Ser
	1655					1660					1665			
Glu	Val	Asp	Glu	Lys	Asn	Ser	Ala	Ile	Ala	Glu	Leu	Lys	Asn	Gln
	1670					1675					1680			
Leu	Gln	Thr	Ser	Ser	Lys	Gln	Thr	Leu	Glu	Leu	Gln	Gly	Leu	Ile
	1685					1690					1695			
Asn	Asp	Leu	Gln	Lys	Glu	Arg	Glu	Lys	Leu	Arg	Gln	Glu	Ile	Glu
	1700					1705					1710			

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Lys Phe Gln Lys Gln Ala Leu Glu Ala Ser Asn Arg Ile Gln Glu  
 1715 1720 1725  
 Ser Lys Asn Gln Tyr Asn His Ile Met Gln Glu Arg Glu Thr Leu  
 1730 1735 1740  
 Leu Ile Lys Met Ser Ala Leu Glu Gln Asp Lys Ala Arg Leu Gln  
 1745 1750 1755  
 Arg Leu Glu Glu Glu Leu Asn Arg Leu Lys Val Asn Leu Glu Ser  
 1760 1765 1770  
 Glu Ser Arg Leu Lys Gln Arg Leu Glu Asn Glu Lys Gln Gln Ile  
 1775 1780 1785  
 Leu Asn Asp Leu Asn Gln Trp Lys Ser Gln His Ser Arg Thr Glu  
 1790 1795 1800  
 Glu Ser Ile Arg Lys Ile Gln Cys Glu Arg Glu Lys Ser Glu Arg  
 1805 1810 1815  
 Glu Lys Asn Thr Leu Arg Ser Glu Ile Glu Arg Leu Gln Met Glu  
 1820 1825 1830  
 Ile Lys Arg Ile Glu Glu Arg Tyr Arg Cys Arg Leu Glu Glu Thr  
 1835 1840 1845  
 Ala Val Lys Asn Gln Ser Glu Leu Glu Ser Glu Arg Leu Arg Leu  
 1850 1855 1860  
 Gln Arg Glu Ile Glu Lys Leu Lys Gln Arg Pro Tyr Gly Ser His  
 1865 1870 1875  
 Arg Ser Thr Gln Thr Glu Glu Asp Phe Cys Ile Asp Ala Ser Lys  
 1880 1885 1890  
 Leu Leu Phe Asn Gly Leu Arg Lys Lys Ile Thr Ala Met Gln Leu  
 1895 1900 1905  
 Tyr Glu Cys Gln Leu Ile Asp Lys Leu Thr Leu Asp Lys Leu Leu  
 1910 1915 1920  
 Lys Gly Gln Arg Ser Val Glu Glu Val Ala Ala Asp Ile Glu Pro  
 1925 1930 1935  
 Phe Leu Lys Gly Ala Gly Ala Ile Ala Gly Val Ser Val Leu Pro  
 1940 1945 1950  
 Arg Gln Lys Tyr Ser Phe Val Glu Ala Lys Arg Asn Gln Leu Leu  
 1955 1960 1965



Thr	Ala	Glu	Asn	Ala	Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	
1970						1975				1980				
Gly	Gly	Val	Ile	Asp	Pro	His	Arg	Asn	Glu	Val	Leu	Thr	Val	Asp
1985						1990					1995			
Ser	Ala	Ile	Ala	Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Glu	Gln
2000						2005					2010			
Ile	Tyr	Thr	Ala	Glu	Lys	Ala	Ile	Thr	Gly	Phe	Lys	Asp	Pro	Phe
2015						2020					2025			
Ser	Gly	Lys	Thr	Val	Pro	Leu	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu
2030						2035					2040			
Val	Asp	Arg	Glu	Ile	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Leu	Ala
2045						2050					2055			
Val	Gly	Gly	Ile	Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys
2060						2065					2070			
Asp	Val	Ala	Leu	Ser	Arg	Gly	Leu	Ile	Asp	Lys	Asp	Leu	Tyr	Arg
2075						2080					2085			
Ile	Leu	Asn	Asn	Cys	Gln	Ser	Thr	Thr	Lys	Asn	Phe	Ile	Asp	Pro
2090						2095					2100			
Ser	Thr	Lys	Lys	Ala	Val	Thr	Tyr	Met	Gln	Leu	Lys	Glu	Lys	Cys
2105						2110					2115			
Arg	Ile	Glu	Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Pro	Val	Gln	Lys
2120						2125					2130			
Arg	Ser	Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Ser	Ala	Asp
2135						2140					2145			
Ala	Leu	Leu	Glu	Ala	Gly	Ile	Ile	Lys	Glu	Ser	Thr	Arg	Asn	Asp
2150						2155					2160			
Leu	Glu	Arg	Gly	Ala	Ile	Thr	Val	Glu	Glu	Val	Ser	Glu	Arg	Ile
2165						2170					2175			
Ile	Asp	Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn
2180						2185					2190			
Glu	Ala	Thr	Lys	Glu	Lys	Leu	Gly	Ile	Tyr	Gln	Ala	Met	Lys	Ile
2195						2200					2205			
Gly	Leu	Val	Arg	Pro	Glu	Leu	Ser	Leu	Gly	Thr	Lys	Thr	Gln	Lys
2210						2215					2220			
Leu	Glu	Thr	Ser	Phe	Leu	Cys	Phe	Lys	Gln					

2225

2230

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<211> 2235  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (1)..(2235)

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Met Glu Val Met Asn Leu Met Glu Gln Pro Ile Lys Val Thr Glu Trp  
1 5 10 15  
cag cag aca tac acc tac gac tcg ggt atc cac tcg ggc gcc aac acc 96  
Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr  
20 25 30  
tgc gtg ccc tcc gtc agc agc aag ggc atc atg gag gag gat gag gcc 144  
Cys Val Pro Ser Val Ser Ser Lys Gly Ile Met Glu Glu Asp Glu Ala  
35 40 45  
tgc ggg cgc cag tac acg ctc aag aaa acc acc act tac acc cag ggg 192  
Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Gly  
50 55 60  
gtg ccc ccc agc caa ggt gac ctg gag tac cag atg tcc aca aca gcc 240  
Val Pro Pro Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala  
65 70 75 80  
agg gcc aaa cgg gtg cgg gag gcc atg tgc cct ggt gtg tca ggc gag 288  
Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Ser Gly Glu  
85 90 95  
gac agc tcg ctt ctg ctg gcc acc cag gtg gag ggc cag gcc acc aac 336  
Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Ala Thr Asn  
100 105 110  
ctg cag cga ctg gcc gag ccg tcc cag ctg ctc aag tcg gcc att gtg 384  
Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val  
115 120 125  
cat ctc atc aac tac cag gac gat gcc gag ctg gcc act cgc gcc ctg 432  
His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu  
130 135 140  
ccc gag ctc acc aaa ctg ctc aac gac gag gac ccg gtg gtg gtg acc 480  
Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr  
145 150 155 160  
aag gcg gcc atg att gtg aac cag ctg tcg aag aag gag gcg tcg cgg 528  
Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg  
165 170 175  
cgg gcc ctg atg ggc tcg ccc cag ctg gtg gcc gct gtc gtg cgt acc 576  
Arg Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr  
180 185 190  
atg cag aat acc agc gac ctg gac aca gcc cgc tgc acc acc agc atc 624  
Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile  
195 200 205  
ctg cac aac ctc tcc cac cac cgg gag ggg ctg ctc gcc atc ttc aag 672  
Leu His Asn Leu Ser His His Arg Glu Gly Leu Ala Ile Phe Lys  
210 215 220

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tcg Ser 225	ggt Gly	ggc Gly	atc Ile	cct Pro	gct Ala 230	ctg Leu	gtc Val	cgc Arg	atg Met	ctc Leu 235	agc Ser	tcc Ser	cct Pro	gtg Val	gag Glu 240	720
tcg Ser	gtc Val	ctg Leu	ttc Phe	tat Tyr 245	gcc Ala	atc Ile	acc Thr	acg Thr	ctg Leu 250	cac His	aac Asn	ctg Leu	ctc Leu	ctg Leu 255	tac Tyr	768
cag Gln	gag Glu	ggc Gly	gcc Ala 260	aag Lys	atg Met	gcc Ala	gtg Val	cgc Arg 265	ctg Leu	gcc Ala	gac Asp	ggg Gly	ctg Leu 270	caa Gln	aag Lys	816
atg Met	gtg Val	ccc Pro 275	ctg Leu	ctc Leu	aac Asn	aag Lys	aac Asn 280	aac Asn	ccc Pro	aag Lys	ttc Phe	ctg Leu 285	gcc Ala	atc Ile	acc Thr	864
acc Thr	gac Asp 290	tgc Cys	ctg Leu	cag Gln	ctc Leu	ctg Leu 295	gcc Ala	tac Tyr	ggc Gly	aac Asn	cag Gln 300	gag Glu	agc Ser	aag Lys	ctg Leu	912
atc Ile 305	atc Ile	ctg Leu	gcc Ala	aat Asn	ggt Gly 310	ggg Gly	ccc Pro	cag Gln	gcc Ala	ctc Leu 315	gtg Val	cag Gln	atc Ile	atg Met	cgt Arg 320	960
aac Asn	tac Tyr	agt Ser	tat Tyr	gaa Glu 325	aag Lys	ctg Leu	ctc Leu	tgg Trp	acc Thr 330	acc Thr	agt Ser	cgt Arg	gtg Val	ctc Leu 335	aag Lys	1008
gtg Val	cta Leu	tcc Ser	gtg Val 340	tgt Cys	ccc Pro	agc Ser	aat Asn	aag Lys 345	cct Pro	gcc Ala	att Ile	gtg Val	gag Glu 350	gct Ala	ggg Gly	1056
ggg Gly	atg Met	cag Gln 355	gcc Ala	ctg Leu	ggc Gly	aag Lys	cac His 360	ctg Leu	acc Thr	agc Ser	aac Asn	agc Ser 365	ccc Pro	cgc Arg	ctg Leu	1104
gtg Val	cag Gln 370	aac Asn	tgc Cys	ctg Leu	tgg Trp	acc Thr 375	ctg Leu	cgc Arg	aac Asn	ctc Leu	tca Ser 380	gat Asp	gtg Val	gcc Ala	acc Thr	1152
aag Lys 385	cag Gln	gag Glu	ggc Gly	ctg Leu	gag Glu 390	agt Ser	gtg Val	ctg Leu	aag Lys	att Ile 395	ctg Leu	gtg Val	aat Asn	cag Gln	ctg Leu 400	1200
agt Ser	gtg Val	gat Asp	gac Asp	gtc Val 405	aac Asn	gtc Val	ctc Leu	acc Thr	tgt Cys 410	gcc Ala	acg Thr	ggc Gly	aca Thr	ctc Leu 415	tcc Ser	1248
aac Asn	ctg Leu	aca Thr	tgc Cys 420	aac Asn	aac Asn	agc Ser	aag Lys	aac Asn 425	aag Lys	acg Thr	ctg Leu	gtg Val	aca Thr 430	cag Gln	aac Asn	1296
agc Ser	ggt Gly	gtg Val 435	gag Glu	gct Ala	ctc Leu	atc Ile	cat His 440	gcc Ala	atc Ile	ctg Leu	cgt Arg	gct Ala 445	ggg Gly	gac Asp	aag Lys	1344
gac Asp	gac Asp 450	atc Ile	acg Thr	gag Glu	cct Pro	gcc Ala 455	gtc Val	tgc Cys	gct Ala	ctg Leu	cgc Arg 460	cac His	ctc Leu	act Thr	agc Ser	1392
cgc Arg 465	cac His	cct Pro	gag Glu	gcc Ala	gag Glu 470	atg Met	gcc Ala	cag Gln	aac Asn	tct Ser 475	gtg Val	cgt Arg	ctc Leu	aac Asn	tat Tyr 480	1440
ggc Gly	atc Ile	cca Pro	gcc Ala	atc Ile 485	gtg Val	aag Lys	ctg Leu	ctc Leu	aac Asn 490	cag Gln	ccc Pro	aac Asn	cag Gln	tgg Trp 495	cca Pro	1488

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ctg gtc aag gca acc atc ggc ttg atc agg aat ctg gcc ctg tgc cca Leu Val Lys Ala Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro	1536
gcc aac cat gcc ccg ctg cag gag gca gcg gtc atc ccc cgc ctc gtc Ala Asn His Ala Pro Leu Gln Glu Ala Ala Val Ile Pro Arg Leu Val	1584
caa ctg ctg gtg aag gcc cac cag gat gcc cag cgc cac gta gct gca Gln Leu Leu Val Lys Ala His Gln Asp Ala Gln Arg His Val Ala Ala	1632
ggc aca cag cag ccc tac acg gat ggt gtg agg atg gag gag att gtg Gly Thr Gln Gln Pro Tyr Thr Asp Gly Val Arg Met Glu Glu Ile Val	1680
gag ggc tgc acc gga gca ctg cac atc ctc gcc cgg gac ccc atg aac Glu Gly Cys Thr Gly Ala Leu His Ile Leu Ala Arg Asp Pro Met Asn	1728
cgc atg gag atc ttc cgg ctc aac acc att ccc ctg ttt gtg cag ctc Arg Met Glu Ile Phe Arg Leu Asn Thr Ile Pro Leu Phe Val Gln Leu	1776
ctg tac tcg tcg gtg gag aac atc cag cgc gtg gct gcc ggg gtg ctg Leu Tyr Ser Ser Val Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu	1824
tgt gag ctg gcc cag gac aag gag gcg gcc gac gcc att gat gca gag Cys Glu Leu Ala Gln Asp Lys Glu Ala Ala Asp Ala Ile Asp Ala Glu	1872
ggg gcc tcg gcc cca ctc atg gag ttg ctg cac tcc cgc aac gag ggc Gly Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly	1920
act gcc acc tac gct gct gcc gtc ctg ttc cgc atc tcc gag gac aag Thr Ala Thr Tyr Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys	1968
aac cca gac tac cgg aag cgc gtg tcc gtg gag ctc acc aac tcc ctc Asn Pro Asp Tyr Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu	2016
ttc aag cat gac ccg gct gcc tgg gag gct gcc cag agc atg att ccc Phe Lys His Asp Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro	2064
atc aat gag ccc tat gga gat gac atg gat gcc acc tac cgc ccc atg Ile Asn Glu Pro Tyr Gly Asp Asp Met Asp Ala Thr Tyr Arg Pro Met	2112
tac tcc agc gat gtg ccc ctt gac ccg ctg gag atg cac atg gac atg Tyr Ser Ser Asp Val Pro Leu Asp Pro Leu Glu Met His Met Asp Met	2160
gat gga gac tac ccc atc gac acc tac agc gac ggc ctc agg ccc ccg Asp Gly Asp Tyr Pro Ile Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro	2208
tac ccc act gca gac cac atg ctg gcc Tyr Pro Thr Ala Asp His Met Leu Ala	2235

<210> 50  
 <211> 745  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 50

Met Glu Val Met Asn Leu Met Glu Gln Pro Ile Lys Val Thr Glu Trp  
 1 5 10 15  
 Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr  
 20 25 30  
 Cys Val Pro Ser Val Ser Ser Lys Gly Ile Met Glu Glu Asp Glu Ala  
 35 40 45  
 Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Gly  
 50 55 60  
 Val Pro Pro Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala  
 65 70 75 80  
 Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Ser Gly Glu  
 85 90 95  
 Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Ala Thr Asn  
 100 105 110  
 Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val  
 115 120 125  
 His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu  
 130 135 140  
 Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr  
 145 150 155 160  
 Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg  
 165 170 175  
 Arg Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr  
 180 185 190  
 Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile  
 195 200 205  
 Leu His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys  
 210 215 220  
 Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu  
 225 230 235 240  
 Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr  
 245 250 255  
 Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys  
 260 265 270

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Met Val Pro Leu Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr  
275 280 285

Thr Asp Cys Leu Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu  
290 295 300

Ile Ile Leu Ala Asn Gly Gly Pro Gln Ala Leu Val Gln Ile Met Arg  
305 310 315 320

Asn Tyr Ser Tyr Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys  
325 330 335

Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly  
340 345 350

Gly Met Gln Ala Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu  
355 360 365

Val Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr  
370 375 380

Lys Gln Glu Gly Leu Glu Ser Val Leu Lys Ile Leu Val Asn Gln Leu  
385 390 395 400

Ser Val Asp Asp Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser  
405 410 415

Asn Leu Thr Cys Asn Asn Ser Lys Asn Lys Thr Leu Val Thr Gln Asn  
420 425 430

Ser Gly Val Glu Ala Leu Ile His Ala Ile Leu Arg Ala Gly Asp Lys  
435 440 445

Asp Asp Ile Thr Glu Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser  
450 455 460

Arg His Pro Glu Ala Glu Met Ala Gln Asn Ser Val Arg Leu Asn Tyr  
465 470 475 480

Gly Ile Pro Ala Ile Val Lys Leu Leu Asn Gln Pro Asn Gln Trp Pro  
485 490 495

Leu Val Lys Ala Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro  
500 505 510

Ala Asn His Ala Pro Leu Gln Glu Ala Ala Val Ile Pro Arg Leu Val  
515 520 525

Gln Leu Leu Val Lys Ala His Gln Asp Ala Gln Arg His Val Ala Ala  
530 535 540

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Gly Thr Gln Gln Pro Tyr Thr Asp Gly Val Arg Met Glu Glu Ile Val  
545 550 555 560

Glu Gly Cys Thr Gly Ala Leu His Ile Leu Ala Arg Asp Pro Met Asn  
565 570 575

Arg Met Glu Ile Phe Arg Leu Asn Thr Ile Pro Leu Phe Val Gln Leu  
580 585 590

Leu Tyr Ser Ser Val Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu  
595 600 605

Cys Glu Leu Ala Gln Asp Lys Glu Ala Ala Asp Ala Ile Asp Ala Glu  
610 615 620

Gly Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly  
625 630 635 640

Thr Ala Thr Tyr Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys  
645 650 655

Asn Pro Asp Tyr Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu  
660 665 670

Phe Lys His Asp Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro  
675 680 685

Ile Asn Glu Pro Tyr Gly Asp Asp Met Asp Ala Thr Tyr Arg Pro Met  
690 695 700

Tyr Ser Ser Asp Val Pro Leu Asp Pro Leu Glu Met His Met Asp Met  
705 710 715 720

Asp Gly Asp Tyr Pro Ile Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro  
725 730 735

Tyr Pro Thr Ala Asp His Met Leu Ala  
740 745

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<212> DNA  
<213> Mus musculus

<220>  
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<222> (113)..(2347)

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gccagacccg accccgattc ggctcagccc ggctccacgc tcagcagcca cc atg gag 118  
Met Glu  
1

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aca Thr	tac Tyr 20	acc Thr	tac Tyr	gac Asp	tcg Ser	ggc Gly 25	atc Ile	cac His	tcc Ser	ggc Gly	gtc Val 30	aat Asn	acc Thr	tgt Cys	gtg Val	214
ccc Pro 35	tct Ser	gta Val	agc Ser	agc Ser	aag Lys 40	ggc Gly	atc Ile	atg Met	gat Asp	gag Glu 45	gat Asp	gat Asp	gcc Ala	tgc Cys	ggc Gly 50	262
aga Arg	cag Gln	tac Tyr	aca Thr	ctc Leu 55	aag Lys	aag Lys	act Thr	acc Thr	acc Thr	tat Tyr	aca Thr	caa Gln	ggg Gly	gtg Val 65	cca Pro	310
cag Gln	aac Asn	caa Gln	ggc Gly 70	gac Asp	ctg Leu	gaa Glu	tac Tyr 75	cag Gln	atg Met	tcc Ser	aca Thr	acg Thr	gcc Ala 80	aga Arg	gcc Ala	358
aag Lys	cgg Arg	gtg Val 85	cgg Arg	gag Glu	gcc Ala	atg Met	tgt Cys 90	cca Pro	ggg Gly	gtc Val	tca Ser	ggc Gly 95	gag Glu	gac Asp	agt Ser	406
tct Ser	cta Leu 100	ctg Leu	ctg Leu	gcc Ala	acc Thr	cag Gln 105	gtg Val	gag Glu	ggg Gly	cag Gln	aca Thr 110	acc Thr	aat Asn	ctg Leu	cag Gln	454
cgc Arg 115	ctg Leu	gcc Ala	gaa Glu	cca Pro	tcc Ser 120	cag Gln	ttg Leu	ctc Leu	aag Lys	tcg Ser 125	gcc Ala	atc Ile	gtc Val	cat His	ctc Leu 130	502
atc Ile	aac Asn	tac Tyr	cag Gln	gat Asp 135	gat Asp	gca Ala	gag Glu	ctg Leu	gcc Ala 140	acc Thr	cgg Arg	gct Ala	ctg Leu	cct Pro 145	gag Glu	550
ctc Leu	acc Thr	aag Lys	ctg Leu 150	ctc Leu	aac Asn	gat Asp	gag Glu	gac Asp 155	ccg Pro	gta Val	gtg Val	gtg Val	acc Thr 160	aag Lys	gcg Ala	598
gct Ala	atg Met	atc Ile 165	gtg Val	aac Asn	cag Gln	ctg Leu	tcc Ser 170	aag Lys	aag Lys	gag Glu	gca Ala	tcc Ser 175	cgc Arg	cgg Arg	gct Ala	646
cta Leu	atg Met 180	ggc Gly	tcg Ser	ccc Pro	cag Gln	ctg Leu 185	gtg Val	gcg Ala	gcg Ala	gtg Val	gtg Val 190	cgg Arg	act Thr	atg Met	cag Gln	694
aac Asn 195	acc Thr	agt Ser	gac Asp	ctg Leu	gat Asp 200	act Thr	gcc Ala	cgg Arg	tgt Cys	acc Thr 205	acc Thr	agc Ser	atc Ile	ctg Leu	cac His 210	742
aac Asn	ctc Leu	tct Ser	cac His	cac His 215	cga Arg	gag Glu	ggc Gly	ttg Leu	ctc Leu 220	gcc Ala	ata Ile	ttc Phe	aag Lys	tct Ser 225	gga Gly	790
ggc Gly	atc Ile	cct Pro	gcc Ala 230	cta Leu	gtc Val	cga Arg	atg Met	ctc Leu 235	agt Ser	tcc Ser	ccc Pro	gta Val	gaa Glu 240	tct Ser	gtc Val	838
ctg Leu	ttc Phe	tac Tyr 245	gcc Ala	atc Ile	acc Thr	aca Thr	ctg Leu 250	cac His	aac Asn	ctg Leu	ctg Leu	ctc Leu 255	tat Tyr	cag Gln	gag Glu	886
ggc Gly	gcc Ala 260	aag Lys	atg Met	gcg Ala	gtg Val	cgt Arg 265	ctg Leu	gca Ala	gac Asp	ggg Gly	ctg Leu 270	cag Gln	aag Lys	atg Met	gtg Val	934



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ccc Pro 275	cta Leu	ctc Leu	aac Asn	aag Lys	aac Asn 280	aac Asn	cct Pro	aag Lys	ttc Phe	ctg Leu 285	gcc Ala	atc Ile	act Thr	act Thr	gac Asp 290	982
tgc Cys	ctg Leu	cag Gln	ctc Leu 295	ctg Leu	gcc Ala	tat Tyr	ggc Gly	aac Asn	cag Gln 300	gag Glu	agc Ser	aag Lys	ctg Leu	atc Ile 305	atc Ile	1030
ctg Leu	gcc Ala	aat Asn	ggg Gly 310	gga Gly	ccc Pro	caa Gln	ggg Gly 315	ctt Leu	gtg Val	cag Gln	atc Ile	atg Met	agg Arg 320	aac Asn	tac Tyr	1078
agc Ser	tac Tyr	gag Glu 325	aag Lys	ctt Leu	ctg Leu	tgg Trp	acc Thr 330	acc Thr	agc Ser	cgt Arg	gtg Val	ctc Leu 335	aag Lys	gtg Val	ctc Leu	1126
tcc Ser	gtg Val 340	tgt Cys	cct Pro	agc Ser	aac Asn	aag Lys 345	ccc Pro	gcc Ala	atc Ile	gtg Val	gag Glu 350	gct Ala	ggg Gly	ggg Gly	atg Met	1174
cag Gln 355	gct Ala	ctg Leu	ggc Gly	aag Lys	cac His 360	tgt Leu	aca Thr	agc Ser	aac Asn	agt Ser 365	ccc Pro	cgc Arg	ctg Leu	gtg Val	cag Gln 370	1222
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gat Asp	gac Asp	gtc Val 405	aac Asn	gtc Val	ctc Leu	acc Thr	tgt Cys 410	gcc Ala	acg Thr	ggc Gly	acc Thr	ctc Leu 415	tcc Ser	aac Asn	ctg Leu	1366
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ccc Pro	gag Glu	gct Ala	gag Glu 470	atg Met	gcc Ala	cag Gln	aac Asn	tct Ser 475	gtg Val	cgc Arg	ctc Leu	aac Asn	tat Tyr 480	gga Gly	atc Ile	1558
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Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Gly  
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Val Pro Gln Asn Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala  
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Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Ser Gly Glu  
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Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn  
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Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val  
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His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu  
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Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr  
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Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg  
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Arg Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr  
180 185 190

Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile  
Seite 239

195

200

205

Leu His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys  
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Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu  
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Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr  
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Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys  
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Met Val Pro Leu Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr  
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Thr Asp Cys Leu Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu  
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Ile Ile Leu Ala Asn Gly Gly Pro Gln Gly Leu Val Gln Ile Met Arg  
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Asn Tyr Ser Tyr Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys  
 325 330 335

Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly  
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Gly Met Gln Ala Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu  
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Val Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr  
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Lys Gln Glu Gly Leu Glu Ser Val Leu Lys Ile Leu Val Asn Gln Leu  
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Ser Val Asp Asp Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser  
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Asn Leu Thr Cys Asn Asn Ser Lys Asn Lys Thr Leu Val Thr Gln Asn  
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Ser Gly Val Glu Ala Leu Ile His Ala Ile Leu Arg Ala Gly Asp Lys  
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Asp Asp Ile Thr Glu Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser  
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Arg His Pro Glu Ala Glu Met Ala Gln Asn Ser Val Arg Leu Asn Tyr  
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PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

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Ala	Asn	His 515	Ala	Pro	Leu	Gln	Glu 520	Ala	Ala	Val	Ile	Pro 525	Arg	Leu	Val
Gln	Leu 530	Leu	Val	Lys	Ala	His 535	Gln	Asp	Ala	Gln	Arg 540	His	Val	Ala	Ala
Gly 545	Thr	Gln	Gln	Pro	Tyr 550	Thr	Asp	Gly	Val	Arg 555	Met	Glu	Glu	Ile	Val 560
Glu	Gly	Cys	Thr	Gly 565	Ala	Leu	His	Ile	Leu 570	Ala	Arg	Asp	Pro	Met 575	Asn
Arg	Met	Glu	Ile 580	Phe	Arg	Leu	Asn	Thr 585	Ile	Pro	Leu	Phe	Val 590	Gln	Leu
Leu	Tyr	Ser 595	Ser	Val	Glu	Asn	Ile 600	Gln	Arg	Val	Ala	Ala 605	Gly	Val	Leu
Cys	Glu 610	Leu	Ala	Gln	Asp	Lys 615	Glu	Ala	Ala	Asp	Ala 620	Ile	Asp	Ala	Glu
Gly 625	Ala	Ser	Ala	Pro	Leu 630	Met	Glu	Leu	Leu	His 635	Ser	Arg	Asn	Glu	Gly 640
Thr	Ala	Thr	Tyr	Ala 645	Ala	Ala	Val	Leu	Phe 650	Arg	Ile	Ser	Glu	Asp 655	Lys
Asn	Pro	Asp	Tyr 660	Arg	Lys	Arg	Val	Ser 665	Val	Glu	Leu	Thr	Asn 670	Ser	Leu
Phe	Lys	His 675	Asp	Pro	Ala	Ala	Trp 680	Glu	Ala	Ala	Gln	Ser 685	Met	Ile	Pro
Ile	Asn 690	Glu	Pro	Tyr	Ala	Asp 695	Asp	Met	Asp	Ala	Thr 700	Tyr	Arg	Pro	Met
Tyr 705	Ser	Ser	Asp	Val	Pro 710	Leu	Asp	Pro	Leu	Asp 715	Met	His	Met	Asp	Leu 720
Asp	Gly	Asp	Tyr	Pro 725	Met	Asp	Thr	Tyr	Ser 730	Asp	Gly	Leu	Arg	Pro 735	Pro
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cag cag acg tac acc tat gac tcg ggc atc cac tcc ggt gtc aat acc      96
Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Val Asn Thr
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tgt gtg ccc tct gtc agc agc aag ggc ctc ctc gat gag gat gac acc     144
Cys Val Pro Ser Val Ser Ser Lys Gly Leu Leu Asp Glu Asp Asp Thr
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tgc ggc aga cag tac aca ctc aag aaa act acc acc tac aca caa ggg     192
Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Gly
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gtg cca cag agc caa ggc gac ctg gag tac cag atg tcc acc acg gcc     240
Val Pro Gln Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala
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aga gcc aag cgg gtg cgg gag gcc atg tgc cca ggt gtc tca ggc gag     288
Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Ser Gly Glu
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gac agt tct ctc ctc ctg gcc acc cag gtg gag ggg cag acg acc aac     336
Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn
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ctg cag cga ctg gcc gaa cca tcc cag cta ctc aag tgc gcc att gta     384
Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val
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cat ctc atc aac tac cag gac gac gca gag ctg gcc acc cgg gct ctg     432
His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu
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cct gag ctc acc aag ctg ctc aac gat gag gac ccg gta gtg gtc acc     480
Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr
145                               150         155         160

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Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg
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cgt gcc ctg atg ggc tcg ccc cag ctg gtg gcg gct gtg gtg cgg acc     576
Arg Ala Leu Met Gly Ser Pro Gln Leu Val Val Ala Ala Val Val Arg Thr
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atg cag aac acc agt gac ctg gat act gcc cgc tgt acc acc agc atc     624
Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile
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ctg cac aac ctc tcc cac cac cga gag ggg ctg ctt gct atc ttc aag     672
Leu His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys
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Tyr	Ser	Ser	Asp	Val	Pro	Leu	Asp	Pro	Leu	Asp	Met	His	Met	Asp	Met	
705					710					715					720	
gat	ggc	gac	tac	ccc	atg	gac	acc	tac	agc	gac	ggc	ctg	aga	cct	ccc	2208
Asp	Gly	Asp	Tyr	Pro	Met	Asp	Thr	Tyr	Ser	Asp	Gly	Leu	Arg	Pro	Pro	
				725					730					735		
tac	ccc	gct	gca	gac	cac	atg	ctg	gcc								2235
Tyr	Pro	Ala	Ala	Asp	His	Met	Leu	Ala								
			740					745								

<210> 54  
 <211> 745  
 <212> PRT  
 <213> Rattus norvegicus

<400> 54



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Met Glu Val Met Asn Leu Ile Glu Gln Pro Ile Lys Val Thr Glu Trp  
1 5 10 15

Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Val Asn Thr  
20 25 30

Cys Val Pro Ser Val Ser Ser Lys Gly Leu Leu Asp Glu Asp Asp Thr  
35 40 45

Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Gly  
50 55 60

Val Pro Gln Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala  
65 70 75 80

Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Ser Gly Glu  
85 90 95

Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn  
100 105 110

Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val  
115 120 125

His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu  
130 135 140

Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr  
145 150 155 160

Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg  
165 170 175

Arg Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr  
180 185 190

Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile  
195 200 205

Leu His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys  
210 215 220

Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu  
225 230 235 240

Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr  
245 250 255

Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys  
260 265 270

Met Val Pro Leu Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr  
275 280 285

Thr Asp Cys Leu Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu  
290 295 300

Ile Ile Leu Ala Asn Gly Gly Pro Gln Gly Leu Val Gln Ile Met Arg  
305 310 315 320

Asn Tyr Ser Tyr Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys  
325 330 335

Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly  
340 345 350

Gly Met Gln Ala Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu  
355 360 365

Val Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr  
370 375 380

Lys Gln Glu Gly Leu Glu Asn Val Leu Lys Ile Leu Val Asn Gln Leu  
385 390 395 400

Ser Val Asp Asp Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser  
405 410 415

Asn Leu Thr Cys Asn Asn Ser Lys Asn Lys Thr Leu Val Thr Gln Asn  
420 425 430

Ser Gly Val Glu Ala Leu Ile His Ala Ile Leu Arg Ala Gly Asp Lys  
435 440 445

Asp Asp Ile Thr Glu Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser  
450 455 460

Arg His Pro Glu Ala Glu Met Ala Gln Asn Ser Val Arg Leu Asn Tyr  
465 470 475 480

Gly Ile Pro Ala Ile Val Lys Leu Leu Asn Gln Pro Asn Gln Trp Pro  
485 490 495

Leu Val Lys Ala Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro  
500 505 510

Ala Asn His Ala Pro Leu Gln Glu Ala Ala Val Ile Pro Arg Leu Val  
515 520 525

Gln Leu Leu Val Lys Ala His Gln Asp Ala Gln Arg His Val Ala Ala  
530 535 540

Gly Thr Gln Gln Pro Tyr Thr Asp Gly Val Arg Met Glu Glu Ile Val  
Seite 246

545

550

555

560

Glu Gly Cys Thr Gly Ala Leu His Ile Leu Ala Arg Asp Pro Met Asn  
565 570 575

Arg Met Glu Ile Phe Arg Leu Asn Thr Ile Pro Leu Phe Val Gln Leu  
580 585 590

Leu Tyr Ser Ser Val Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu  
595 600 605

Cys Glu Leu Ala Gln Asp Lys Glu Ala Ala Asp Ala Ile Asp Ala Glu  
610 615 620

Gly Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly  
625 630 635 640

Thr Ala Thr Tyr Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys  
645 650 655

Asn Pro Asp Tyr Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu  
660 665 670

Phe Lys His Asp Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro  
675 680 685

Ile Asn Glu Pro Tyr Ala Asp Asp Met Asp Ala Thr Tyr Arg Pro Met  
690 695 700

Tyr Ser Ser Asp Val Pro Leu Asp Pro Leu Asp Met His Met Asp Met  
705 710 715 720

Asp Gly Asp Tyr Pro Met Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro  
725 730 735

Tyr Pro Ala Ala Asp His Met Leu Ala  
740 745

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<211> 2187  
<212> DNA  
<213> Danio rerio

<220>  
<221> CDS  
<222> (1)..(2187)

<400> 55  
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Met Glu Met His Met Gly Glu Ala Pro Gly Ser Val Lys Val Thr Glu  
1 5 10 15

tgg cag cag tcg tac tac ggc aca gat tca ggc atc cat tca gga gcc 96  
Trp Gln Gln Ser Tyr Tyr Gly Thr Asp Ser Gly Ile His Ser Gly Ala  
20 25 30

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act	act	gtt	cgc	tca	gat	gat	gat	gga	aca	gag	tac	agc	tct	aag	aaa	144
Thr	Thr	Val	Arg	Ser	Asp	Asp	Asp	Gly	Thr	Glu	Tyr	Ser	Ser	Lys	Lys	
		35					40					45				
ttc	acc	tac	acc	acc	aca	ttc	aca	gag	aac	cct	gca	gag	gtg	gag	tct	192
Phe	Thr	Tyr	Thr	Thr	Thr	Phe	Thr	Glu	Asn	Pro	Ala	Glu	Val	Glu	Ser	
	50					55					60					
cag	tta	aac	atg	act	cgt	gct	cag	cgt	gtg	agg	gcg	gcc	atg	ttt	cct	240
Gln	Leu	Asn	Met	Thr	Arg	Ala	Gln	Arg	Val	Arg	Ala	Ala	Met	Phe	Pro	
	65				70					75					80	
gag	act	gtg	atg	gag	gga	tcg	gtc	att	cat	tct	aca	cag	atc	gat	cca	288
Glu	Thr	Val	Met	Glu	Gly	Ser	Val	Ile	His	Ser	Thr	Gln	Ile	Asp	Pro	
				85					90					95		
tcc	cag	cag	acc	aat	gta	caa	aag	ctg	gcc	gaa	cca	tct	cag	cag	ctc	336
Ser	Gln	Gln	Thr	Asn	Val	Gln	Lys	Leu	Ala	Glu	Pro	Ser	Gln	Gln	Leu	
			100					105					110			
aaa	gct	gcc	atc	gtt	cac	ctc	atc	aac	tac	cag	gac	gac	gct	gaa	ctc	384
Lys	Ala	Ala	Ile	Val	His	Leu	Ile	Asn	Tyr	Gln	Asp	Asp	Ala	Glu	Leu	
		115					120					125				
gcc	aca	cgc	gcc	atc	cca	gag	ctc	acc	aaa	ctc	ctc	aac	gat	gaa	gac	432
Ala	Thr	Arg	Ala	Ile	Pro	Glu	Leu	Thr	Lys	Leu	Leu	Asn	Asp	Glu	Asp	
	130					135					140					
cag	ttg	gtt	gtg	aac	aaa	gcc	gct	atg	atc	gtg	aac	caa	ctg	acc	cgc	480
Gln	Leu	Val	Val	Asn	Lys	Ala	Ala	Met	Ile	Val	Asn	Gln	Leu	Thr	Arg	
	145				150					155					160	
aag	gag	gca	tcc	cgc	agg	gct	ctt	atg	cag	tcc	ccg	cag	atg	gtg	gcc	528
Lys	Glu	Ala	Ser	Arg	Arg	Ala	Leu	Met	Gln	Ser	Pro	Gln	Met	Val	Ala	
				165					170					175		
gct	gta	gtg	aga	gcc	atg	cag	aac	acg	acc	gac	atg	gag	acg	acc	cgc	576
Ala	Val	Val	Arg	Ala	Met	Gln	Asn	Thr	Thr	Asp	Met	Glu	Thr	Thr	Arg	
			180					185					190			
gcc	aca	gcc	agc	atc	ctg	cac	aac	ctc	tcg	cac	cag	cgt	gaa	gga	ctg	624
Ala	Thr	Ala	Ser	Ile	Leu	His	Asn	Leu	Ser	His	Gln	Arg	Glu	Gly	Leu	
		195					200					205				
ctc	gcc	atc	ttc	aaa	tca	ggc	ggc	att	cca	gct	ctg	gtg	cgc	atg	ctg	672
Leu	Ala	Ile	Phe	Lys	Ser	Gly	Gly	Ile	Pro	Ala	Leu	Val	Arg	Met	Leu	
	210					215					220					
agc	tct	ccg	atg	gac	tct	gta	ctt	ttc	tac	gcc	atc	acc	acc	ctg	cac	720
Ser	Ser	Pro	Met	Asp	Ser	Val	Leu	Phe	Tyr	Ala	Ile	Thr	Thr	Leu	His	
	225				230					235					240	
aac	ctg	ctt	ttg	cac	caa	gag	gga	gcc	aag	atg	gcg	gtg	cgt	ctg	gct	768
Asn	Leu	Leu	Leu	His	Gln	Glu	Gly	Ala	Lys	Met	Ala	Val	Arg	Leu	Ala	
				245					250					255		
gat	ggt	ctc	cag	agg	atg	gtt	ccc	ctg	ctg	aag	aaa	agc	aac	ccc	aaa	816
Asp	Gly	Leu	Gln	Arg	Met	Val	Pro	Leu	Leu	Lys	Lys	Ser	Asn	Pro	Lys	
			260					265					270			
ttc	ctg	gcc	atc	acc	aca	gac	tgc	ttg	cag	ctg	ctg	tcc	tat	ggc	aac	864
Phe	Leu	Ala	Ile	Thr	Thr	Asp	Cys	Leu	Gln	Leu	Leu	Ser	Tyr	Gly	Asn	
		275					280					285				
cag	gag	agc	aag	ctg	att	atc	ctg	gct	aat	ggt	ggt	cct	gag	ggt	ctt	912
Gln	Glu	Ser	Lys	Leu	Ile	Ile	Leu	Ala	Asn	Gly	Gly	Pro	Glu	Gly	Leu	
	290					295					300					

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gtc Val 305	aac Asn	atc Ile	atg Met	agg Arg	act Thr 310	tac Tyr	aac Asn	tat Tyr	gag Glu	aag Lys 315	ctg Leu	ctg Leu	tgg Trp	acc Thr	acc Thr 320	960
agt Ser	cgt Arg	gtg Val	ctg Leu	aaa Lys 325	gtg Val	ctc Leu	tct Ser	gtc Val	tgt Cys 330	cca Pro	agc Ser	aac Asn	aag Lys	cct Pro 335	gcc Ala	1008
atc Ile	gta Val	gat Asp	gct Ala 340	ggg Gly	gga Gly	atg Met	caa Gln	gct Ala 345	ctt Leu	ggg Gly	aaa Lys	cat His	ctg Leu 350	tcc Ser	ggc Gly	1056
tca Ser	agt Ser	cag Gln 355	cgt Arg	ctg Leu	atg Met	caa Gln	aac Asn 360	tgc Cys	ttg Leu	tgg Trp	act Thr	ttg Leu 365	aga Arg	aac Asn	ttg Leu	1104
tca Ser	gat Asp 370	gct Ala	gca Ala	acc Thr	aaa Lys	cag Gln 375	gac Asp	ggg Gly	atg Met	gag Glu	aat Asn 380	ctt Leu	ctt Leu	caa Gln	gtc Val	1152
ttg Leu 385	gtc Val	ggg Gly	ctg Leu	ctg Leu	tct Ser 390	gct Ala	gat Asp	gac Asp	atc Ile	aac Asn 395	atg Met	ctg Leu	aca Thr	tgt Cys	gcc Ala 400	1200
aca Thr	ggc Gly	gtc Val	ctg Leu	tcc Ser 405	aac Asn	ctc Leu	acc Thr	tgc Cys	aac Asn 410	aac Asn	aca Thr	cgc Arg	aac Asn	aaa Lys 415	acg Thr	1248
cag Gln	gtg Val	acc Thr	cag Gln 420	agt Ser	aac Asn	ggc Gly	gtg Val	gag Glu 425	gct Ala	ctc Leu	att Ile	cac His	acc Thr 430	atc Ile	ctg Leu	1296
agg Arg	gcc Ala	agt Ser 435	tca Ser	aaa Lys	cag Gln	gac Asp	gtg Val 440	atc Ile	gag Glu	cca Pro	gcc Ala	gtc Val 445	tgc Cys	gcc Ala	ctg Leu	1344
cgc Arg	cac His 450	ctc Leu	acc Thr	agc Ser	cga Arg	cac His 455	cca Pro	gag Glu	gct Ala	gag Glu	act Thr 460	gca Ala	cag Gln	aac Asn	gcc Ala	1392
gta Val 465	cga Arg	atg Met	cat His	tac Tyr	ggc Gly 470	atc Ile	cct Pro	gct Ala	att Ile	gtc Val 475	aaa Lys	ctg Leu	ctc Leu	aat Asn	caa Gln 480	1440
ccc Pro	tac Tyr	cac His	tgg Trp	cca Pro 485	gtt Val	gtc Val	aag Lys	gct Ala	gtg Val 490	gtt Val	ggg Gly	ctg Leu	atc Ile	cgt Arg 495	aac Asn	1488
ctg Leu	gcc Ala	ctg Leu	tgt Cys 500	cca Pro	gcc Ala	aat Asn	cag Gln	gct Ala 505	cct Pro	ttg Leu	agg Arg	gac Asp	gct Ala 510	gac Asp	gcc Ala	1536
att Ile	ccc Pro	aaa Lys 515	ctg Leu	gtc Val	act Thr	ttg Leu	ctt Leu 520	tca Ser	aaa Lys	gct Ala	cat His	cag Gln 525	gat Asp	gca Ala	cag Gln	1584
aaa Lys	ccc Pro 530	ggg Gly	tca Ser	tct Ser	gct Ala	caa Gln 535	cga Arg	tca Ser	tac Tyr	cag Gln	gat Asp 540	ggg Gly	gta Val	aga Arg	atg Met	1632
gag Glu 545	gag Glu	att Ile	gtt Val	gag Glu	ggc Gly 550	tgc Cys	act Thr	ggg Gly	gct Ala	ctt Leu 555	cat His	atc Ile	atg Met	gcc Ala	aga Arg 560	1680
gat Asp	cct Pro	atg Met	aac Asn	cga Arg 565	ggc Gly	acc Thr	att Ile	gcc Ala	agc Ser 570	atg Met	gac Asp	acc Thr	att Ile	cct Pro 575	ctg Leu	1728
ttt Gly	gtt Gly	cag Gly	ctg Gly	ttg Gly	tat Gly	tct Gly	cca Gly	ctg Gly	gat Gly	aac Gly	gtc Gly	aag Gly	cgt Gly	gtg Gly	gca Gly	1776

Phe	Val	Gln	Leu	Leu	Tyr	Ser	Pro	Leu	Asp	Asn	Val	Lys	Arg	Val	Ala		
			580					585					590				
gct	ggt	gtt	ctg	tgt	gaa	ctg	gct	ctt	gat	aaa	cag	tcg	gct	gag	atc		1824
Ala	Gly	Val	Leu	Cys	Glu	Leu	Ala	Leu	Asp	Lys	Gln	Ser	Ala	Glu	Ile		
		595					600					605					
atc	gat	gcg	gaa	gga	gcc	agt	gct	cct	ctc	atg	gag	ctc	ctt	cac	tcc		1872
Ile	Asp	Ala	Glu	Gly	Ala	Ser	Ala	Pro	Leu	Met	Glu	Leu	Leu	His	Ser		
	610					615					620						
agc	aac	gaa	ggg	atc	gcc	acc	tat	gct	gct	gct	gtt	ctc	tac	aga	act		1920
Ser	Asn	Glu	Gly	Ile	Ala	Thr	Tyr	Ala	Ala	Ala	Val	Leu	Tyr	Arg	Thr		
	625				630					635					640		
gct	gag	gac	aaa	aac	cca	gac	tat	aag	aaa	aga	gtt	tca	gta	gaa	ctc		1968
Ala	Glu	Asp	Lys	Asn	Pro	Asp	Tyr	Lys	Lys	Arg	Val	Ser	Val	Glu	Leu		
				645					650					655			
aca	cac	tca	ctc	ttc	aaa	cac	gac	cct	gag	gct	tgg	gaa	atg	gca	cac		2016
Thr	His	Ser	Leu	Phe	Lys	His	Asp	Pro	Glu	Ala	Trp	Glu	Met	Ala	His		
			660					665					670				
aac	act	gtg	atg	gat	ccc	gtc	ctt	ggc	gat	gaa	gag	ctt	gat	ggc	tac		2064
Asn	Thr	Val	Met	Asp	Pro	Val	Leu	Gly	Asp	Glu	Glu	Leu	Asp	Gly	Tyr		
		675					680					685					
ggt	cct	gca	gga	tac	ggt	gga	tat	gct	gat	ggc	atg	cat	atg	gat	cct		2112
Gly	Pro	Ala	Gly	Tyr	Gly	Gly	Tyr	Ala	Asp	Gly	Met	His	Met	Asp	Pro		
	690				695						700						
cta	gat	cca	gaa	atg	caa	gac	gat	ttt	agg	agc	ggc	atg	ccc	tac	aac		2160
Leu	Asp	Pro	Glu	Met	Gln	Asp	Asp	Phe	Arg	Ser	Gly	Met	Pro	Tyr	Asn		
	705				710					715					720		
tcc	atg	gcc	aga	gtc	tac	cat	gat	tac									2187
Ser	Met	Ala	Arg	Val	Tyr	His	Asp	Tyr									
				725													

<210> 56  
 <211> 729  
 <212> PRT  
 <213> Danio rerio  
 <400> 56

Met	Glu	Met	His	Met	Gly	Glu	Ala	Pro	Gly	Ser	Val	Lys	Val	Thr	Glu		
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Trp	Gln	Gln	Ser	Tyr	Tyr	Gly	Thr	Asp	Ser	Gly	Ile	His	Ser	Gly	Ala		
			20					25					30				
Thr	Thr	Val	Arg	Ser	Asp	Asp	Asp	Gly	Thr	Glu	Tyr	Ser	Ser	Lys	Lys		
		35					40					45					
Phe	Thr	Tyr	Thr	Thr	Thr	Phe	Thr	Glu	Asn	Pro	Ala	Glu	Val	Glu	Ser		
		50				55					60						
Gln	Leu	Asn	Met	Thr	Arg	Ala	Gln	Arg	Val	Arg	Ala	Ala	Met	Phe	Pro		
	65				70					75					80		
Glu	Thr	Val	Met	Glu	Gly	Ser	Val	Ile	His	Ser	Thr	Gln	Ile	Asp	Pro		
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Ser Gln Gln Thr Asn Val Gln Lys Leu Ala Glu Pro Ser Gln Gln Leu  
100 105 110

Lys Ala Ala Ile Val His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu  
115 120 125

Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp  
130 135 140

Gln Leu Val Val Asn Lys Ala Ala Met Ile Val Asn Gln Leu Thr Arg  
145 150 155 160

Lys Glu Ala Ser Arg Arg Ala Leu Met Gln Ser Pro Gln Met Val Ala  
165 170 175

Ala Val Val Arg Ala Met Gln Asn Thr Thr Asp Met Glu Thr Thr Arg  
180 185 190

Ala Thr Ala Ser Ile Leu His Asn Leu Ser His Gln Arg Glu Gly Leu  
195 200 205

Leu Ala Ile Phe Lys Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu  
210 215 220

Ser Ser Pro Met Asp Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His  
225 230 235 240

Asn Leu Leu Leu His Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala  
245 250 255

Asp Gly Leu Gln Arg Met Val Pro Leu Leu Lys Lys Ser Asn Pro Lys  
260 265 270

Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln Leu Leu Ser Tyr Gly Asn  
275 280 285

Gln Glu Ser Lys Leu Ile Ile Leu Ala Asn Gly Gly Pro Glu Gly Leu  
290 295 300

Val Asn Ile Met Arg Thr Tyr Asn Tyr Glu Lys Leu Leu Trp Thr Thr  
305 310 315 320

Ser Arg Val Leu Lys Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala  
325 330 335

Ile Val Asp Ala Gly Gly Met Gln Ala Leu Gly Lys His Leu Ser Gly  
340 345 350

Ser Ser Gln Arg Leu Met Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu  
355 360 365

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Ser Asp Ala Ala Thr Lys Gln Asp Gly Met Glu Asn Leu Leu Gln Val  
370 375 380

Leu Val Gly Leu Leu Ser Ala Asp Asp Ile Asn Met Leu Thr Cys Ala  
385 390 395 400

Thr Gly Val Leu Ser Asn Leu Thr Cys Asn Asn Thr Arg Asn Lys Thr  
405 410 415

Gln Val Thr Gln Ser Asn Gly Val Glu Ala Leu Ile His Thr Ile Leu  
420 425 430

Arg Ala Ser Ser Lys Gln Asp Val Ile Glu Pro Ala Val Cys Ala Leu  
435 440 445

Arg His Leu Thr Ser Arg His Pro Glu Ala Glu Thr Ala Gln Asn Ala  
450 455 460

Val Arg Met His Tyr Gly Ile Pro Ala Ile Val Lys Leu Leu Asn Gln  
465 470 475 480

Pro Tyr His Trp Pro Val Val Lys Ala Val Val Gly Leu Ile Arg Asn  
485 490 495

Leu Ala Leu Cys Pro Ala Asn Gln Ala Pro Leu Arg Asp Ala Asp Ala  
500 505 510

Ile Pro Lys Leu Val Thr Leu Leu Ser Lys Ala His Gln Asp Ala Gln  
515 520 525

Lys Pro Gly Ser Ser Ala Gln Arg Ser Tyr Gln Asp Gly Val Arg Met  
530 535 540

Glu Glu Ile Val Glu Gly Cys Thr Gly Ala Leu His Ile Met Ala Arg  
545 550 555 560

Asp Pro Met Asn Arg Gly Thr Ile Ala Ser Met Asp Thr Ile Pro Leu  
565 570 575

Phe Val Gln Leu Leu Tyr Ser Pro Leu Asp Asn Val Lys Arg Val Ala  
580 585 590

Ala Gly Val Leu Cys Glu Leu Ala Leu Asp Lys Gln Ser Ala Glu Ile  
595 600 605

Ile Asp Ala Glu Gly Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser  
610 615 620

Ser Asn Glu Gly Ile Ala Thr Tyr Ala Ala Ala Val Leu Tyr Arg Thr  
625 630 635 640



Ala Glu Asp Lys Asn Pro Asp Tyr Lys Lys Arg Val Ser Val Glu Leu  
645 650 655

Thr His Ser Leu Phe Lys His Asp Pro Glu Ala Trp Glu Met Ala His  
660 665 670

Asn Thr Val Met Asp Pro Val Leu Gly Asp Glu Glu Leu Asp Gly Tyr  
675 680 685

Gly Pro Ala Gly Tyr Gly Gly Tyr Ala Asp Gly Met His Met Asp Pro  
690 695 700

Leu Asp Pro Glu Met Gln Asp Asp Phe Arg Ser Gly Met Pro Tyr Asn  
705 710 715 720

Ser Met Ala Arg Val Tyr His Asp Tyr  
725

<210> 57  
<211> 2211  
<212> DNA  
<213> *Xenopus tropicalis*

<220>  
<221> CDS  
<222> (1)..(2211)

<400> 57  
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cag aaa acc tac act tac gac tcg ggc atc aat tct gga ata aac aca 96  
Gln Lys Thr Tyr Thr Tyr Asp Ser Gly Ile Asn Ser Gly Ile Asn Thr  
20 25 30  
gcg tct cca tcg tta aac ggg aaa atg gtc atc gag gac gac agc cat 144  
Ala Ser Pro Ser Leu Asn Gly Lys Met Val Ile Glu Asp Asp Ser His  
35 40 45  
gcc tac ccc ggc agt tac act gtt aaa acc acg acg tac aca cag cag 192  
Ala Tyr Pro Gly Ser Tyr Thr Val Lys Thr Thr Thr Tyr Thr Gln Gln  
50 55 60  
cag acc cca gac atg gac gcc cag ata aac atg act cga gcc cag cgc 240  
Gln Thr Pro Asp Met Asp Ala Gln Ile Asn Met Thr Arg Ala Gln Arg  
65 70 75 80  
gtc cga gca gca atg tac cca gag acg gtg gaa gat cac tcg tac ctt 288  
Val Arg Ala Ala Met Tyr Pro Glu Thr Val Glu Asp His Ser Tyr Leu  
85 90 95  
ctg act acc cag ata gaa ggg cag caa acc aac gtg cag aaa ctg gcg 336  
Leu Thr Thr Gln Ile Glu Gly Gln Gln Thr Asn Val Gln Lys Leu Ala  
100 105 110  
gaa ccc tcc caa atg ttg aaa tct gct atc atc cac ctt atc aac tac 384  
Glu Pro Ser Gln Met Leu Lys Ser Ala Ile Ile His Leu Ile Asn Tyr  
115 120 125  
cag gat gat gct gag ctt gcc acc cgc gcc att ccg gaa ctg aca aag 432  
Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys  
130 135 140 145 150

## PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

	130				135				140				145				
cta Leu 145	ctt Leu	aat Asn	gat Asp	gag Glu	gat Asp 150	ccg Pro	atg Met	gtg Val	gtg Val	aac Asn 155	aag Lys	gct Ala	tcc Ser	atg Met	att Ile 160	480	
gta Val	aac Asn	cag Gln	ctg Leu	tcc Ser 165	aag Lys	aaa Lys	gag Glu	gca Ala	tcc Ser 170	cgc Arg	aaa Lys	gcc Ala	ctg Leu	atg Met 175	cag Gln	528	
tcc Ser	ccg Pro	cag Gln	att Ile 180	gtt Val	gcc Ala	gct Ala	gta Val	gtt Val 185	cgc Arg	acc Thr	atg Met	cag Gln	cac His 190	aca Thr	agt Ser	576	
gac Asp	atg Met	gac Asp 195	acc Thr	gct Ala	cgc Arg	tgt Cys	acc Thr 200	acc Thr	agc Ser	atc Ile	ctg Leu	cac His 205	aac Asn	ctg Leu	tcc Ser	624	
cat His	cac His 210	cgc Arg	gag Glu	ggg Gly	ctt Leu	ctg Leu 215	tct Ser	atc Ile	ttc Phe	aaa Lys	tcc Ser 220	ggc Gly	ggc Gly	atc Ile	cct Pro	672	
gca Ala 225	ctt Leu	gtg Val	cgc Arg	atg Met	ctc Leu 230	agt Ser	tct Ser	cca Pro	gta Val	gaa Glu 235	tcc Ser	gtg Val	tta Leu	ttc Phe	tat Tyr 240	720	
gcc Ala	atc Ile	acc Thr	acc Thr	ttg Leu 245	cac His	aac Asn	ctg Leu	ctg Leu	ctc Leu 250	tac Tyr	cag Gln	gaa Glu	ggg Gly	gca Ala 255	aag Lys	768	
atg Met	gca Ala	gtg Val	cgt Arg 260	ctg Leu	gca Ala	gat Asp	ggg Gly	ctc Leu 265	cag Gln	aag Lys	atg Met	gtg Val	cct Pro 270	ttg Leu	ctt Leu	816	
aat Asn	aag Lys	aat Asn 275	aac Asn	ccc Pro	aaa Lys	ttc Phe	ttg Leu 280	gcc Ala	atc Ile	act Thr	aca Thr	gac Asp 285	tgc Cys	ctt Leu	cag Gln	864	
ctc Leu	ttg Leu 290	gcc Ala	tat Tyr	gga Gly	aat Asn	cag Gln 295	gag Glu	agc Ser	aag Lys	cta Leu	att Ile 300	ata Ile	ttg Leu	gcc Ala	aat Asn	912	
gga Gly 305	gga Gly	cct Pro	caa Gln	ggg Gly	ttg Leu 310	gtt Val	cag Gln	atc Ile	atg Met	agg Arg 315	aac Asn	tac Tyr	aat Asn	tac Tyr	gag Glu 320	960	
aag Lys	ctt Leu	ctg Leu	tgg Trp	acc Thr 325	aca Thr	agc Ser	cgg Arg	gtg Val	cta Leu 330	aaa Lys	gta Val	ttg Leu	tct Ser	gtg Val 335	tgt Cys	1008	
ccc Pro	agc Ser	aat Asn	aaa Lys 340	cca Pro	gcc Ala	att Ile	gtg Val	gaa Glu 345	gcc Ala	ggg Gly	gga Gly	atg Met	caa Gln 350	gca Ala	ctg Leu	1056	
ggg Gly	aaa Lys	cat His 355	ctg Leu	acc Thr	agc Ser	aac Asn	agc Ser 360	cca Pro	aga Arg	ctt Leu	gta Val	cag Gln 365	aac Asn	tgc Cys	ctg Leu	1104	
tgg Trp	aca Thr 370	tta Leu	agg Arg	aat Asn	ctc Leu	tct Ser 375	gat Asp	gtg Val	gcc Ala	act Thr	aaa Lys 380	cag Gln	gag Glu	ggc Gly	ctg Leu	1152	
gat Asp 385	aac Asn	gtt Val	cta Leu	aag Lys	atc Ile 390	ctg Leu	gtg Val	aac Asn	cag Gln	ctg Leu 395	agt Ser	tct Ser	gat Asp	gat Asp	gta Val 400	1200	
aac Asn	gtc Val	ctc Leu	acc Thr	tgt Cys 405	gcc Ala	act Thr	ggc Gly	aca Thr	ttg Leu 410	tcc Ser	aac Asn	ctc Leu	acc Thr	tgc Cys 415	aac Asn	1248	

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aac Asn	ggt Gly	cgc Arg	aac Asn 420	aag Lys	act Thr	ctc Leu	gtg Val	acg Thr 425	cag Gln	agc Ser	aac Asn	ggg Gly	ggt Val 430	gag Glu	tct Ser	1296
ctg Leu	att Ile	cac His 435	acc Thr	atc Ile	ctt Leu	cgt Arg	gcg Ala 440	agt Ser	gac Asp	aag Lys	gat Asp	gac Asp 445	att Ile	gca Ala	gag Glu	1344
cct Pro	gct Ala 450	gtc Val	tgt Cys	gcc Ala	ctg Leu	cgt Arg 455	cac His	ctg Leu	acc Thr	agt Ser	cgc Arg 460	cac His	caa Gln	gac Asp	gca Ala	1392
gag Glu 465	gtg Val	gct Ala	cag Gln	aat Asn	tca Ser 470	gtg Val	cga Arg	ctg Leu	cac His	tac Tyr 475	ggc Gly	atc Ile	cct Pro	gcc Ala	att Ile 480	1440
gtg Val	aaa Lys	ctt Leu	ctc Leu	aac Asn 485	cca Pro	cca Pro	tac Tyr	cag Gln	tgg Trp 490	cca Pro	ctg Leu	gtc Val	aag Lys	gca Ala 495	acc Thr	1488
atc Ile	ggc Gly	tgt Leu	atc Ile 500	cgg Arg	aac Asn	ctg Leu	gcc Ala	ctt Leu 505	tgt Cys	cca Pro	gcc Ala	aat Asn	cat His 510	gct Ala	ccc Pro	1536
tta Leu	tac Tyr	gat Asp 515	gca Ala	ggt Gly	gtc Val	att Ile	ccc Pro 520	agg Arg	cta Leu	gtc Val	cag Gln	ctg Leu 525	ctg Leu	ggt Val	aaa Lys	1584
gct Ala	cac His 530	caa Gln	gat Asp	gca Ala	cag Gln	agg Arg 535	cat His	gca Ala	gct Ala	tcc Ser	ggg Gly 540	gca Ala	cag Gln	caa Gln	ccc Pro	1632
tac Tyr 545	acg Thr	gat Asp	gga Gly	gtg Val	aag Lys 550	atg Met	gaa Glu	gag Glu	att Ile	gtg Val 555	gaa Glu	ggt Gly	tgc Cys	act Thr	ggg Gly 560	1680
gct Ala	ctg Leu	cat His	att Ile	ctt Leu 565	gcc Ala	agg Arg	gat Asp	cct Pro	gtg Val 570	aac Asn	cgt Arg	atg Met	gac Asp	atc Ile 575	tac Tyr	1728
aag Lys	cta Leu	aac Asn	acc Thr 580	atc Ile	ccg Pro	ctg Leu	ttt Phe	gta Val 585	cag Gln	ctc Leu	ctg Leu	tat Tyr	tcc Ser 590	cct Pro	gtg Val	1776
gag Glu	aac Asn	att Ile 595	cag Gln	aga Arg	gtg Val	gcc Ala	gcg Ala 600	ggc Gly	gtg Val	ctg Leu	tgt Cys	gag Glu 605	ttg Leu	gct Ala	cag Gln	1824
gat Asp	aaa Lys 610	gaa Glu	gcg Ala	gca Ala	gac Asp	acc Thr 615	att Ile	gat Asp	gca Ala	gag Glu	gga Gly 620	gcc Ala	tca Ser	gcc Ala	cca Pro	1872
ctc Leu 625	atg Met	gaa Glu	ttg Leu	ctg Leu	cac His 630	tcc Ser	cgc Arg	aat Asn	gaa Glu	ggc Gly 635	ata Ile	gcc Ala	aca Thr	tat Tyr	gct Ala 640	1920
gct Ala	gct Ala	gtt Val	cta Leu	ttc Phe 645	cgc Arg	ata Ile	tcc Ser	gag Glu	gac Asp 650	aaa Lys	aac Asn	gca Ala	gat Asp	tat Tyr 655	agg Arg	1968
aag Lys	cgc Arg	gtg Val	tcc Ser 660	gtg Val	gag Glu	ctc Leu	act Thr	aat Asn 665	gcc Ala	atc Ile	ttc Phe	cga Arg	cag Gln 670	gat Asp	cct Pro	2016
gcc Ala	gcc Ala	tgg Trp 675	gaa Glu	gca Ala	gcg Ala	cag Gln	agc Ser 680	atg Met	att Ile	cct Pro	ctt Leu	aat Asn 685	gat Asp	cct Pro	tat Tyr	2064

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cca gat gaa atg gaa aat tat cga gct atg tac cct gaa gat att cca	2112
Pro Asp Glu Met Glu Asn Tyr Arg Ala Met Tyr Pro Glu Asp Ile Pro	
690	695
tta gaa cca atg gga gga gat atg gat gtg gag tat gca atg gat ggc	2160
Leu Glu Pro Met Gly Gly Asp Met Asp Val Glu Tyr Ala Met Asp Gly	
705	710
tac agt gac cac cca gtc agg ggg ggc tac tct gat aac cac atg atg	2208
Tyr Ser Asp His Pro Val Arg Gly Gly Tyr Ser Asp Asn His Met Met	
725	730
735	
gca	2211
Ala	

<210> 58  
 <211> 737  
 <212> PRT  
 <213> *Xenopus tropicalis*  
 <400> 58

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1 5 10 15
Gln Lys Thr Tyr Thr Tyr Asp Ser Gly Ile Asn Ser Gly Ile Asn Thr
20 25 30
Ala Ser Pro Ser Leu Asn Gly Lys Met Val Ile Glu Asp Asp Ser His
35 40 45
Ala Tyr Pro Gly Ser Tyr Thr Val Lys Thr Thr Thr Tyr Thr Gln Gln
50 55 60
Gln Thr Pro Asp Met Asp Ala Gln Ile Asn Met Thr Arg Ala Gln Arg
65 70 75 80
Val Arg Ala Ala Met Tyr Pro Glu Thr Val Glu Asp His Ser Tyr Leu
85 90 95
Leu Thr Thr Gln Ile Glu Gly Gln Gln Thr Asn Val Gln Lys Leu Ala
100 105 110
Glu Pro Ser Gln Met Leu Lys Ser Ala Ile Ile His Leu Ile Asn Tyr
115 120 125
Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys
130 135 140
Leu Leu Asn Asp Glu Asp Pro Met Val Val Asn Lys Ala Ser Met Ile
145 150 155 160
Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg Lys Ala Leu Met Gln
165 170 175
Ser Pro Gln Ile Val Ala Ala Val Val Arg Thr Met Gln His Thr Ser

Asp Met Asp Thr Ala Arg Cys Thr Thr Ser Ile Leu His Asn Leu Ser  
195 200 205

His His Arg Glu Gly Leu Leu Ser Ile Phe Lys Ser Gly Gly Ile Pro  
210 215 220

Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu Ser Val Leu Phe Tyr  
225 230 235 240

Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr Gln Glu Gly Ala Lys  
245 250 255

Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys Met Val Pro Leu Leu  
260 265 270

Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln  
275 280 285

Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu Ile Ile Leu Ala Asn  
290 295 300

Gly Gly Pro Gln Gly Leu Val Gln Ile Met Arg Asn Tyr Asn Tyr Glu  
305 310 315 320

Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val Cys  
325 330 335

Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala Leu  
340 345 350

Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu Val Gln Asn Cys Leu  
355 360 365

Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr Lys Gln Glu Gly Leu  
370 375 380

Asp Asn Val Leu Lys Ile Leu Val Asn Gln Leu Ser Ser Asp Asp Val  
385 390 395 400

Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser Asn Leu Thr Cys Asn  
405 410 415

Asn Gly Arg Asn Lys Thr Leu Val Thr Gln Ser Asn Gly Val Glu Ser  
420 425 430

Leu Ile His Thr Ile Leu Arg Ala Ser Asp Lys Asp Asp Ile Ala Glu  
435 440 445

Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser Arg His Gln Asp Ala  
450 455 460

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Glu Val Ala Gln Asn Ser Val Arg Leu His Tyr Gly Ile Pro Ala Ile  
 465 470 475 480  
 Val Lys Leu Leu Asn Pro Pro Tyr Gln Trp Pro Leu Val Lys Ala Thr  
 485 490 495  
 Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro  
 500 505 510  
 Leu Tyr Asp Ala Gly Val Ile Pro Arg Leu Val Gln Leu Leu Val Lys  
 515 520 525  
 Ala His Gln Asp Ala Gln Arg His Ala Ala Ser Gly Ala Gln Gln Pro  
 530 535 540  
 Tyr Thr Asp Gly Val Lys Met Glu Glu Ile Val Glu Gly Cys Thr Gly  
 545 550 555 560  
 Ala Leu His Ile Leu Ala Arg Asp Pro Val Asn Arg Met Asp Ile Tyr  
 565 570 575  
 Lys Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro Val  
 580 585 590  
 Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys Glu Leu Ala Gln  
 595 600 605  
 Asp Lys Glu Ala Ala Asp Thr Ile Asp Ala Glu Gly Ala Ser Ala Pro  
 610 615 620  
 Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly Ile Ala Thr Tyr Ala  
 625 630 635 640  
 Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys Asn Ala Asp Tyr Arg  
 645 650 655  
 Lys Arg Val Ser Val Glu Leu Thr Asn Ala Ile Phe Arg Gln Asp Pro  
 660 665 670  
 Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro Leu Asn Asp Pro Tyr  
 675 680 685  
 Pro Asp Glu Met Glu Asn Tyr Arg Ala Met Tyr Pro Glu Asp Ile Pro  
 690 695 700  
 Leu Glu Pro Met Gly Gly Asp Met Asp Val Glu Tyr Ala Met Asp Gly  
 705 710 715 720  
 Tyr Ser Asp His Pro Val Arg Gly Gly Tyr Ser Asp Asn His Met Met  
 725 730 735

Ala

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 <212> DNA  
 <213> Canis familiaris

<220>  
 <221> CDS  
 <222> (1)..(2232)

<400> 59  
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 caa cag aca tac acc tat gac tct ggc att cac tcg ggt gcc aac acc 96  
 Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr  
 20 25 30  
 tgt gtg ccc tcg gtc agc agc aag ggc atc atg gaa gag gat gag gcc 144  
 Cys Val Pro Ser Val Ser Ser Lys Gly Ile Met Glu Glu Asp Glu Ala  
 35 40 45  
 tgc ggg cgt cag tac acg ctc aag aag acc acc acc tat acc cag gtg 192  
 Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Val  
 50 55 60  
 ccc cag agc caa ggt gac ctg gag tac caa atg tcc acg aca gcc aga 240  
 Pro Gln Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala Arg  
 65 70 75 80  
 gcc aag cgg gta cgg gag gcc atg tgt cct ggc gtg aca ggc gaa gac 288  
 Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Thr Gly Glu Asp  
 85 90 95  
 agc tcg ctg cta ctg gcc acc cag gtg gaa ggg cag acc acc aac ctg 336  
 Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn Leu  
 100 105 110  
 cag cgg ctg gcc gag ccg tcc cag ctg ctc aag tca gcc atc gta cat 384  
 Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val His  
 115 120 125  
 ctc atc aac tac cag gac gac gcc gag ctg gcc acc cgg gcc ctg cct 432  
 Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu Pro  
 130 135 140  
 gaa ctc acc aaa ctg ctc aac gac gag gac ccg gtg gtg gtg acc aag 480  
 Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr Lys  
 145 150 155 160  
 gca gcc atg atc gtg aac cag ctg tcc aag aaa gag gcg tca cgg cgg 528  
 Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg Arg  
 165 170 175  
 gcg ctg atg ggc tcg ccc cag ctg gtg gca gcc gtg gtg cgt act atg 576  
 Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr Met  
 180 185 190  
 cag aac acc agt gac ctg gac aca gcc cgc tgc acc acc agc atc ctg 624  
 Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile Leu  
 195 200 205  
 cac aac ctc tcc cac cac cgc gag ggg ctg ctt gcc atc ttc aag tcg 672  
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His	Asn	Leu	Ser	His	His	Arg	Glu	Gly	Leu	Leu	Ala	Ile	Phe	Lys	Ser	
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Gly	Gly	Ile	Pro	Ala	Leu	Val	Arg	Met	Leu	Ser	Ser	Pro	Val	Glu	Ser	
225					230					235					240	
gtc	ctg	ttt	tac	gcc	atc	acc	acg	ctg	cac	aac	ctg	ctg	ctg	tac	cag	768
Val	Leu	Phe	Tyr	Ala	Ile	Thr	Thr	Leu	His	Asn	Leu	Leu	Leu	Tyr	Gln	
				245					250					255		
gag	ggc	gcc	aag	atg	gcg	gtg	cgc	ctg	gca	gat	ggg	ctg	cag	aag	atg	816
Glu	Gly	Ala	Lys	Met	Ala	Val	Arg	Leu	Ala	Asp	Gly	Leu	Gln	Lys	Met	
			260					265					270			
gtg	ccc	ctg	ctc	aac	aaa	aac	aac	ccc	aag	ttc	ctg	gcc	atc	acc	acc	864
Val	Pro	Leu	Leu	Asn	Lys	Asn	Asn	Pro	Lys	Phe	Leu	Ala	Ile	Thr	Thr	
		275					280					285				
gac	tgc	ctg	cag	ctc	ctg	gct	tat	ggc	aac	cag	gag	agc	aag	ctc	atc	912
Asp	Cys	Leu	Gln	Leu	Leu	Ala	Tyr	Gly	Asn	Gln	Glu	Ser	Lys	Leu	Ile	
	290					295					300					
atc	ttg	gcc	aat	gga	gga	ccc	cag	gcc	ctt	gtg	cag	atc	atg	cgc	aac	960
Ile	Leu	Ala	Asn	Gly	Gly	Pro	Gln	Ala	Leu	Val	Gln	Ile	Met	Arg	Asn	
305					310					315					320	
tac	agc	tat	gag	aag	ctg	ctc	tgg	acc	acc	agc	cgt	gtg	ctc	aag	gtg	1008
Tyr	Ser	Tyr	Glu	Lys	Leu	Leu	Trp	Thr	Thr	Ser	Arg	Val	Leu	Lys	Val	
				325					330					335		
ctg	tct	gtg	tgt	ccc	agc	aat	aag	cct	gcc	atc	gtg	gag	gct	ggc	ggg	1056
Leu	Ser	Val	Cys	Pro	Ser	Asn	Lys	Pro	Ala	Ile	Val	Glu	Ala	Gly	Gly	
			340					345					350			
atg	cag	gcc	ttg	ggc	aaa	cac	ctg	aca	agc	aac	agc	ccc	cgc	ctt	gta	1104
Met	Gln	Ala	Leu	Gly	Lys	His	Leu	Thr	Ser	Asn	Ser	Pro	Arg	Leu	Val	
		355					360					365				
cag	aac	tgt	ctc	tgg	acc	ttg	cgc	aac	ctc	tcg	gat	gtg	gcc	acc	aaa	1152
Gln	Asn	Cys	Leu	Trp	Thr	Leu	Arg	Asn	Leu	Ser	Asp	Val	Ala	Thr	Lys	
	370					375					380					
cag	gag	ggc	ctg	gag	agc	gtc	ctg	aag	atc	ctg	gtg	aac	cag	ctg	agt	1200
Gln	Glu	Gly	Leu	Glu	Ser	Val	Leu	Lys	Ile	Leu	Val	Asn	Gln	Leu	Ser	
385					390					395					400	
gtg	gac	gac	gtc	aat	gtc	ctc	acc	tgt	gcc	acg	ggc	act	ctg	tcc	aac	1248
Val	Asp	Asp	Val	Asn	Val	Leu	Thr	Cys	Ala	Thr	Gly	Thr	Leu	Ser	Asn	
				405					410					415		
ctg	acg	tgc	aac	aac	agc	aag	aat	aag	acg	ctg	gtg	acc	cag	aac	agc	1296
Leu	Thr	Cys	Asn	Asn	Ser	Lys	Asn	Lys	Thr	Leu	Val	Thr	Gln	Asn	Ser	
			420					425					430			
ggc	gtg	gag	gct	ctc	atc	cat	gcc	atc	ctg	cgg	gct	ggc	gac	aag	gat	1344
Gly	Val	Glu	Ala	Leu	Ile	His	Ala	Ile	Leu	Arg	Ala	Gly	Asp	Lys	Asp	
		435					440					445				
gac	atc	acg	gag	ccc	gcc	gtc	tgc	gcc	ctg	cgc	cac	ctc	acc	agc	cgc	1392
Asp	Ile	Thr	Glu	Pro	Ala	Val	Cys	Ala	Leu	Arg	His	Leu	Thr	Ser	Arg	
	450					455					460					
cac	ccg	gag	gcc	gag	atg	gcc	cag	aac	tcc	gtg	cgc	ctc	aac	tac	ggc	1440
His	Pro	Glu	Ala	Glu	Met	Ala	Gln	Asn	Ser	Val	Arg	Leu	Asn	Tyr	Gly	
465					470					475					480	
atc	ccg	gcc	att	gtc	aag	ctt	ctc	aac	cag	ccc	aac	cag	tgg	ccg	ctg	1488
Ile	Pro	Ala	Ile	Val	Lys	Leu	Leu	Asn	Gln	Pro	Asn	Gln	Trp	Pro	Leu	



gtc	aag	gca	acc	atc	ggc	ctg	atc	agg	aat	ctg	gct	ctg	tgc	cca	gca	1536
Val	Lys	Ala	Thr	Ile	Gly	Leu	Ile	Arg	Asn	Leu	Ala	Leu	Cys	Pro	Ala	
			500					505					510			
aac	cat	gcc	cca	ctg	cag	gag	gca	gca	gtt	att	ccc	cgc	ctt	gtc	cag	1584
Asn	His	Ala	Pro	Leu	Gln	Glu	Ala	Ala	Val	Ile	Pro	Arg	Leu	Val	Gln	
		515					520					525				
ttg	ctg	gtc	aag	gct	cac	cag	gat	gcc	cag	cgt	cat	gtg	gct	gca	ggc	1632
Leu	Leu	Val	Lys	Ala	His	Gln	Asp	Ala	Gln	Arg	His	Val	Ala	Ala	Gly	
	530					535					540					
aca	cag	cag	ccc	tac	acg	gac	ggg	gtg	agg	atg	gag	gag	att	gtg	gag	1680
Thr	Gln	Gln	Pro	Tyr	Thr	Asp	Gly	Val	Arg	Met	Glu	Glu	Ile	Val	Glu	
545					550					555					560	
ggc	tgc	act	gga	gcc	ctg	cac	atc	ctc	gcc	cgg	gat	ccc	atg	aac	cgc	1728
Gly	Cys	Thr	Gly	Ala	Leu	His	Ile	Leu	Ala	Arg	Asp	Pro	Met	Asn	Arg	
				565					570					575		
atg	gag	atc	ttc	cga	ctc	aac	act	ata	ccc	ctg	ttt	gta	cag	ctc	ctg	1776
Met	Glu	Ile	Phe	Arg	Leu	Asn	Thr	Ile	Pro	Leu	Phe	Val	Gln	Leu	Leu	
			580					585					590			
tac	tcg	tca	gtg	gag	aac	atc	cag	cgc	gtg	gct	gcc	ggg	gtg	ctg	tgt	1824
Tyr	Ser	Ser	Val	Glu	Asn	Ile	Gln	Arg	Val	Ala	Ala	Gly	Val	Leu	Cys	
		595					600					605				
gag	ctg	gcc	cag	gac	aag	gag	gca	gct	gat	gca	att	gat	gct	gag	ggg	1872
Glu	Leu	Ala	Gln	Asp	Lys	Glu	Ala	Ala	Asp	Ala	Ile	Asp	Ala	Glu	Gly	
	610					615					620					
gcc	tca	gct	cca	ctc	atg	gag	cta	ctg	cac	tcc	cgc	aat	gag	ggc	acc	1920
Ala	Ser	Ala	Pro	Leu	Met	Glu	Leu	Leu	His	Ser	Arg	Asn	Glu	Gly	Thr	
625					630					635					640	
gcc	acc	tac	gct	gcg	gct	gtc	ctg	ttc	cgc	atc	tcc	gag	gac	aag	aac	1968
Ala	Thr	Tyr	Ala	Ala	Ala	Val	Leu	Phe	Arg	Ile	Ser	Glu	Asp	Lys	Asn	
				645					650					655		
cca	gat	tac	cgt	aaa	cgc	gta	tct	gtg	gag	ctc	acc	aac	tcc	ctc	ttc	2016
Pro	Asp	Tyr	Arg	Lys	Arg	Val	Ser	Val	Glu	Leu	Thr	Asn	Ser	Leu	Phe	
			660					665					670			
aag	cat	gac	cca	gct	gca	tgg	gag	gct	gcc	cag	agc	atg	atc	ccc	atc	2064
Lys	His	Asp	Pro	Ala	Ala	Trp	Glu	Ala	Ala	Gln	Ser	Met	Ile	Pro	Ile	
		675				680						685				
aat	gag	ccc	tac	gca	gat	gac	atg	gac	gcc	acc	tac	cgc	ccc	atg	tac	2112
Asn	Glu	Pro	Tyr	Ala	Asp	Asp	Met	Asp	Ala	Thr	Tyr	Arg	Pro	Met	Tyr	
	690					695					700					
tcg	agt	gat	gtg	ccc	ctg	gac	ccc	ctg	gac	atg	cac	atg	gac	atg	gac	2160
Ser	Ser	Asp	Val	Pro	Leu	Asp	Pro	Leu	Asp	Met	His	Met	Asp	Met	Asp	
705					710					715					720	
gcg	gac	tat	ccc	atc	gac	act	tac	agc	gac	ggc	ctg	agg	ccc	ccc	tac	2208
Ala	Asp	Tyr	Pro	Ile	Asp	Thr	Tyr	Ser	Asp	Gly	Leu	Arg	Pro	Pro	Tyr	
				725					730					735		
ccc	acg	gcg	gac	cat	atg	ctg	gcc									2232
Pro	Thr	Ala	Asp	His	Met	Leu	Ala									
			740													

<210> 60  
<211> 744

&lt;212&gt; PRT

&lt;213&gt; Canis familiaris

&lt;400&gt; 60

Met Glu Val Met Asn Leu Ile Glu Gln Pro Ile Lys Val Thr Glu Trp  
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Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr  
 20 25 30

Cys Val Pro Ser Val Ser Ser Lys Gly Ile Met Glu Glu Asp Glu Ala  
 35 40 45

Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Val  
 50 55 60

Pro Gln Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala Arg  
 65 70 75 80

Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Thr Gly Glu Asp  
 85 90 95

Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn Leu  
 100 105 110

Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val His  
 115 120 125

Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu Pro  
 130 135 140

Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr Lys  
 145 150 155 160

Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg Arg  
 165 170 175

Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr Met  
 180 185 190

Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile Leu  
 195 200 205

His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys Ser  
 210 215 220

Gly Gly Ile Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu Ser  
 225 230 235 240

Val Leu Phe Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr Gln  
 245 250 255

Glu Gly Ala Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys Met  
 260 265 270  
 Val Pro Leu Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr Thr  
 275 280 285  
 Asp Cys Leu Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu Ile  
 290 295 300  
 Ile Leu Ala Asn Gly Gly Pro Gln Ala Leu Val Gln Ile Met Arg Asn  
 305 310 315 320  
 Tyr Ser Tyr Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys Val  
 325 330 335  
 Leu Ser Val Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly Gly  
 340 345 350  
 Met Gln Ala Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu Val  
 355 360 365  
 Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr Lys  
 370 375 380  
 Gln Glu Gly Leu Glu Ser Val Leu Lys Ile Leu Val Asn Gln Leu Ser  
 385 390 395 400  
 Val Asp Asp Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser Asn  
 405 410 415  
 Leu Thr Cys Asn Asn Ser Lys Asn Lys Thr Leu Val Thr Gln Asn Ser  
 420 425 430  
 Gly Val Glu Ala Leu Ile His Ala Ile Leu Arg Ala Gly Asp Lys Asp  
 435 440 445  
 Asp Ile Thr Glu Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser Arg  
 450 455 460  
 His Pro Glu Ala Glu Met Ala Gln Asn Ser Val Arg Leu Asn Tyr Gly  
 465 470 475 480  
 Ile Pro Ala Ile Val Lys Leu Leu Asn Gln Pro Asn Gln Trp Pro Leu  
 485 490 495  
 Val Lys Ala Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala  
 500 505 510  
 Asn His Ala Pro Leu Gln Glu Ala Ala Val Ile Pro Arg Leu Val Gln  
 515 520 525  
 Leu Leu Val Lys Ala His Gln Asp Ala Gln Arg His Val Ala Ala Gly  
 Seite 263

530

535

540

Thr Gln Gln Pro Tyr Thr Asp Gly Val Arg Met Glu Glu Ile Val Glu  
545 550 555 560

Gly Cys Thr Gly Ala Leu His Ile Leu Ala Arg Asp Pro Met Asn Arg  
565 570 575

Met Glu Ile Phe Arg Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu  
580 585 590

Tyr Ser Ser Val Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys  
595 600 605

Glu Leu Ala Gln Asp Lys Glu Ala Ala Asp Ala Ile Asp Ala Glu Gly  
610 615 620

Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly Thr  
625 630 635 640

Ala Thr Tyr Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys Asn  
645 650 655

Pro Asp Tyr Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu Phe  
660 665 670

Lys His Asp Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro Ile  
675 680 685

Asn Glu Pro Tyr Ala Asp Asp Met Asp Ala Thr Tyr Arg Pro Met Tyr  
690 695 700

Ser Ser Asp Val Pro Leu Asp Pro Leu Asp Met His Met Asp Met Asp  
705 710 715 720

Ala Asp Tyr Pro Ile Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro Tyr  
725 730 735

Pro Thr Ala Asp His Met Leu Ala  
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<212> DNA  
<213> Xenopus laevis

<220>  
<221> CDS  
<222> (1)..(2214)

<400> 61  
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Met Asp Leu Gly Asp Val Val Glu Met Pro Met Lys Val Thr Glu Trp  
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PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

cag Gln	aaa Lys	acc Thr	tac Tyr 20	act Thr	tac Tyr	gac Asp	tcg Ser	ggc Gly 25	atc Ile	aac Asn	tct Ser	gga Gly 30	ata Ile	aac Asn	acg Thr	96
tct Ser	gtt Val	cca Pro 35	tca Ser	ttg Leu	aat Asn	ggg Gly 40	aaa Lys	atg Met	gtc Val	att Ile	gag Glu	gac Asp 45	gac Asp	agt Ser	ctg Leu	144
gcc Ala	tat Tyr 50	ccc Pro	aac Asn	agt Ser	tac Tyr	acc Thr 55	act Thr	gtc Val	aaa Lys	acc Thr	aca Thr 60	aca Thr	tac Tyr	aca Thr	cag Gln	192
cag Gln 65	cag Gln	aat Asn	cca Pro	gac Asp	atg Met 70	gaa Glu	tcc Ser	cac His	tta Leu	aac Asn 75	atg Met	act Thr	cgg Arg	gcc Ala	cag Gln 80	240
cgt Arg	gtc Val	cga Arg	gca Ala	gcg Ala 85	atg Met	tat Tyr	ccg Pro	gag Glu	acg Thr 90	gtg Val	gaa Glu	gac Asp	cac His	tcg Ser 95	tat Tyr	288
ctg Leu	ttc Phe	agc Ser	aca Thr 100	cag Gln	ata Ile	gaa Glu	ggg Gly	cag Gln 105	caa Gln	aca Thr	aat Asn	gtg Val 110	cag Gln 110	aaa Lys	ctg Leu	336
gca Ala	gaa Glu	ccc Pro 115	tct Ser	caa Gln	atg Met	tta Leu	aaa Lys 120	tct Ser	gcc Ala	atc Ile	atg Met	cac His 125	ctt Leu	atc Ile	aac Asn	384
tac Tyr	cag Gln 130	gac Asp	gat Asp	gct Ala	gag Glu	ctg Leu 135	gcc Ala	acc Thr	cgt Arg	gcc Ala	att Ile 140	cct Pro	gaa Glu	ctg Leu	acc Thr	432
aag Lys 145	ctt Leu	ctt Leu	aat Asn	gat Asp	gag Glu 150	gat Asp	ccg Pro	atg Met	gtg Val 155	gtg Val 155	aac Asn	aag Lys	gct Ala	tcc Ser	atg Met 160	480
att Ile	gta Val	aac Asn	cag Gln	ctg Leu 165	tcc Ser	aag Lys	aag Lys	gaa Glu 170	gcg Ala 170	tca Ser	cgc Arg	aaa Lys	gcc Ala	ctc Leu 175	atg Met	528
cag Gln	tct Ser	ccc Pro	cag Gln 180	att Ile	gtg Val	gca Ala	gcc Ala	ata Ile 185	gtt Val	cgc Arg	acc Thr	atg Met	caa Gln 190	cac His	aca Thr	576
agt Ser	gac Asp	atg Met 195	gac Asp	act Thr	gct Ala	cgc Arg	tgt Cys 200	aca Thr	acc Thr	agc Ser	att Ile	ctg Leu 205	cac His	aac Asn	ctc Leu	624
tcc Ser	cac His 210	cac His	cgc Arg	gag Glu	ggg Gly	ctt Leu 215	ctg Leu	tct Ser	atc Ile	ttc Phe	aag Lys 220	tcc Ser	ggg Gly	ggc Gly	atc Ile	672
cct Pro 225	gca Ala	ctg Leu	gtg Val	cgc Arg	atg Met 230	ctc Leu	agt Ser	tct Ser	cca Pro	gta Val 235	gaa Glu	tct Ser	gtg Val	cta Leu	ttc Phe 240	720
tat Tyr	gcc Ala	atc Ile	acc Thr 245	acc Thr	ttg Leu	cac His	aac Asn	ctg Leu 250	ctc Leu	ctc Leu	tac Tyr	cag Gln	gaa Glu	ggg Gly 255	gca Ala	768
aag Lys	atg Met	gca Ala	gtg Val 260	cgt Arg	ctg Leu	gca Ala	gat Asp	ggg Gly 265	ctc Leu	caa Gln	aag Lys	atg Met	gtg Val 270	ccc Pro	ttg Leu	816
ctt Leu	aat Asn	aag Lys 275	aat Asn	aac Asn	ccc Pro	aag Lys	ttc Phe 280	ttg Leu	gcc Ala	atc Ile	acc Thr	aca Thr 285	gac Asp	tgt Cys	ctg Leu	864

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caa Gln	ctt Leu	ctg Leu	gcc Ala	tac Tyr	gga Gly	aat Asn	cag Gln	gag Glu	agc Ser	aag Lys	cta Leu	att Ile	ata Ile	ttg Leu	ggc Gly	912
290	290					295					300					
aat Asn	gga Gly	ggc Gly	ccc Pro	caa Gln	ggt Gly	ttg Leu	gtt Val	cag Gln	atc Ile	atg Met	agg Arg	aac Asn	tac Tyr	aat Asn	tac Tyr	960
305					310					315					320	
gag Glu	aag Lys	ctt Leu	ctg Leu	tgg Trp	acc Thr	act Thr	agc Ser	cgg Arg	gtg Val	cta Leu	aaa Lys	gta Val	ttg Leu	tct Ser	gta Val	1008
				325					330					335		
tgt Cys	ccc Pro	agc Ser	aat Asn	aag Lys	cca Pro	gcc Ala	att Ile	gtg Val	gaa Glu	gct Ala	ggg Gly	gga Gly	atg Met	caa Gln	gct Ala	1056
			340					345					350			
ctg Leu	ggg Gly	aaa Lys	cat His	ctg Leu	acc Thr	agc Ser	aac Asn	agc Ser	cca Pro	aga Arg	ctt Leu	gta Val	cag Gln	aac Asn	tgc Cys	1104
		355					360					365				
ctg Leu	tgg Trp	aca Thr	tta Leu	aga Arg	aat Asn	ctc Leu	tct Ser	gat Asp	gtg Val	gcc Ala	aca Thr	aaa Lys	cag Gln	gag Glu	ggc Gly	1152
	370					375					380					
ctg Leu	gat Asp	aac Asn	gtt Val	ctg Leu	aag Lys	atc Ile	ctg Leu	gtg Val	aac Asn	cag Gln	ctg Leu	agc Ser	tcc Ser	gat Asp	gat Asp	1200
	385				390					395					400	
gtc Val	aac Asn	gtc Val	ctc Leu	acc Thr	tgt Cys	gcc Ala	act Thr	ggc Gly	act Thr	ttg Leu	tcc Ser	aac Asn	tta Leu	acc Thr	tgc Cys	1248
				405				410						415		
aac Asn	aac Asn	ggt Gly	cgc Arg	aac Asn	aag Lys	act Thr	ctg Leu	gtg Val	acc Thr	cag Gln	agc Ser	aat Asn	ggg Gly	gtg Val	gaa Glu	1296
			420					425					430			
tct Ser	ctc Leu	att Ile	cac His	acc Thr	atc Ile	ctc Leu	cgt Arg	gca Ala	agt Ser	gac Asp	aag Lys	gac Asp	gac Asp	att Ile	gca Ala	1344
		435					440					445				
gag Glu	cct Pro	gcg Ala	gtc Val	tgt Cys	gcc Ala	atg Met	cgc Arg	cat His	ctt Leu	acc Thr	agt Ser	cgc Arg	cac His	cag Gln	gat Asp	1392
	450					455					460					
gct Ala	gag Glu	gta Val	gcg Ala	cag Gln	aac Asn	tct Ser	gtg Val	cga Arg	ctt Leu	cac His	tac Tyr	ggc Gly	atc Ile	ccc Pro	gcc Ala	1440
	465				470					475					480	
att Ile	gtg Val	aaa Lys	ctt Leu	ctc Leu	aac Asn	cca Pro	cca Pro	tac Tyr	cag Gln	tgg Trp	cca Pro	ctg Leu	gtc Val	aag Lys	gca Ala	1488
				485					490					495		
act Thr	atc Ile	ggc Gly	ttg Leu	atc Ile	cga Arg	aat Asn	ctg Leu	gcc Ala	ctg Leu	tgt Cys	cca Pro	gcc Ala	aat Asn	cac His	gct Ala	1536
			500					505					510			
cct Pro	ttg Leu	tat Tyr	gat Asp	gcg Ala	ggt Gly	gtt Val	atc Ile	ccc Pro	cgg Arg	cta Leu	gtc Val	cag Gln	ctg Leu	ctg Leu	gtt Val	1584
		515					520					525				
aaa Lys	tct Ser	cac His	caa Gln	gat Asp	gca Ala	cag Gln	agg Arg	cat His	gct Ala	gct Ala	tct Ser	ggg Gly	aca Thr	cag Gln	caa Gln	1632
	530					535					540					
ccc Pro	tat Tyr	acg Thr	gat Asp	gga Gly	gtg Val	aag Lys	atg Met	gaa Glu	gag Glu	att Ile	gtg Val	gaa Glu	ggc Gly	tgc Cys	act Thr	1680
	545				550					555					560	
ggg	gct	ctg	cat	att	ctt	gcc	agg	gat	cct	gtg	aat	cg	atg	gac	atc	1728

Gly	Ala	Leu	His	Ile	Leu	Ala	Arg	Asp	Pro	Val	Asn	Arg	Met	Asp	Ile		
				565					570					575			
tac	aag	ctg	aac	acc	atc	cca	ctg	ttt	gtg	cag	ctc	ctg	tat	tcc	ccc	1776	
Tyr	Lys	Leu	Asn	Thr	Ile	Pro	Leu	Phe	Val	Gln	Leu	Leu	Tyr	Ser	Pro		
			580					585					590				
gtg	gag	aac	att	cag	aga	gtg	tca	agc	ggc	gtg	ctg	tgt	gag	ttg	gct	1824	
Val	Glu	Asn	Ile	Gln	Arg	Val	Ser	Ser	Gly	Val	Leu	Cys	Glu	Leu	Ala		
		595					600					605					
cag	gat	aaa	gaa	gcg	gca	gac	acc	att	gat	gca	gag	gga	gct	tcg	gcc	1872	
Gln	Asp	Lys	Glu	Ala	Ala	Asp	Thr	Ile	Asp	Ala	Glu	Gly	Ala	Ser	Ala		
	610					615					620						
cca	ctt	atg	gag	ttg	ctg	cac	tcc	cgc	aat	gaa	ggc	ata	gcc	aca	tat	1920	
Pro	Leu	Met	Glu	Leu	Leu	His	Ser	Arg	Asn	Glu	Gly	Ile	Ala	Thr	Tyr		
					630					635					640		
gct	gct	gct	gtt	ctt	ttc	cgc	ata	tcc	gag	gac	aaa	aac	gct	gat	tat	1968	
Ala	Ala	Ala	Val	Leu	Phe	Arg	Ile	Ser	Glu	Asp	Lys	Asn	Ala	Asp	Tyr		
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agg	aaa	cgt	gtg	tcc	gta	gag	ctc	aca	aat	gcc	atc	ttc	cga	cag	gac	2016	
Arg	Lys	Arg	Val	Ser	Val	Glu	Leu	Thr	Asn	Ala	Ile	Phe	Arg	Gln	Asp		
			660					665					670				
cct	gcc	gca	tgg	gaa	gca	gcg	cag	agc	atg	att	cct	ctc	aat	gac	cct	2064	
Pro	Ala	Ala	Trp	Glu	Ala	Ala	Gln	Ser	Met	Ile	Pro	Leu	Asn	Asp	Pro		
		675					680					685					
tat	tca	gat	gaa	atg	gaa	aat	tac	aga	gcg	atg	tac	cct	gaa	gat	atc	2112	
Tyr	Ser	Asp	Glu	Met	Glu	Asn	Tyr	Arg	Ala	Met	Tyr	Pro	Glu	Asp	Ile		
	690					695					700						
cca	tta	gaa	cca	atg	ggg	gga	gac	atg	gac	gtg	gag	tac	gca	atg	gat	2160	
Pro	Leu	Glu	Pro	Met	Gly	Gly	Asp	Met	Asp	Val	Glu	Tyr	Ala	Met	Asp		
					710					715					720		
ggc	tac	agc	gac	cac	cca	ggc	agg	ggc	cac	tat	gct	gat	aat	cac	atg	2208	
Gly	Tyr	Ser	Asp	His	Pro	Gly	Arg	Gly	His	Tyr	Ala	Asp	Asn	His	Met		
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atg	gca															2214	
Met	Ala																

<210> 62  
 <211> 738  
 <212> PRT  
 <213> Xenopus laevis  
 <400> 62

Met	Asp	Leu	Gly	Asp	Val	Val	Glu	Met	Pro	Met	Lys	Val	Thr	Glu	Trp
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Gln	Lys	Thr	Tyr	Thr	Tyr	Asp	Ser	Gly	Ile	Asn	Ser	Gly	Ile	Asn	Thr
			20					25					30		
Ser	Val	Pro	Ser	Leu	Asn	Gly	Lys	Met	Val	Ile	Glu	Asp	Asp	Ser	Leu
		35					40					45			
Ala	Tyr	Pro	Asn	Ser	Tyr	Thr	Thr	Val	Lys	Thr	Thr	Thr	Tyr	Thr	Gln
	50					55					60				

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Gln Gln Asn Pro Asp Met Glu Ser His Leu Asn Met Thr Arg Ala Gln  
65 70 75 80

Arg Val Arg Ala Ala Met Tyr Pro Glu Thr Val Glu Asp His Ser Tyr  
85 90 95

Leu Phe Ser Thr Gln Ile Glu Gly Gln Gln Thr Asn Val Gln Lys Leu  
100 105 110

Ala Glu Pro Ser Gln Met Leu Lys Ser Ala Ile Met His Leu Ile Asn  
115 120 125

Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr  
130 135 140

Lys Leu Leu Asn Asp Glu Asp Pro Met Val Val Asn Lys Ala Ser Met  
145 150 155 160

Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg Lys Ala Leu Met  
165 170 175

Gln Ser Pro Gln Ile Val Ala Ala Ile Val Arg Thr Met Gln His Thr  
180 185 190

Ser Asp Met Asp Thr Ala Arg Cys Thr Thr Ser Ile Leu His Asn Leu  
195 200 205

Ser His His Arg Glu Gly Leu Leu Ser Ile Phe Lys Ser Gly Gly Ile  
210 215 220

Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu Ser Val Leu Phe  
225 230 235 240

Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr Gln Glu Gly Ala  
245 250 255

Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys Met Val Pro Leu  
260 265 270

Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr Thr Asp Cys Leu  
275 280 285

Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu Ile Ile Leu Gly  
290 295 300

Asn Gly Gly Pro Gln Gly Leu Val Gln Ile Met Arg Asn Tyr Asn Tyr  
305 310 315 320

Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys Val Leu Ser Val  
325 330 335



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Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly Gly Met Gln Ala  
 340 345 350  
 Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu Val Gln Asn Cys  
 355 360 365  
 Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr Lys Gln Glu Gly  
 370 375 380  
 Leu Asp Asn Val Leu Lys Ile Leu Val Asn Gln Leu Ser Ser Asp Asp  
 385 390 395 400  
 Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser Asn Leu Thr Cys  
 405 410 415  
 Asn Asn Gly Arg Asn Lys Thr Leu Val Thr Gln Ser Asn Gly Val Glu  
 420 425 430  
 Ser Leu Ile His Thr Ile Leu Arg Ala Ser Asp Lys Asp Asp Ile Ala  
 435 440 445  
 Glu Pro Ala Val Cys Ala Met Arg His Leu Thr Ser Arg His Gln Asp  
 450 455 460  
 Ala Glu Val Ala Gln Asn Ser Val Arg Leu His Tyr Gly Ile Pro Ala  
 465 470 475 480  
 Ile Val Lys Leu Leu Asn Pro Pro Tyr Gln Trp Pro Leu Val Lys Ala  
 485 490 495  
 Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala  
 500 505 510  
 Pro Leu Tyr Asp Ala Gly Val Ile Pro Arg Leu Val Gln Leu Leu Val  
 515 520 525  
 Lys Ser His Gln Asp Ala Gln Arg His Ala Ala Ser Gly Thr Gln Gln  
 530 535 540  
 Pro Tyr Thr Asp Gly Val Lys Met Glu Glu Ile Val Glu Gly Cys Thr  
 545 550 555 560  
 Gly Ala Leu His Ile Leu Ala Arg Asp Pro Val Asn Arg Met Asp Ile  
 565 570 575  
 Tyr Lys Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro  
 580 585 590  
 Val Glu Asn Ile Gln Arg Val Ser Ser Gly Val Leu Cys Glu Leu Ala  
 595 600 605

Gln Asp Lys Glu Ala Ala Asp Thr Ile Asp Ala Glu Gly Ala Ser Ala  
610 615 620

Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly Ile Ala Thr Tyr  
625 630 635 640

Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys Asn Ala Asp Tyr  
645 650 655

Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ala Ile Phe Arg Gln Asp  
660 665 670

Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro Leu Asn Asp Pro  
675 680 685

Tyr Ser Asp Glu Met Glu Asn Tyr Arg Ala Met Tyr Pro Glu Asp Ile  
690 695 700

Pro Leu Glu Pro Met Gly Gly Asp Met Asp Val Glu Tyr Ala Met Asp  
705 710 715 720

Gly Tyr Ser Asp His Pro Gly Arg Gly His Tyr Ala Asp Asn His Met  
725 730 735

Met Ala

<210> 63  
<211> 2235  
<212> DNA  
<213> Bos taurus

<220>  
<221> CDS  
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cag cag aca tat acc tac gac tct ggc atc cac tcg ggg gcc aac acc	96
Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr	
20 25 30	
tgt gtg ccc tcg ctc agc agc aag ggc ctc ata gag gag gat gag gcc	144
Cys Val Pro Ser Leu Ser Ser Lys Gly Leu Ile Glu Glu Asp Glu Ala	
35 40 45	
tgc ggg cgc cag tac acg ctc aag aag acc acc acc tac acc cag tcg	192
Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Ser	
50 55 60	
gtg ccc ccg ggc caa ggt gac ctg gag tac cag atg tcc aca acc gcc	240
Val Pro Pro Gly Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala	
65 70 75 80	
aga gcc aag cgg gtg cgg gag gcc atg tgt ccc ggt gtg aca gga gag	288
Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Thr Gly Glu	

gac Asp	agc Ser	tcg Ser	ctg Leu 100	ctg Leu	ctc Leu	acc Thr	acc Thr	cag Gln 105	gtg Val	gag Glu	ggg Gly	cag Gln 110	acc Thr	acc Thr	aac Asn	336
ctg Leu	cag Gln	cgg Arg 115	ctg Leu	gct Ala	gag Glu	cca Pro	tcc Ser 120	caa Gln	ctc Leu	ctc Leu	aag Lys	tcg Ser 125	gcc Ala	atc Ile	gta Val	384
cat His 130	ctc Leu	atc Ile	aac Asn	tac Tyr	cag Gln	gat Asp 135	gat Asp	gct Ala	gag Glu	ctg Leu	gcc Ala 140	acc Thr	cgg Arg	gcc Ala	ctg Leu	432
cct Pro 145	gag Glu	ctc Leu	acc Thr	aag Lys	ctg Leu 150	ctc Leu	aat Asn	gat Asp	gag Glu	gac Asp 155	ccg Pro	gtg Val	gtg Val	gtg Val	acc Thr 160	480
aag Lys	gcg Ala	gcc Ala	atg Met	atc Ile 165	gtg Val	aac Asn	cag Gln	ctg Leu	tcg Ser 170	aag Lys	aag Lys	gag Glu	gcg Ala	tct Ser 175	cgg Arg	528
cgg Arg	gcg Ala	ctg Leu	atg Met 180	ggc Gly	tcg Ser	ccc Pro	cag Gln	ctg Leu 185	gtg Val	gcg Ala	gct Ala	gtc Val	gtg Val 190	cgc Arg	acc Thr	576
atg Met	cag Gln	aac Asn 195	acc Thr	agt Ser	gac Asp	ctg Leu	gac Asp 200	acg Thr	gcc Ala	cgt Arg	tgc Cys	acc Thr 205	acc Thr	agc Ser	atc Ile	624
ctg Leu	cac His 210	aac Asn	ctc Leu	tcc Ser	cac His	cac His 215	cgc Arg	gag Glu	ggg Gly	ctg Leu	ctt Leu 220	gcc Ala	atc Ile	ttc Phe	aag Lys	672
tcg Ser 225	ggc Gly	ggc Gly	atc Ile	cct Pro	gcc Ala 230	ctg Leu	gtc Val	cgc Arg	atg Met	ctc Leu 235	agc Ser	tcc Ser	cct Pro	gta Val	gag Glu 240	720
tcg Ser	gtc Val	ttg Leu	ttc Phe	tat Tyr 245	gcc Ala	atc Ile	acc Thr	acg Thr	ctg Leu 250	cac His	aac Asn	ctg Leu	ctg Leu	ctc Leu 255	tac Tyr	768
cag Gln	gag Glu	ggt Gly	gcc Ala 260	aag Lys	atg Met	gca Ala	gtg Val	cgc Arg 265	ctg Leu	gca Ala	gac Asp	ggg Gly	ctg Leu 270	cag Gln	aag Lys	816
atg Met	gtg Val	ccc Pro 275	ctg Leu	ctc Leu	aac Asn	aag Lys	aac Asn 280	aac Asn	ccc Pro	aag Lys	ttc Phe	ctg Leu 285	gcc Ala	atc Ile	acc Thr	864
acc Thr	gac Asp 290	tgc Cys	ctg Leu	cag Gln	ctc Leu	ctg Leu 295	gcc Ala	tat Tyr	ggc Gly	aac Asn	cag Gln 300	gag Glu	agc Ser	aag Lys	ctc Leu	912
atc Ile 305	atc Ile	ctg Leu	gcc Ala	aat Asn	gga Gly 310	gga Gly	ccc Pro	cag Gln	gcc Ala	ctc Leu 315	gtc Val	cag Gln	atc Ile	atg Met	cgc Arg 320	960
aac Asn	tac Tyr	agt Ser	tat Tyr	gag Glu 325	aag Lys	ctg Leu	ctc Leu	tgg Trp	acc Thr 330	acc Thr	agc Ser	cgc Arg	gtg Val	ctc Leu 335	aaa Lys	1008
gtg Val	ctg Leu	tcc Ser	gtg Val 340	tgt Cys	ccc Pro	agc Ser	aac Asn	aag Lys 345	cct Pro	gcc Ala	att Ile	gtg Val	gag Glu 350	gct Ala	ggg Gly	1056
ggg Gly	atg Met	cag Gln 355	gcc Ala	ctg Leu	ggc Gly	aag Lys	cac His 360	ctg Leu	acg Thr	agc Ser	aat Asn	agc Ser 365	ccc Pro	cgc Arg	ctt Leu	1104

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gtg Val	cag Gln 370	aac Asn	tgc Cys	ctg Leu	tgg Trp	acc Thr 375	ctg Leu	cgc Arg	aac Asn	ctc Leu	tct Ser 380	gat Asp	gtg Val	gcc Ala	acc Thr	1152
aag Lys 385	cag Gln	gag Glu	ggc Gly	ctg Leu	gag Glu 390	agc Ser	gtg Val	ctg Leu	aag Lys	att Ile 395	ctg Leu	gtg Val	aac Asn	cag Gln	ctg Leu 400	1200
agc Ser	gtg Val	gac Asp	gat Asp	gtc Val 405	aat Asn	gtc Val	ctc Leu	acc Thr	tgt Cys 410	gcc Ala	aca Thr	ggc Gly	act Thr	ctg Leu 415	tcc Ser	1248
aac Asn	ctg Leu	aca Thr	tgc Cys 420	aac Asn	aac Asn	agc Ser	aag Lys	aac Asn 425	aag Lys	acg Thr	ctg Leu	gtg Val	aca Thr 430	cag Gln	aac Asn	1296
agt Ser	ggc Gly	gtg Val 435	gag Glu	gcg Ala	ctc Leu	atc Ile	cac His 440	gcc Ala	atc Ile	ctg Leu	cgc Arg	gag Ala 445	ggc Gly	gac Asp	aag Lys	1344
gat Asp 450	gac Asp	atc Ile	acg Thr	gag Glu	ccc Pro	gct Ala 455	gtc Val	tgc Cys	gcc Ala	ctg Leu	cgc Arg 460	cac His	ctc Leu	acc Thr	agc Ser	1392
cgc Arg 465	cac His	ccc Pro	gag Glu	gcc Ala	gag Glu 470	atg Met	gcc Ala	cag Gln	aac Asn	tcc Ser 475	gtg Val	cgt Arg	ctc Leu	aac Asn	tat Tyr 480	1440
ggc Gly	atc Ile	cca Pro	gcc Ala	atc Ile 485	gtc Val	aag Lys	ctg Leu	ctc Leu	aac Asn 490	cag Gln	ccc Pro	aac Asn	cag Gln	tgg Trp 495	cca Pro	1488
ctg Leu	gtc Val	aag Lys	gca Ala 500	acc Thr	att Ile	ggc Gly	ctg Leu	atc Ile 505	agg Arg	aat Asn	ctg Leu	gcc Ala	ctg Leu 510	tgc Cys	cca Pro	1536
gcc Ala	aac Asn	cat His 515	gcc Ala	cca Pro	ctg Leu	cag Gln	gag Glu 520	gca Ala	gag Ala	gtc Val	att Ile	ccc Pro 525	cgc Arg	ctt Leu	gtc Val	1584
caa Gln 530	ctg Leu	ctg Leu	gtc Val	aag Lys	gcc Ala	cac His 535	cag Gln	gat Asp	gcc Ala	cag Gln	cgc Arg 540	cat His	gtg Val	gct Ala	gct Ala	1632
ggc Gly 545	aca Thr	cag Gln	cag Gln	ccc Pro	tac Tyr 550	acg Thr	gat Asp	ggc Gly	gtg Val	agg Arg 555	atg Met	gag Glu	gag Glu	att Ile	gtg Val 560	1680
gaa Glu	ggc Gly	tgc Cys	act Thr	gga Gly 565	gcc Ala	ctg Leu	cac His	atc Ile	ctt Leu 570	gcc Ala	cgc Arg	gat Asp	ccc Pro	atg Met 575	aac Asn	1728
cgc Arg	atg Met	gag Glu	atc Ile 580	ttc Phe	cga Arg	ctc Leu	aac Asn	acc Thr 585	atc Ile	ccc Pro	ctg Leu	ttt Phe 590	gtg Val	cag Gln	ctc Leu	1776
ctc Leu	tac Tyr	tcc Ser 595	tgc Ser	gtg Val	gag Glu	aac Asn	atc Ile 600	cag Gln	cgc Arg	gtg Val	gcc Ala	gcc Ala 605	ggg Gly	gtg Val	ctg Leu	1824
tgc Cys	gag Glu 610	ctg Leu	gcc Ala	cag Gln	gac Asp	aag Lys 615	gag Glu	gag Ala	gcc Ala	gac Asp	gcc Ala 620	att Ile	gat Asp	gag Ala	gag Glu	1872
ggc Gly 625	gag Ala	tgc Ser	gcc Ala	cca Pro	ctc Leu 630	atg Met	gag Glu	ctg Leu	ctg Leu	cac His 635	tgc Ser	cgc Arg	aac Asn	gag Glu	ggc Gly 640	1920

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acc gcc acc tac	gcc gct gcc gtc ttg ttc cgc atc tcc gag gac aag	1968
Thr Ala Thr Tyr	Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys	
	645 650 655	
aac cca gat tac	cgc aaa cgg gtg tct gtg gag ctc act aac tcc ctc	2016
Asn Pro Asp Tyr	Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu	
	660 665 670	
ttc aag cac gac	cct gcc gcc tgg gag gct gcc cag agc atg atc ccc	2064
Phe Lys His Asp	Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro	
	675 680 685	
atg aat gaa ccc	tat gct gat gac atg gac gcc acc tac cgc ccc atg	2112
Met Asn Glu Pro	Tyr Ala Asp Asp Met Asp Ala Thr Tyr Arg Pro Met	
	690 695 700	
tac tcg agc gac	gtg ccc atg gac cca ctg gag atg cac atg gac atg	2160
Tyr Ser Ser Asp	Val Pro Met Asp Pro Leu Glu Met His Met Asp Met	
	705 710 715 720	
gat gga gac tat	ccc atc gac acc tac agt gac ggc ctc agg ccc ccc	2208
Asp Gly Asp Tyr	Pro Ile Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro	
	725 730 735	
tac gca act gca	gac cac atg ctg gcc	2235
Tyr Ala Thr Ala	Asp His Met Leu Ala	
	740 745	

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 <212> PRT  
 <213> Bos taurus

<400> 64

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Gln Gln Thr Tyr	Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr
20	25 30
Cys Val Pro Ser	Leu Ser Ser Lys Gly Leu Ile Glu Glu Asp Glu Ala
35	40 45
Cys Gly Arg Gln	Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Ser
50	55 60
Val Pro Pro Gly	Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala
65	70 75 80
Arg Ala Lys Arg	Val Arg Glu Ala Met Cys Pro Gly Val Thr Gly Glu
85	90 95
Asp Ser Ser Leu	Leu Leu Thr Thr Gln Val Glu Gly Gln Thr Thr Asn
100	105 110
Leu Gln Arg Leu	Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val
115	120 125
His Leu Ile Asn	Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu

130

135

140

Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr  
 145 150 155 160

Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg  
 165 170 175

Arg Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr  
 180 185 190

Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile  
 195 200 205

Leu His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys  
 210 215 220

Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu  
 225 230 235 240

Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr  
 245 250 255

Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys  
 260 265 270

Met Val Pro Leu Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr  
 275 280 285

Thr Asp Cys Leu Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu  
 290 295 300

Ile Ile Leu Ala Asn Gly Gly Pro Gln Ala Leu Val Gln Ile Met Arg  
 305 310 315 320

Asn Tyr Ser Tyr Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys  
 325 330 335

Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly  
 340 345 350

Gly Met Gln Ala Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu  
 355 360 365

Val Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr  
 370 375 380

Lys Gln Glu Gly Leu Glu Ser Val Leu Lys Ile Leu Val Asn Gln Leu  
 385 390 395 400

Ser Val Asp Asp Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser  
 405 410 415

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Asn Leu Thr Cys Asn Asn Ser Lys Asn Lys Thr Leu Val Thr Gln Asn  
420 425 430

Ser Gly Val Glu Ala Leu Ile His Ala Ile Leu Arg Ala Gly Asp Lys  
435 440 445

Asp Asp Ile Thr Glu Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser  
450 455 460

Arg His Pro Glu Ala Glu Met Ala Gln Asn Ser Val Arg Leu Asn Tyr  
465 470 475 480

Gly Ile Pro Ala Ile Val Lys Leu Leu Asn Gln Pro Asn Gln Trp Pro  
485 490 495

Leu Val Lys Ala Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro  
500 505 510

Ala Asn His Ala Pro Leu Gln Glu Ala Ala Val Ile Pro Arg Leu Val  
515 520 525

Gln Leu Leu Val Lys Ala His Gln Asp Ala Gln Arg His Val Ala Ala  
530 535 540

Gly Thr Gln Gln Pro Tyr Thr Asp Gly Val Arg Met Glu Glu Ile Val  
545 550 555 560

Glu Gly Cys Thr Gly Ala Leu His Ile Leu Ala Arg Asp Pro Met Asn  
565 570 575

Arg Met Glu Ile Phe Arg Leu Asn Thr Ile Pro Leu Phe Val Gln Leu  
580 585 590

Leu Tyr Ser Ser Val Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu  
595 600 605

Cys Glu Leu Ala Gln Asp Lys Glu Ala Ala Asp Ala Ile Asp Ala Glu  
610 615 620

Gly Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly  
625 630 635 640

Thr Ala Thr Tyr Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys  
645 650 655

Asn Pro Asp Tyr Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu  
660 665 670

Phe Lys His Asp Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro  
675 680 685

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Met Asn Glu Pro Tyr Ala Asp Asp Met Asp Ala Thr Tyr Arg Pro Met  
690 695 700

Tyr Ser Ser Asp Val Pro Met Asp Pro Leu Glu Met His Met Asp Met  
705 710 715 720

Asp Gly Asp Tyr Pro Ile Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro  
725 730 735

Tyr Ala Thr Ala Asp His Met Leu Ala  
740 745

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<220>  
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<222> (1)..(2235)

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cag cag aca tac acc tat gac tcg ggc atc cac tcg ggg gcc aac acc	96
Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr	
20 25 30	
tgc gtg ccc tcg gtc agc agc aaa ggc ctc atg gag gag gac gag gcc	144
Cys Val Pro Ser Val Ser Ser Lys Gly Leu Met Glu Glu Asp Glu Ala	
35 40 45	
tgc ggg cgc cag tac acg ctc aaa aag acc acc acc tac acc cag gcg	192
Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Ala	
50 55 60	
gtg ccc caa agc caa ggt gac ctg gag tac cag atg tcc acg acg gcc	240
Val Pro Gln Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala	
65 70 75 80	
aga gcc aag cgg gtg cgg gag gcc atg tgt cct ggt gtg acg gga gag	288
Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Thr Gly Glu	
85 90 95	
gac agc tcg ctg ctg ctg gcc acc cag gtg gag ggg cag acc acc aac	336
Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn	
100 105 110	
ctg cag cgg ctg gcc gag cca tcc cag ctc ctc aag tcg gcc atc gtg	384
Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val	
115 120 125	
cat ctc atc aac tac cag gac gac gct gag ctg gct acc cgg gcc ctg	432
His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu	
130 135 140	
ccc gag ctc acc aaa ctg ctc aac gac gag gac ccg gtg gtg gtg acc	480
Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr	
145 150 155 160	
aag gcg gcc atg atc gtg aac cag ctg tcg aag aag gag gcg tct cgg	528



Lys	Ala	Ala	Met	Ile	Val	Asn	Gln	Leu	Ser	Lys	Lys	Glu	Ala	Ser	Arg		
				165					170					175			
cgg	gcg	ctg	atg	ggc	tcg	ccc	cag	ctg	gtg	gcg	gcc	gtc	gtg	cgc	acc		576
Arg	Ala	Leu	Met	Gly	Ser	Pro	Gln	Leu	Val	Ala	Ala	Val	Val	Arg	Thr		
			180					185					190				
atg	cag	aac	acc	agc	gac	ctg	gac	acg	gcc	cgc	tgc	acc	acc	agc	atc		624
Met	Gln	Asn	Thr	Ser	Asp	Leu	Asp	Thr	Ala	Arg	Cys	Thr	Thr	Ser	Ile		
		195					200					205					
ctg	cac	aac	ctc	tcc	cac	cac	cgc	gag	ggg	ctg	ctt	gcc	atc	ttc	aag		672
Leu	His	Asn	Leu	Ser	His	His	Arg	Glu	Gly	Leu	Leu	Ala	Ile	Phe	Lys		
	210					215					220						
tcc	ggc	ggc	atc	cct	gcc	ctg	gtc	cgc	atg	ctc	agc	tcc	ccc	gtg	gag		720
Ser	Gly	Gly	Ile	Pro	Ala	Leu	Val	Arg	Met	Leu	Ser	Ser	Pro	Val	Glu		
					230					235					240		
tcg	gtc	ctg	ttc	tac	gcc	atc	acc	acg	ctg	cac	aac	ctg	ctg	ctc	tac		768
Ser	Val	Leu	Phe	Tyr	Ala	Ile	Thr	Thr	Leu	His	Asn	Leu	Leu	Leu	Tyr		
				245					250					255			
cag	gag	ggc	gcc	aag	atg	gca	gtg	cgc	ctg	gcc	gac	ggg	ctg	cag	aag		816
Gln	Glu	Gly	Ala	Lys	Met	Ala	Val	Arg	Leu	Ala	Asp	Gly	Leu	Gln	Lys		
			260					265					270				
atg	gtg	ccc	ctg	ctg	aac	aag	aac	aac	ccc	aag	ttc	ctg	gcc	atc	acc		864
Met	Val	Pro	Leu	Leu	Asn	Lys	Asn	Asn	Pro	Lys	Phe	Leu	Ala	Ile	Thr		
		275					280					285					
acc	gac	tgc	ctg	cag	ctc	ctg	gcc	tat	ggc	aac	cag	gag	agc	aag	ctc		912
Thr	Asp	Cys	Leu	Gln	Leu	Leu	Ala	Tyr	Gly	Asn	Gln	Glu	Ser	Lys	Leu		
	290					295					300						
atc	atc	ctg	gcc	aat	gga	gga	ccc	cag	gcc	ctc	gtg	cag	atc	atg	cgc		960
Ile	Ile	Leu	Ala	Asn	Gly	Gly	Pro	Gln	Ala	Leu	Val	Gln	Ile	Met	Arg		
					310					315					320		
aac	tat	agt	tat	gag	aag	ctg	ctc	tgg	acc	acc	agc	cgc	gtg	ctt	aag		1008
Asn	Tyr	Ser	Tyr	Glu	Lys	Leu	Leu	Trp	Thr	Thr	Ser	Arg	Val	Leu	Lys		
				325					330					335			
gtg	ctg	tct	gtg	tgt	ccc	agc	aat	aag	cct	gcc	att	gtg	gag	gcc	ggg		1056
Val	Leu	Ser	Val	Cys	Pro	Ser	Asn	Lys	Pro	Ala	Ile	Val	Glu	Ala	Gly		
			340					345					350				
ggg	atg	cag	gcc	ctg	ggc	aaa	cac	ctg	aca	agc	aac	agc	cct	cgc	ctc		1104
Gly	Met	Gln	Ala	Leu	Gly	Lys	His	Leu	Thr	Ser	Asn	Ser	Pro	Arg	Leu		
		355					360					365					
gtg	cag	aac	tgc	ctc	tgg	acc	ctg	cgt	aac	ctc	tcg	gac	gtg	gcc	acc		1152
Val	Gln	Asn	Cys	Leu	Trp	Thr	Leu	Arg	Asn	Leu	Ser	Asp	Val	Ala	Thr		
	370					375					380						
aag	cag	gag	ggc	ctg	gag	agt	gtg	ctg	aag	att	ctg	gtg	aac	cag	ctg		1200
Lys	Gln	Glu	Gly	Leu	Glu	Ser	Val	Leu	Lys	Ile	Leu	Val	Asn	Gln	Leu		
					390					395					400		
agc	gtg	gac	gat	gtc	aac	gtc	ctc	acc	tgt	gcc	acg	ggc	act	ctg	tcc		1248
Ser	Val	Asp	Asp	Val	Asn	Val	Leu	Thr	Cys	Ala	Thr	Gly	Thr	Leu	Ser		
				405					410					415			
aac	ctg	acc	tgc	aac	aac	agc	aag	aac	aag	acg	ctg	gtg	acg	cag	aac		1296
Asn	Leu	Thr	Cys	Asn	Asn	Ser	Lys	Asn	Lys	Thr	Leu	Val	Thr	Gln	Asn		
			420					425					430				
agc	ggc	gtg	gag	gcg	ctc	atc	cac	gcc	atc	ctg	cgc	gcg	ggc	gac	aag		1344
Ser	Gly	Val	Glu	Ala	Leu	Ile	His	Ala	Ile	Leu	Arg	Ala	Gly	Asp	Lys		

435				440				445								
gat Asp	gac Asp 450	atc Ile	acg Thr	gag Glu	ccc Pro	gcc Ala 455	gtc Val	tgc Cys	gcc Ala	ctg Leu	cgc Arg 460	cac His	ctc Leu	acc Thr	agc Ser	1392
cgc Arg 465	cac His	ccc Pro	gag Glu	gct Ala	gag Glu 470	atg Met	gcc Ala	cag Gln	aac Asn	tcc Ser 475	gtg Val	cgc Arg	ctc Leu	aac Asn	tac Tyr 480	1440
ggc Gly	atc Ile	ccg Pro	gcc Ala	atc Ile 485	gtc Val	aag Lys	ctg Leu	ctc Leu	aat Asn 490	cag Gln	ccc Pro	aac Asn	cag Gln	tgg Trp 495	cca Pro	1488
ctg Leu	gtc Val	aag Lys	gca Ala 500	acc Thr	atc Ile	ggc Gly	ctg Leu	atc Ile 505	agg Arg	aat Asn	ctg Leu	gcc Ala	ctg Leu 510	tgc Cys	cca Pro	1536
gcc Ala	aac Asn	cac His 515	gcc Ala	cca Pro	ctg Leu	cag Gln	gag Glu 520	gca Ala	tct Ser	gtc Val	atc Ile	ccc Pro 525	cgc Arg	ctc Leu	gtc Val	1584
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ggc Gly 545	aca Thr	cag Gln	cag Gln	ccc Pro	tac Tyr 550	acg Thr	gat Asp	ggc Gly	gtg Val	agg Arg 555	atg Met	gag Glu	gag Glu	att Ile	gtg Val 560	1680
gag Glu	ggc Gly	tgc Cys	acc Thr	gga Gly 565	gcc Ala	ctg Leu	cac His	atc Ile	ctc Leu 570	gcc Ala	cgg Arg	gat Asp	ccc Pro	atg Met 575	aac Asn	1728
cgc Arg	atg Met	gag Glu	atc Ile 580	ttc Phe	cga Arg	ctc Leu	aac Asn	acc Thr 585	atc Ile	ccc Pro	ctg Leu	ttt Phe 590	gtg Val	cag Gln	ctc Leu	1776
ctg Leu	tac Tyr	tct Ser 595	tcc Ser	gtg Val	gag Glu	aac Asn	atc Ile 600	cag Gln	cgt Arg	gtg Val	gcc Ala	gca Ala 605	ggg Gly	gtg Val	ctg Leu	1824
tgc Cys	gag Glu 610	ttg Leu	gcc Ala	cag Gln	gac Asp	aag Lys 615	gag Glu	gcg Ala	gcc Ala	gac Asp	gct Ala 620	att Ile	gat Asp	gcc Ala	gag Glu	1872
ggg Gly 625	gcc Ala	tgc Ser	tcc Ser	ccc Pro	ctc Leu 630	atg Met	gag Glu	ctc Leu	ctg Leu	cac His 635	tcc Ser	cgc Arg	aat Asn	gag Glu	ggc Gly 640	1920
act Thr	gcc Ala	acc Thr	tat Tyr	gct Ala 645	gct Ala	gct Ala	gtc Val	ttg Leu	ttc Phe 650	cgc Arg	atc Ile	tct Ser	gag Glu	gac Asp 655	aag Lys	1968
aac Asn	cca Pro	gat Asp	tac Tyr 660	cgt Arg	aag Lys	cgt Arg	gtg Val	tct Ser 665	gtg Val	gaa Glu	ctc Leu	acc Thr	aac Asn 670	tcc Ser	ctc Leu	2016
ttc Phe	aag Lys	cac His 675	gac Asp	cct Pro	gca Ala	gcc Ala	tgg Trp 680	gag Glu	gct Ala	gcc Ala	cag Gln	agc Ser 685	atg Met	atc Ile	ccc Pro	2064
atc Ile	aat Asn 690	gaa Glu	ccc Pro	tat Tyr	gcc Ala	gat Asp 695	gac Asp	atg Met	gat Asp	gcc Ala	acc Thr 700	tac Tyr	cgc Arg	ccc Pro	atg Met	2112
tac Tyr 705	tca Ser	agt Ser	gat Asp	gtg Val	ccc Pro 710	ctg Leu	gac Asp	ccc Pro	ctg Leu 715	gag Glu	atg Met	cac His	atg Met	gac Asp	atg Met 720	2160

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gac ggg gac tat ccc atg gac acc tac agc gac ggc ctc agg ccc ccc 2208  
Asp Gly Asp Tyr Pro Met Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro  
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tac ccc gct gca gac cac atg ctg gcc 2235  
Tyr Pro Ala Ala Asp His Met Leu Ala  
740 745

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Gln Gln Thr Tyr Thr Tyr Asp Ser Gly Ile His Ser Gly Ala Asn Thr  
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Cys Val Pro Ser Val Ser Ser Lys Gly Leu Met Glu Glu Asp Glu Ala  
35 40 45

Cys Gly Arg Gln Tyr Thr Leu Lys Lys Thr Thr Thr Tyr Thr Gln Ala  
50 55 60

Val Pro Gln Ser Gln Gly Asp Leu Glu Tyr Gln Met Ser Thr Thr Ala  
65 70 75 80

Arg Ala Lys Arg Val Arg Glu Ala Met Cys Pro Gly Val Thr Gly Glu  
85 90 95

Asp Ser Ser Leu Leu Leu Ala Thr Gln Val Glu Gly Gln Thr Thr Asn  
100 105 110

Leu Gln Arg Leu Ala Glu Pro Ser Gln Leu Leu Lys Ser Ala Ile Val  
115 120 125

His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu Ala Thr Arg Ala Leu  
130 135 140

Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp Pro Val Val Val Thr  
145 150 155 160

Lys Ala Ala Met Ile Val Asn Gln Leu Ser Lys Lys Glu Ala Ser Arg  
165 170 175

Arg Ala Leu Met Gly Ser Pro Gln Leu Val Ala Ala Val Val Arg Thr  
180 185 190

Met Gln Asn Thr Ser Asp Leu Asp Thr Ala Arg Cys Thr Thr Ser Ile  
195 200 205

Leu His Asn Leu Ser His His Arg Glu Gly Leu Leu Ala Ile Phe Lys  
210 215 220

Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu Ser Ser Pro Val Glu  
225 230 235 240

Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His Asn Leu Leu Leu Tyr  
245 250 255

Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala Asp Gly Leu Gln Lys  
260 265 270

Met Val Pro Leu Leu Asn Lys Asn Asn Pro Lys Phe Leu Ala Ile Thr  
275 280 285

Thr Asp Cys Leu Gln Leu Leu Ala Tyr Gly Asn Gln Glu Ser Lys Leu  
290 295 300

Ile Ile Leu Ala Asn Gly Gly Pro Gln Ala Leu Val Gln Ile Met Arg  
305 310 315 320

Asn Tyr Ser Tyr Glu Lys Leu Leu Trp Thr Thr Ser Arg Val Leu Lys  
325 330 335

Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala Ile Val Glu Ala Gly  
340 345 350

Gly Met Gln Ala Leu Gly Lys His Leu Thr Ser Asn Ser Pro Arg Leu  
355 360 365

Val Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu Ser Asp Val Ala Thr  
370 375 380

Lys Gln Glu Gly Leu Glu Ser Val Leu Lys Ile Leu Val Asn Gln Leu  
385 390 395 400

Ser Val Asp Asp Val Asn Val Leu Thr Cys Ala Thr Gly Thr Leu Ser  
405 410 415

Asn Leu Thr Cys Asn Asn Ser Lys Asn Lys Thr Leu Val Thr Gln Asn  
420 425 430

Ser Gly Val Glu Ala Leu Ile His Ala Ile Leu Arg Ala Gly Asp Lys  
435 440 445

Asp Asp Ile Thr Glu Pro Ala Val Cys Ala Leu Arg His Leu Thr Ser  
450 455 460

Arg His Pro Glu Ala Glu Met Ala Gln Asn Ser Val Arg Leu Asn Tyr  
465 470 475 480

Gly Ile Pro Ala Ile Val Lys Leu Leu Asn Gln Pro Asn Gln Trp Pro  
Seite 280

Leu Val Lys Ala Thr Ile Gly Leu Ile Arg Asn Leu Ala Leu Cys Pro  
500 505 510

Ala Asn His Ala Pro Leu Gln Glu Ala Ser Val Ile Pro Arg Leu Val  
515 520 525

Gln Leu Leu Val Lys Ala His Gln Asp Ala Gln Arg His Val Ala Ala  
530 535 540

Gly Thr Gln Gln Pro Tyr Thr Asp Gly Val Arg Met Glu Glu Ile Val  
545 550 555 560

Glu Gly Cys Thr Gly Ala Leu His Ile Leu Ala Arg Asp Pro Met Asn  
565 570 575

Arg Met Glu Ile Phe Arg Leu Asn Thr Ile Pro Leu Phe Val Gln Leu  
580 585 590

Leu Tyr Ser Ser Val Glu Asn Ile Gln Arg Val Ala Ala Gly Val Leu  
595 600 605

Cys Glu Leu Ala Gln Asp Lys Glu Ala Ala Asp Ala Ile Asp Ala Glu  
610 615 620

Gly Ala Ser Ser Pro Leu Met Glu Leu Leu His Ser Arg Asn Glu Gly  
625 630 635 640

Thr Ala Thr Tyr Ala Ala Ala Val Leu Phe Arg Ile Ser Glu Asp Lys  
645 650 655

Asn Pro Asp Tyr Arg Lys Arg Val Ser Val Glu Leu Thr Asn Ser Leu  
660 665 670

Phe Lys His Asp Pro Ala Ala Trp Glu Ala Ala Gln Ser Met Ile Pro  
675 680 685

Ile Asn Glu Pro Tyr Ala Asp Asp Met Asp Ala Thr Tyr Arg Pro Met  
690 695 700

Tyr Ser Ser Asp Val Pro Leu Asp Pro Leu Glu Met His Met Asp Met  
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Asp Gly Asp Tyr Pro Met Asp Thr Tyr Ser Asp Gly Leu Arg Pro Pro  
725 730 735

Tyr Pro Ala Ala Asp His Met Leu Ala  
740 745

<210> 67  
<211> 2187

<212> DNA  
 <213> Danio rerio

<220>  
 <221> CDS  
 <222> (1)..(2187)

<400> 67  
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 Met Glu Met His Met Gly Glu Ala Pro Gly Ser Val Lys Val Thr Glu  
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 tgg cag cag tcg tac tac ggc aca gat tca ggc atc cat tca gga gcc 96  
 Trp Gln Gln Ser Tyr Tyr Gly Thr Asp Ser Gly Ile His Ser Gly Ala  
 20 25 30  
 act act gtt cgc tca gat gat gat gga aca gag tac agc tct aag aaa 144  
 Thr Thr Val Arg Ser Asp Asp Gly Thr Glu Tyr Ser Lys Lys  
 35 40 45  
 ttc acc tac acc acc aca ttc aca gag aac cct gca gag gtg gag tct 192  
 Phe Thr Tyr Thr Thr Thr Phe Thr Glu Asn Pro Ala Glu Val Glu Ser  
 50 55 60  
 cag tta aat atg act cgt gct cag cgt gtg agg gcg gcc atg ttt cct 240  
 Gln Leu Asn Met Thr Arg Ala Gln Arg Val Arg Ala Ala Met Phe Pro  
 65 70 75  
 gag act gtg atg gag gga tcg gtc att cat tct aca cag atc gat cca 288  
 Glu Thr Val Met Glu Gly Ser Val Ile His Ser Thr Gln Ile Asp Pro  
 85 90 95  
 tcc cag cag acc aat gta cag aag ctg gcc gaa cca tct cag cag ctc 336  
 Ser Gln Gln Thr Asn Val Gln Lys Leu Ala Glu Pro Ser Gln Gln Leu  
 100 105 110  
 aaa gct gcc atc gtt cac ctc atc aac tac cag gac gac gct gaa ctc 384  
 Lys Ala Ala Ile Val His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu  
 115 120 125  
 gcc aca cgc gcc atc cca gag ctc acc aaa ctc ctc aac gat gaa gac 432  
 Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp  
 130 135 140  
 cag ttg gtt gtg aac aaa gcc gct atg atc gtg aac caa ctg acc cgc 480  
 Gln Leu Val Val Asn Lys Ala Ala Met Ile Val Asn Gln Leu Thr Arg  
 145 150 155 160  
 aag gag gca tcc cgc cgg gct ctt atg cag tcc ccg cag atg gtg gcc 528  
 Lys Glu Ala Ser Arg Arg Ala Leu Met Gln Ser Pro Gln Met Val Ala  
 165 170 175  
 gct gta gtg aga gcc atg cag aac acg acc gac atg gag acg acc cgc 576  
 Ala Val Val Arg Ala Met Gln Asn Thr Thr Asp Met Glu Thr Thr Arg  
 180 185 190  
 gcc aca gcc agc atc ctg cac aac ctc tcg cac cag cgt gaa gga ctg 624  
 Ala Thr Ala Ser Ile Leu His Asn Leu Ser His Gln Arg Glu Gly Leu  
 195 200 205  
 ctc gcc atc ttc aaa tca ggc ggc att cca gct ctg gtg cgc atg ctg 672  
 Leu Ala Ile Phe Lys Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu  
 210 215 220  
 agc tct ccg atg gac tct gta ctt ttc tac gcc atc acc acc ctg cac 720  
 Ser Ser Pro Met Asp Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His  
 225 230 235 240

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aac	ctg	ctt	ttg	cac	caa	gag	gga	gcc	aag	atg	gcg	gtg	cgt	ctg	gct	768
Asn	Leu	Leu	Leu	His	Gln	Glu	Gly	Ala	Lys	Met	Ala	Val	Arg	Leu	Ala	
				245					250					255		
gat	ggg	ctc	cag	agg	atg	gtt	ccc	ctg	ctg	aag	aaa	agc	aac	ccc	aaa	816
Asp	Gly	Leu	Gln	Arg	Met	Val	Pro	Leu	Leu	Lys	Lys	Ser	Asn	Pro	Lys	
			260					265					270			
ttc	ctg	gcc	atc	acc	aca	gac	tgc	ttg	cag	ctg	ctg	tcc	tat	ggc	aac	864
Phe	Leu	Ala	Ile	Thr	Thr	Asp	Cys	Leu	Gln	Leu	Leu	Ser	Tyr	Gly	Asn	
		275					280					285				
cag	gag	agc	aag	ctg	att	atc	ctg	gct	aat	ggg	ggg	cct	gag	ggg	ctt	912
Gln	Glu	Ser	Lys	Leu	Ile	Ile	Leu	Ala	Asn	Gly	Gly	Pro	Glu	Gly	Leu	
	290					295					300					
gtc	aac	atc	atg	agg	act	tac	aac	tat	gag	aag	ctg	ctg	tgg	acc	acc	960
Val	Asn	Ile	Met	Arg	Thr	Tyr	Asn	Tyr	Glu	Lys	Leu	Leu	Trp	Thr	Thr	
	305				310					315					320	
agt	cgt	gtg	ctg	aaa	gtg	ctc	tct	gtc	tgt	cca	agc	aac	aag	cct	gcc	1008
Ser	Arg	Val	Leu	Lys	Val	Leu	Ser	Val	Cys	Pro	Ser	Asn	Lys	Pro	Ala	
				325					330					335		
atc	gta	gat	gct	ggg	gga	atg	caa	gct	ctt	ggg	aaa	cat	ctg	tcc	ggc	1056
Ile	Val	Asp	Ala	Gly	Gly	Met	Gln	Ala	Leu	Gly	Lys	His	Leu	Ser	Gly	
			340					345					350			
tca	agt	cag	cgt	ctg	atg	caa	aac	tgc	ttg	tgg	act	ttg	aga	aac	ttg	1104
Ser	Ser	Gln	Arg	Leu	Met	Gln	Asn	Cys	Leu	Trp	Thr	Leu	Arg	Asn	Leu	
		355					360					365				
tca	gat	gct	gca	acc	aaa	cag	gac	ggg	atg	gag	aat	ctt	ctt	caa	gtc	1152
Ser	Asp	Ala	Ala	Thr	Lys	Gln	Asp	Gly	Met	Glu	Asn	Leu	Leu	Gln	Val	
	370					375					380					
ttg	gtc	ggg	ctg	ctg	tct	gct	gat	gac	atc	aac	atg	ctg	acc	tgt	gcc	1200
Leu	Val	Gly	Leu	Leu	Ser	Ala	Asp	Asp	Ile	Asn	Met	Leu	Thr	Cys	Ala	
	385				390					395					400	
aca	ggc	gtc	ctg	tcc	aac	ctc	acc	tgc	aac	aac	aca	cgc	aac	aaa	acg	1248
Thr	Gly	Val	Leu	Ser	Asn	Leu	Thr	Cys	Asn	Asn	Thr	Arg	Asn	Lys	Thr	
				405					410					415		
cag	gtg	acc	cag	agt	aac	ggc	gtg	gag	gct	ctt	att	cac	acc	atc	ctg	1296
Gln	Val	Thr	Gln	Ser	Asn	Gly	Val	Glu	Ala	Leu	Ile	His	Thr	Ile	Leu	
			420					425					430			
agg	gcc	agt	tca	aaa	cag	gac	gtg	atc	gag	cca	gcc	gtc	tgc	gcc	ctg	1344
Arg	Ala	Ser	Ser	Lys	Gln	Asp	Val	Ile	Glu	Pro	Ala	Val	Cys	Ala	Leu	
		435					440					445				
cgc	cac	ctc	acc	agc	cgg	cac	cca	gag	gct	gag	act	gca	cag	aac	gcc	1392
Arg	His	Leu	Thr	Ser	Arg	His	Pro	Glu	Ala	Glu	Thr	Ala	Gln	Asn	Ala	
	450					455					460					
gta	cga	atg	cat	tac	ggc	atc	cct	gct	att	gtc	aaa	ctg	ctc	aat	caa	1440
Val	Arg	Met	His	Tyr	Gly	Ile	Pro	Ala	Ile	Val	Lys	Leu	Leu	Asn	Gln	
	465				470					475					480	
ccc	tac	cac	tgg	cca	gtt	gtc	aag	gct	gtg	gtt	ggg	ctg	atc	cgt	aac	1488
Pro	Tyr	His	Trp	Pro	Val	Val	Lys	Ala	Val	Val	Gly	Leu	Ile	Arg	Asn	
				485					490					495		
ctg	gcc	ctg	tgt	cca	gcc	aat	cag	gct	cct	ttg	agg	gac	gct	gac	gcc	1536
Leu	Ala	Leu	Cys	Pro	Ala	Asn	Gln	Ala	Pro	Leu	Arg	Asp	Ala	Asp	Ala	
			500					505					510			
att	ccc	aaa	ctg	gtc	act	ttg	ctt	tca	aaa	gct	cat	cag	gat	gca	cag	1584

Ile	Pro	Lys	Leu	Val	Thr	Leu	Leu	Ser	Lys	Ala	His	Gln	Asp	Ala	Gln		
		515					520					525					
aaa	ccc	ggt	tca	tct	gct	caa	cga	tca	tac	cag	gat	ggg	gta	aga	atg	1632	
Lys	Pro	Gly	Ser	Ser	Ala	Gln	Arg	Ser	Tyr	Gln	Asp	Gly	Val	Arg	Met		
		530				535					540						
gag	gag	att	gtt	gag	ggc	tgc	act	ggt	gct	ctt	cat	atc	atg	gcc	aga	1680	
Glu	Glu	Ile	Val	Glu	Gly	Cys	Thr	Gly	Ala	Leu	His	Ile	Met	Ala	Arg		
		545			550					555					560		
gat	cct	atg	aac	cga	ggc	acc	att	gcc	agc	atg	gac	acc	att	cct	ctg	1728	
Asp	Pro	Met	Asn	Arg	Gly	Thr	Ile	Ala	Ser	Met	Asp	Thr	Ile	Pro	Leu		
				565					570					575			
ttt	gtt	cag	ctg	ttg	tat	tct	cca	ctg	gat	aac	gtc	aag	cgt	gtg	gca	1776	
Phe	Val	Gln	Leu	Leu	Tyr	Ser	Pro	Leu	Asp	Asn	Val	Lys	Arg	Val	Ala		
			580					585					590				
gct	ggt	gtt	ctg	tgt	gag	ctg	gct	ctt	gat	aaa	cag	tcg	gct	gag	atc	1824	
Ala	Gly	Val	Leu	Cys	Glu	Leu	Ala	Leu	Asp	Lys	Gln	Ser	Ala	Glu	Ile		
		595				600						605					
atc	gat	gcg	gaa	gga	gcc	agt	gct	cct	ctc	atg	gag	ctc	ctt	cac	tcc	1872	
Ile	Asp	Ala	Glu	Gly	Ala	Ser	Ala	Pro	Leu	Met	Glu	Leu	Leu	His	Ser		
		610				615					620						
agc	aac	gaa	ggg	atc	gcc	acc	tat	gct	gct	gct	gtt	ctc	tac	aga	act	1920	
Ser	Asn	Glu	Gly	Ile	Ala	Thr	Tyr	Ala	Ala	Ala	Val	Leu	Tyr	Arg	Thr		
		625			630				635						640		
gct	gag	gac	aaa	aac	cca	gac	tat	aag	aaa	aga	gtt	tca	gta	gaa	ctc	1968	
Ala	Glu	Asp	Lys	Asn	Pro	Asp	Tyr	Lys	Lys	Arg	Val	Ser	Val	Glu	Leu		
				645					650					655			
aca	cac	tca	ctc	ttc	aaa	cat	gac	cct	gag	gct	tggt	gaa	atg	gca	cac	2016	
Thr	His	Ser	Leu	Phe	Lys	His	Asp	Pro	Glu	Ala	Trp	Glu	Met	Ala	His		
			660					665					670				
aac	act	gtg	atg	gat	ccc	gtc	ctt	ggc	gat	gaa	gag	ctt	gat	ggc	tac	2064	
Asn	Thr	Val	Met	Asp	Pro	Val	Leu	Gly	Asp	Glu	Glu	Leu	Asp	Gly	Tyr		
		675					680					685					
ggt	cct	gca	gga	tac	ggt	gga	tat	gct	gat	ggc	atg	cat	atg	gat	cct	2112	
Gly	Pro	Ala	Gly	Tyr	Gly	Gly	Tyr	Ala	Asp	Gly	Met	His	Met	Asp	Pro		
		690				695					700						
cta	gat	cca	gaa	atg	caa	gac	gat	ttt	agg	agc	ggc	atg	ccc	tac	aac	2160	
Leu	Asp	Pro	Glu	Met	Gln	Asp	Asp	Phe	Arg	Ser	Gly	Met	Pro	Tyr	Asn		
		705			710					715					720		
tcc	atg	gcc	aga	gtc	tac	cat	gat	tac								2187	
Ser	Met	Ala	Arg	Val	Tyr	His	Asp	Tyr									
				725													

<210> 68  
 <211> 729  
 <212> PRT  
 <213> Danio rerio

<400> 68

Met	Glu	Met	His	Met	Gly	Glu	Ala	Pro	Gly	Ser	Val	Lys	Val	Thr	Glu
1				5					10					15	

Trp	Gln	Gln	Ser	Tyr	Tyr	Gly	Thr	Asp	Ser	Gly	Ile	His	Ser	Gly	Ala
			20					25					30		



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Thr Thr Val Arg Ser Asp Asp Asp Gly Thr Glu Tyr Ser Ser Lys Lys  
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Phe Thr Tyr Thr Thr Thr Phe Thr Glu Asn Pro Ala Glu Val Glu Ser  
50 55 60

Gln Leu Asn Met Thr Arg Ala Gln Arg Val Arg Ala Ala Met Phe Pro  
65 70 75 80

Glu Thr Val Met Glu Gly Ser Val Ile His Ser Thr Gln Ile Asp Pro  
85 90 95

Ser Gln Gln Thr Asn Val Gln Lys Leu Ala Glu Pro Ser Gln Gln Leu  
100 105 110

Lys Ala Ala Ile Val His Leu Ile Asn Tyr Gln Asp Asp Ala Glu Leu  
115 120 125

Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu Asn Asp Glu Asp  
130 135 140

Gln Leu Val Val Asn Lys Ala Ala Met Ile Val Asn Gln Leu Thr Arg  
145 150 155 160

Lys Glu Ala Ser Arg Arg Ala Leu Met Gln Ser Pro Gln Met Val Ala  
165 170 175

Ala Val Val Arg Ala Met Gln Asn Thr Thr Asp Met Glu Thr Thr Arg  
180 185 190

Ala Thr Ala Ser Ile Leu His Asn Leu Ser His Gln Arg Glu Gly Leu  
195 200 205

Leu Ala Ile Phe Lys Ser Gly Gly Ile Pro Ala Leu Val Arg Met Leu  
210 215 220

Ser Ser Pro Met Asp Ser Val Leu Phe Tyr Ala Ile Thr Thr Leu His  
225 230 235 240

Asn Leu Leu Leu His Gln Glu Gly Ala Lys Met Ala Val Arg Leu Ala  
245 250 255

Asp Gly Leu Gln Arg Met Val Pro Leu Leu Lys Lys Ser Asn Pro Lys  
260 265 270

Phe Leu Ala Ile Thr Thr Asp Cys Leu Gln Leu Leu Ser Tyr Gly Asn  
275 280 285

Gln Glu Ser Lys Leu Ile Ile Leu Ala Asn Gly Gly Pro Glu Gly Leu  
290 295 300

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Val Asn Ile Met Arg Thr Tyr Asn Tyr Glu Lys Leu Leu Trp Thr Thr  
305 310 315 320

Ser Arg Val Leu Lys Val Leu Ser Val Cys Pro Ser Asn Lys Pro Ala  
325 330 335

Ile Val Asp Ala Gly Gly Met Gln Ala Leu Gly Lys His Leu Ser Gly  
340 345 350

Ser Ser Gln Arg Leu Met Gln Asn Cys Leu Trp Thr Leu Arg Asn Leu  
355 360 365

Ser Asp Ala Ala Thr Lys Gln Asp Gly Met Glu Asn Leu Leu Gln Val  
370 375 380

Leu Val Gly Leu Leu Ser Ala Asp Asp Ile Asn Met Leu Thr Cys Ala  
385 390 395 400

Thr Gly Val Leu Ser Asn Leu Thr Cys Asn Asn Thr Arg Asn Lys Thr  
405 410 415

Gln Val Thr Gln Ser Asn Gly Val Glu Ala Leu Ile His Thr Ile Leu  
420 425 430

Arg Ala Ser Ser Lys Gln Asp Val Ile Glu Pro Ala Val Cys Ala Leu  
435 440 445

Arg His Leu Thr Ser Arg His Pro Glu Ala Glu Thr Ala Gln Asn Ala  
450 455 460

Val Arg Met His Tyr Gly Ile Pro Ala Ile Val Lys Leu Leu Asn Gln  
465 470 475 480

Pro Tyr His Trp Pro Val Val Lys Ala Val Val Gly Leu Ile Arg Asn  
485 490 495

Leu Ala Leu Cys Pro Ala Asn Gln Ala Pro Leu Arg Asp Ala Asp Ala  
500 505 510

Ile Pro Lys Leu Val Thr Leu Leu Ser Lys Ala His Gln Asp Ala Gln  
515 520 525

Lys Pro Gly Ser Ser Ala Gln Arg Ser Tyr Gln Asp Gly Val Arg Met  
530 535 540

Glu Glu Ile Val Glu Gly Cys Thr Gly Ala Leu His Ile Met Ala Arg  
545 550 555 560

Asp Pro Met Asn Arg Gly Thr Ile Ala Ser Met Asp Thr Ile Pro Leu  
565 570 575

Phe Val Gln Leu Leu Tyr Ser Pro Leu Asp Asn Val Lys Arg Val Ala  
580 585 590

Ala Gly Val Leu Cys Glu Leu Ala Leu Asp Lys Gln Ser Ala Glu Ile  
595 600 605

Ile Asp Ala Glu Gly Ala Ser Ala Pro Leu Met Glu Leu Leu His Ser  
610 615 620

Ser Asn Glu Gly Ile Ala Thr Tyr Ala Ala Ala Val Leu Tyr Arg Thr  
625 630 635 640

Ala Glu Asp Lys Asn Pro Asp Tyr Lys Lys Arg Val Ser Val Glu Leu  
645 650 655

Thr His Ser Leu Phe Lys His Asp Pro Glu Ala Trp Glu Met Ala His  
660 665 670

Asn Thr Val Met Asp Pro Val Leu Gly Asp Glu Glu Leu Asp Gly Tyr  
675 680 685

Gly Pro Ala Gly Tyr Gly Gly Tyr Ala Asp Gly Met His Met Asp Pro  
690 695 700

Leu Asp Pro Glu Met Gln Asp Asp Phe Arg Ser Gly Met Pro Tyr Asn  
705 710 715 720

Ser Met Ala Arg Val Tyr His Asp Tyr  
725

<210> 69  
<211> 1734  
<212> DNA  
<213> Saccharomyces cerevisiae

<220>  
<221> CDS  
<222> (1)..(1734)

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gtc tca cca att gcc gat aat gaa aga gaa gcg gtg act tta tta cta	96
Val Ser Pro Ile Ala Asp Asn Glu Arg Glu Ala Val Thr Leu Leu Leu	
20 25 30	
ggg tat ttg gag gat aaa gac caa tta gac ttt tac tct ggt ggt cca	144
Gly Tyr Leu Glu Asp Lys Asp Gln Leu Asp Phe Tyr Ser Gly Gly Pro	
35 40 45	
cta aag gcc cta act act ttg gtg tat tca gat aat cta aat ttg caa	192
Leu Lys Ala Leu Thr Thr Leu Val Tyr Ser Asp Asn Leu Asn Leu Gln	
50 55 60	
agg agc gcc gct ctg gca ttc gca gaa att act gaa aaa tac gtc cgt	240
Arg Ser Ala Ala Leu Ala Phe Ala Glu Ile Thr Glu Lys Tyr Val Arg	

65	70	75	80		
cag gtc tct aga gag gta ctg gaa ccc atc tta ata tta tta caa agc	Gln Val Ser Arg Glu Val Leu Glu Pro Ile Leu Ile Leu Leu Gln Ser	85	90	95	288
caa gat cca cag att caa gtg gcc gct tgt gca gcc ttg ggt aat ttg	Gln Asp Pro Gln Ile Gln Val Ala Ala Cys Ala Ala Leu Gly Asn Leu	100	105	110	336
gcc gtt aat aat gaa aat aaa tta tta att gtg gaa atg gga ggc tta	Ala Val Asn Asn Glu Asn Lys Leu Leu Ile Val Glu Met Gly Gly Leu	115	120	125	384
gag cca tta ata aac caa atg atg ggt gac aat gta gaa gtt caa tgt	Glu Pro Leu Ile Asn Gln Met Met Gly Asp Asn Val Glu Val Gln Cys	130	135	140	432
aat gct gtt gga tgc att acc aat tta gcc aca agg gat gac aat aaa	Asn Ala Val Gly Cys Ile Thr Asn Leu Ala Thr Arg Asp Asp Asn Lys	145	150	155	480
cat aag att gct act tct ggt gct tta att cca ttg act aag cta gct	His Lys Ile Ala Thr Ser Gly Ala Leu Ile Pro Leu Thr Lys Leu Ala	165	170	175	528
aaa tcc aaa cat ata aga gtt cag aga aat gct aca ggt gca tta tta	Lys Ser Lys His Ile Arg Val Gln Arg Asn Ala Thr Gly Ala Leu Leu	180	185	190	576
aat atg aca cat tct gag gaa aat aga aaa gaa ttg gtt aat gca ggt	Asn Met Thr His Ser Glu Glu Asn Arg Lys Glu Leu Val Asn Ala Gly	195	200	205	624
gct gtg cct gta ttg gta tct tta ctg tcg tcc acc gat cct gat gtt	Ala Val Pro Val Leu Val Ser Leu Leu Ser Ser Thr Asp Pro Asp Val	210	215	220	672
cag tac tat tgt act act gct tta tca aat ata gca gtg gat gaa gcc	Gln Tyr Tyr Cys Thr Thr Ala Leu Ser Asn Ile Ala Val Asp Glu Ala	225	230	235	720
aat cgc aag aag ttg gct caa act gag cca aga ttg gtt tcc aaa ttg	Asn Arg Lys Lys Leu Ala Gln Thr Glu Pro Arg Leu Val Ser Lys Leu	245	250	255	768
gtt agt ctg atg gat tct cca tct tca agg gta aaa tgt caa gct act	Val Ser Leu Met Asp Ser Pro Ser Ser Arg Val Lys Cys Gln Ala Thr	260	265	270	816
ttg gct tta cga aac cta gcg tcc gat aca agc tac caa tta gaa att	Leu Ala Leu Arg Asn Leu Ala Ser Asp Thr Ser Tyr Gln Leu Glu Ile	275	280	285	864
gta agg gct ggt ggg ttg cct cat ttg gta aag ttg att caa agt gat	Val Arg Ala Gly Gly Leu Pro His Leu Val Lys Leu Ile Gln Ser Asp	290	295	300	912
tct ata cca ctg gtt ttg gct agt gtg gca tgc att aga aac att tct	Ser Ile Pro Leu Val Leu Ala Ser Val Ala Cys Ile Arg Asn Ile Ser	305	310	315	960
att cac cct cta aat gaa ggt tta att gtt gat gca ggt ttc tta aaa	Ile His Pro Leu Asn Glu Gly Leu Ile Val Asp Ala Gly Phe Leu Lys	325	330	335	1008
cca tta gta aga ttg ttg gac tat aag gat tca gaa gaa att caa tgt	Pro Leu Val Arg Leu Leu Asp Tyr Lys Asp Ser Glu Glu Ile Gln Cys	340	345	350	1056

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His Ala Val Ser Thr Leu Arg Asn Leu Ala Ala Ser Ser Glu Lys Asn	
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aga aaa gag ttc ttc gaa agt ggt gct gtc gaa aaa tgt aag gaa ctg	1152
Arg Lys Glu Phe Phe Glu Ser Gly Ala Val Glu Lys Cys Lys Glu Leu	
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Ala Leu Asp Ser Pro Val Ser Val Gln Ser Glu Ile Ser Ala Cys Phe	
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gct att tta gcc cta gca gat gtc tcc aaa ttg gat cta ctg gaa gca	1248
Ala Ile Leu Ala Leu Ala Asp Val Ser Lys Leu Asp Leu Leu Glu Ala	
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aat atc tta gat gct tta atc cct atg act ttt tcc cag aac caa gaa	1296
Asn Ile Leu Asp Ala Leu Ile Pro Met Thr Phe Ser Gln Asn Gln Glu	
420 425 430	
gtt tct ggt aat gct gct gct gct ttg gca aat cta tgt tca aga gtg	1344
Val Ser Gly Asn Ala Ala Ala Ala Leu Ala Asn Leu Cys Ser Arg Val	
435 440 445	
aat aat tat aca aaa att att gaa gca tgg gat cgt ccg aat gaa ggc	1392
Asn Asn Tyr Thr Lys Ile Ile Glu Ala Trp Asp Arg Pro Asn Glu Gly	
450 455 460	
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Ile Arg Gly Phe Leu Ile Arg Phe Leu Lys Ser Asp Tyr Ala Thr Phe	
465 470 475 480	
gaa cac att gcg cta tgg aca att tta caa ttg cta gaa agt cat aat	1488
Glu His Ile Ala Leu Trp Thr Ile Leu Gln Leu Leu Glu Ser His Asn	
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gat aaa gtg gaa gat ttg gtt aaa aat gat gac gac atc att aac gga	1536
Asp Lys Val Glu Asp Leu Val Lys Asn Asp Asp Asp Ile Ile Asn Gly	
500 505 510	
gtg aga aaa atg gca gat gtg acc ttt gag cgt tta caa aga tca gga	1584
Val Arg Lys Met Ala Asp Val Thr Phe Glu Arg Leu Gln Arg Ser Gly	
515 520 525	
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Ile Asp Val Lys Asn Pro Gly Ser Asn Asn Asn Pro Ser Ser Asn Asp	
530 535 540	
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Asn Asn Ser Asn Asn Asn Asp Thr Gly Ser Glu His Gln Pro Val Glu	
545 550 555 560	
gat gca agt ttg gaa ttg tat aat att act caa cag att tta caa ttt	1728
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tta cat	1734
Leu His	

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Gly Tyr Leu Glu Asp Lys Asp Gln Leu Asp Phe Tyr Ser Gly Gly Pro  
35 40 45

Leu Lys Ala Leu Thr Thr Leu Val Tyr Ser Asp Asn Leu Asn Leu Gln  
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Arg Ser Ala Ala Leu Ala Phe Ala Glu Ile Thr Glu Lys Tyr Val Arg  
65 70 75 80

Gln Val Ser Arg Glu Val Leu Glu Pro Ile Leu Ile Leu Leu Gln Ser  
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Gln Asp Pro Gln Ile Gln Val Ala Ala Cys Ala Ala Leu Gly Asn Leu  
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Ala Val Asn Asn Glu Asn Lys Leu Leu Ile Val Glu Met Gly Gly Leu  
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Glu Pro Leu Ile Asn Gln Met Met Gly Asp Asn Val Glu Val Gln Cys  
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Asn Ala Val Gly Cys Ile Thr Asn Leu Ala Thr Arg Asp Asp Asn Lys  
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His Lys Ile Ala Thr Ser Gly Ala Leu Ile Pro Leu Thr Lys Leu Ala  
165 170 175

Lys Ser Lys His Ile Arg Val Gln Arg Asn Ala Thr Gly Ala Leu Leu  
180 185 190

Asn Met Thr His Ser Glu Glu Asn Arg Lys Glu Leu Val Asn Ala Gly  
195 200 205

Ala Val Pro Val Leu Val Ser Leu Leu Ser Ser Thr Asp Pro Asp Val  
210 215 220

Gln Tyr Tyr Cys Thr Thr Ala Leu Ser Asn Ile Ala Val Asp Glu Ala  
225 230 235 240

Asn Arg Lys Lys Leu Ala Gln Thr Glu Pro Arg Leu Val Ser Lys Leu  
245 250 255

Val Ser Leu Met Asp Ser Pro Ser Ser Arg Val Lys Cys Gln Ala Thr  
260 265 270

Leu Ala Leu Arg Asn Leu Ala Ser Asp Thr Ser Tyr Gln Leu Glu Ile

275

280

285

Val Arg Ala Gly Gly Leu Pro His Leu Val Lys Leu Ile Gln Ser Asp  
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Ser Ile Pro Leu Val Leu Ala Ser Val Ala Cys Ile Arg Asn Ile Ser  
 305 310 315 320

Ile His Pro Leu Asn Glu Gly Leu Ile Val Asp Ala Gly Phe Leu Lys  
 325 330 335

Pro Leu Val Arg Leu Leu Asp Tyr Lys Asp Ser Glu Glu Ile Gln Cys  
 340 345 350

His Ala Val Ser Thr Leu Arg Asn Leu Ala Ala Ser Ser Glu Lys Asn  
 355 360 365

Arg Lys Glu Phe Phe Glu Ser Gly Ala Val Glu Lys Cys Lys Glu Leu  
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Ala Leu Asp Ser Pro Val Ser Val Gln Ser Glu Ile Ser Ala Cys Phe  
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Ala Ile Leu Ala Leu Ala Asp Val Ser Lys Leu Asp Leu Leu Glu Ala  
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Asn Ile Leu Asp Ala Leu Ile Pro Met Thr Phe Ser Gln Asn Gln Glu  
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Val Ser Gly Asn Ala Ala Ala Ala Leu Ala Asn Leu Cys Ser Arg Val  
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Asn Asn Tyr Thr Lys Ile Ile Glu Ala Trp Asp Arg Pro Asn Glu Gly  
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Ile Arg Gly Phe Leu Ile Arg Phe Leu Lys Ser Asp Tyr Ala Thr Phe  
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Glu His Ile Ala Leu Trp Thr Ile Leu Gln Leu Leu Glu Ser His Asn  
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Asp Lys Val Glu Asp Leu Val Lys Asn Asp Asp Asp Ile Ile Asn Gly  
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Val Arg Lys Met Ala Asp Val Thr Phe Glu Arg Leu Gln Arg Ser Gly  
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Ile Asp Val Lys Asn Pro Gly Ser Asn Asn Asn Pro Ser Ser Asn Asp  
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Asn Asn Ser Asn Asn Asn Asp Thr Gly Ser Glu His Gln Pro Val Glu  
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Glu Val Leu Phe Arg Glu Gly Val Met Val Ala Lys Lys Asp Arg Arg  
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ccc cgc agc ttg cac ccc cat gtg ccc ggc gtc acc aac ctg cag gtc 144  
Pro Arg Ser Leu His Pro His Val Pro Gly Val Thr Asn Leu Gln Val  
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Phe Ala Trp Cys His Phe Tyr Trp Tyr Leu Thr Asn Glu Gly Ile Ala  
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His Leu Arg Gln Tyr Leu His Leu Pro Pro Glu Ile Val Pro Ala Ser  
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Leu Gln Arg Val Arg Arg Pro Val Ala Met Val Met Pro Ala Arg Arg  
100 105 110  
acc ccc cac gtg cag gct gtg cag ggt ccc ctg ggc tcc cca ccc aag 384  
Thr Pro His Val Gln Ala Val Gln Gly Pro Leu Gly Ser Pro Pro Lys  
115 120 125  
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Arg Gly Pro Leu Pro Thr Glu Glu Gln Arg Val Tyr Arg Arg Lys Glu  
130 135 140  
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Leu Glu Glu Val Ser Pro Glu Thr Pro Val Val Pro Ala Thr Thr Gln  
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Arg Thr Leu Ala Arg Pro Gly Pro Glu Pro Ala Pro Ala Thr Asp Glu  
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cgg gat cgt gtg cag aag aaa acc ttc acc aag tgg gtc aac aag cac 576  
Arg Asp Arg Val Gln Lys Lys Thr Phe Thr Lys Trp Val Asn Lys His  
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gat Asp	ggc Gly 210	cac His	aac Asn	ctc Leu	atc Ile	tcc Ser 215	ctg Leu	ctg Leu	gag Glu	gtc Val	ctc Leu 220	tgc Ser	ggg Gly	gac Asp	agc Ser	672
ctg Leu 225	ccc Pro	cgg Arg	gag Glu	aag Lys	ggg Gly 230	agg Arg	atg Met	cgt Arg	ttc Phe	cac His 235	aag Lys	ctg Leu	cag Gln	aat Asn	gtc Val 240	720
cag Gln	att Ile	gcc Ala	ctg Leu	gac Asp 245	tac Tyr	ctc Leu	cgg Arg	cac His	cgc Arg 250	cag Gln	gtg Val	aag Lys	ctg Leu	gtg Val 255	aac Asn	768
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ctc Leu	atc Ile	tgg Trp 275	aca Thr	atc Ile	att Ile	ctg Leu	cac His 280	ttc Phe	cag Gln	atc Ile	tca Ser	gat Asp 285	atc Ile	cag Gln	gtg Val	864
agt Ser	ggg Gly 290	cag Gln	tgc Ser	gag Glu	gac Asp	atg Met 295	acg Thr	gcc Ala	aag Lys	gag Glu	aag Lys 300	ctg Leu	ctg Leu	ctg Leu	tgg Trp	912
tgc Ser 305	cag Gln	cga Arg	atg Met	gtg Val	gag Glu 310	ggg Gly	tac Tyr	cag Gln	ggc Gly	ctg Leu 315	cga Arg	tgc Cys	gac Asp	aac Asn	ttc Phe 320	960
acc Thr	tcc Ser	agc Ser	tgg Trp	aga Arg 325	gac Asp	ggc Gly	cgc Arg	ctc Leu	ttc Phe 330	aat Asn	gcc Ala	atc Ile	atc Ile	cac His 335	cgg Arg	1008
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ctg Leu	gag Glu	aac Asn 355	ctg Leu	gac Asp	cag Gln	gcc Ala	ttc Phe 360	tct Ser	gtg Val	gcg Ala	gag Glu	cgg Arg 365	gac Asp	ctg Leu	gga Gly	1104
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cgc Arg	gtg Val	ccg Pro	gac Asp	gtg Val 405	cag Gln	gat Asp	ggg Gly	gtg Val	agg Arg 410	gcc Ala	aac Asn	gag Glu	ctg Leu	cag Gln 415	ctg Leu	1248
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gag	cta	cca	gcc	aag	gag	gcc	gac	aag	aac	agg	tcc	aag	ggc	atc	tac	1440

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Gln	Ser	Leu	Glu	Gly 485	Ala	Val	Gln	Ala	Gly 490	Gln	Leu	Lys	Val	Pro 495	Pro		
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Glu	Cys 530	Leu	Gln	Arg	Ile	Val 535	Thr	Lys	Leu	Gln	Met 540	Glu	Ala	Gly	Leu		
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Cys 545	Glu	Glu	Gln	Leu	Asn 550	Gln	Ala	Asp	Ala	Leu 555	Leu	Gln	Ser	Asp	Val 560		
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Tyr 625	Asn	Leu	Arg	Leu	Lys 630	Ala	Gly	Val	Ala	Ala 635	Pro	Ala	Thr	Gln	Val 640		
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ctg Leu	cgg Arg 1145	ctg Leu	ccg Pro	ctg Leu	gac Asp	aaa Lys 1150	gag Glu	ccg Pro	gca Ala	cgg Arg	gag Glu 1155	tgt Cys	gcc Ala	cag Gln	3474
cgc Arg	atc Ile 1160	gcc Ala	gag Glu	cag Gln	cag Gln	aag Lys 1165	gca Ala	cag Gln	gca Ala	gag Glu	gtg Val 1170	gag Glu	ggg Gly	ctg Leu	3519
ggc Gly	aag Lys 1175	ggg Gly	gtc Val	gcc Ala	cgg Arg	ctc Leu 1180	tct Ser	gcc Ala	gag Glu	gcc Ala	gag Glu 1185	aag Lys	gtc Val	ttg Leu	3564
gcc Ala	cta Leu 1190	cca Pro	gag Glu	cca Pro	tcg Ser	cct Pro 1195	gcg Ala	gcc Ala	ccc Pro	acg Thr	ctg Leu 1200	cgc Arg	tcg Ser	gag Glu	3609
ctg Leu	gag Glu 1205	ctg Leu	acg Thr	ctg Leu	ggc Gly	aag Lys 1210	ctg Leu	gag Glu	cag Gln	gtc Val	cgc Arg 1215	agc Ser	ctg Leu	tct Ser	3654
gcc Ala	atc Ile 1220	tac Tyr	ctg Leu	gag Glu	aag Lys	ctc Leu 1225	aag Lys	acc Thr	atc Ile	agc Ser	ctg Leu 1230	gtg Val	atc Ile	cgc Arg	3699
ggc Gly	acg Thr 1235	cag Gln	ggg Gly	gcc Ala	gag Glu	gag Glu 1240	gtg Val	ctc Leu	agg Arg	gcc Ala	cac His 1245	gag Glu	gag Glu	cag Gln	3744
ctc Leu	aag Lys 1250	gag Glu	gcc Ala	cag Gln	gcc Ala	gtg Val 1255	ccg Pro	gcc Ala	acc Thr	ctc Leu	ccg Pro 1260	gag Glu	ctc Leu	gag Glu	3789
gcc Ala	acc Thr 1265	aag Lys	gcc Ala	tct Ser	ctg Leu	aag Lys 1270	aag Lys	ctg Leu	cgg Arg	gcc Ala	cag Gln 1275	gcc Ala	gag Glu	gca Ala	3834

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cag Gln	cag Gln 1280	ccc Pro	acg Thr	ttc Phe	gac Asp	gcc Ala 1285	ctg Leu	cgg Arg	gat Asp	gag Glu	ctg Leu 1290	cgg Arg	ggg Gly	gca Ala	3879
cag Gln	gag Glu 1295	gtg Val	ggg Gly	gag Glu	cga Arg	ctg Leu 1300	cag Gln	cag Gln	cgg Arg	cac His	ggg Gly 1305	gag Glu	cgg Arg	gac Asp	3924
gtg Val	gag Glu 1310	gtg Val	gag Glu	cgc Arg	tgg Trp	cgg Arg 1315	gag Glu	cgg Arg	gtc Val	gcc Ala	cag Gln 1320	ttg Leu	ctt Leu	gag Glu	3969
cgc Arg	tgg Trp 1325	cag Gln	gct Ala	gtg Val	ctg Leu	gcc Ala 1330	cag Gln	acc Thr	gac Asp	gtg Val	cgg Arg 1335	cag Gln	cgc Arg	gag Glu	4014
ctc Leu	gag Glu 1340	caa Gln	ctg Leu	ggc Gly	cgc Arg	cag Gln 1345	ctg Leu	cgt Arg	tac Tyr	tac Tyr	cgc Arg 1350	gag Glu	agt Ser	gca Ala	4059
gac Asp	ccc Pro 1355	ttg Leu	ggc Gly	gcc Ala	tgg Trp	ctg Leu 1360	cag Gln	gac Asp	gcc Ala	agg Arg	cgg Arg 1365	cgg Arg	cag Gln	gag Glu	4104
cag Gln	atc Ile 1370	cag Gln	gcc Ala	atg Met	ccg Pro	ctg Leu 1375	gcc Ala	gac Asp	agc Ser	cag Gln	gct Ala 1380	gtg Val	cgg Arg	gag Glu	4149
cag Gln	ctg Leu 1385	cgg Arg	cag Gln	gag Glu	cag Gln	gcc Ala 1390	ctg Leu	ctg Leu	gag Glu	gag Glu	atc Ile 1395	gag Glu	cgc Arg	cac His	4194
ggc Gly	gag Glu 1400	aag Lys	gtc Val	gag Glu	gag Glu	tgc Cys 1405	cag Gln	agg Arg	ttt Phe	gcg Ala	aaa Lys 1410	cag Gln	tac Tyr	atc Ile	4239
aac Asn	gcc Ala 1415	atc Ile	aag Lys	gac Asp	tat Tyr	gaa Glu 1420	ctc Leu	cag Gln	ctg Leu	gtg Val	acg Thr 1425	tac Tyr	aag Lys	gcg Ala	4284
cag Gln	ctt Leu 1430	gag Glu	ccg Pro	gtg Val	gcc Ala	tcc Ser 1435	ccg Pro	gcc Ala	aag Lys	aag Lys	ccc Pro 1440	aag Lys	gtc Val	cag Gln	4329
tcg Ser	gga Gly 1445	tca Ser	gag Glu	agt Ser	gtc Val	atc Ile 1450	cag Gln	gag Glu	tac Tyr	gtg Val	gac Asp 1455	ctg Leu	cgt Arg	acg Thr	4374
cac His	tac Tyr 1460	agc Ser	gag Glu	ctg Leu	acc Thr	aca Thr 1465	ctg Leu	acg Thr	agc Ser	cag Gln	tac Tyr 1470	atc Ile	aag Lys	ttc Phe	4419
atc Ile	agc Ser 1475	gag Glu	act Thr	ctg Leu	cgg Arg	cgc Arg 1480	atg Met	gag Glu	gag Glu	gag Glu	gag Glu 1485	agg Arg	ctg Leu	gct Ala	4464
gag Glu	cag Gln 1490	cag Gln	cgg Arg	gca Ala	gag Glu	gag Glu 1495	cgc Arg	gag Glu	cgg Arg	ctg Leu	gcc Ala 1500	gag Glu	gtg Val	gag Glu	4509
gcc Ala	gcg Ala 1505	ctg Leu	gag Glu	aag Lys	cag Gln	cgg Arg 1510	cag Gln	ctg Leu	gcc Ala	gag Glu	gcg Ala 1515	cac His	gcc Ala	cag Gln	4554
gca Ala	aag Lys 1520	gca Ala	cag Gln	gcg Ala	gag Glu	cgg Arg 1525	gag Glu	gcg Ala	aag Lys	gag Glu	ctg Leu 1530	cag Gln	cag Gln	cgc Arg	4599
atg	cag	gag	gag	gtg	gtg	cgg	cgg	gag	gag	gcg	gcg	gtg	gac	gcg	4644

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Met	Gln	Glu	Glu	Val	Val	Arg	Arg	Glu	Glu	Ala	Ala	Val	Asp	Ala		
	1535					1540					1545					
cag	cag	cag	aag	cgc	agc	att	cag	gag	gag	ctg	cag	cag	ctg	cgg		4689
Gln	Gln	Gln	Lys	Arg	Ser	Ile	Gln	Glu	Glu	Leu	Gln	Gln	Leu	Arg		
	1550					1555					1560					
cag	agc	tcg	gag	gcg	gag	atc	cag	gcc	aag	gcc	cgg	cag	gca	gag		4734
Gln	Ser	Ser	Glu	Ala	Glu	Ile	Gln	Ala	Lys	Ala	Arg	Gln	Ala	Glu		
	1565					1570					1575					
gcg	gct	gag	cgc	agc	cgg	ctg	cgc	atc	gag	gag	gag	atc	cgc	gtg		4779
Ala	Ala	Glu	Arg	Ser	Arg	Leu	Arg	Ile	Glu	Glu	Glu	Ile	Arg	Val		
	1580					1585					1590					
gtg	cgc	ctg	cag	ttg	gag	gcc	acc	gag	cgc	cag	cgt	ggc	ggg	gct		4824
Val	Arg	Leu	Gln	Leu	Glu	Ala	Thr	Glu	Arg	Gln	Arg	Gly	Gly	Ala		
	1595					1600					1605					
gag	ggg	gag	ctg	cag	gca	ctg	cgt	gca	cgg	gcg	gag	gag	gct	gag		4869
Glu	Gly	Glu	Leu	Gln	Ala	Leu	Arg	Ala	Arg	Ala	Glu	Glu	Ala	Glu		
	1610					1615					1620					
gca	caa	aag	cga	cag	gcg	cag	gag	gag	gcc	gag	cgc	ttg	cgg	agg		4914
Ala	Gln	Lys	Arg	Gln	Ala	Gln	Glu	Glu	Ala	Glu	Arg	Leu	Arg	Arg		
	1625					1630					1635					
cag	gtg	cag	gac	gag	agc	cag	cgt	aag	cgg	cag	gcg	gag	gtg	gag		4959
Gln	Val	Gln	Asp	Glu	Ser	Gln	Arg	Lys	Arg	Gln	Ala	Glu	Val	Glu		
	1640					1645					1650					
ctg	gcc	tcg	cgc	gtg	aag	gcc	gag	gcc	gag	gcg	gcg	cgc	gag	aag		5004
Leu	Ala	Ser	Arg	Val	Lys	Ala	Glu	Ala	Glu	Ala	Ala	Arg	Glu	Lys		
	1655					1660					1665					
cag	cgg	gcc	ctg	cag	gcc	ctg	gag	gag	ctg	cgg	ctg	cag	gcg	gag		5049
Gln	Arg	Ala	Leu	Gln	Ala	Leu	Glu	Glu	Leu	Arg	Leu	Gln	Ala	Glu		
	1670					1675					1680					
gag	gcg	gag	cgg	cgc	ctg	cgg	cag	gcc	gag	gtg	gag	cga	gcg	cgg		5094
Glu	Ala	Glu	Arg	Arg	Leu	Arg	Gln	Ala	Glu	Val	Glu	Arg	Ala	Arg		
	1685					1690					1695					
cag	gta	cag	gtg	gcc	ctg	gag	acg	gcg	cag	cgc	agt	gca	gag	gcg		5139
Gln	Val	Gln	Val	Ala	Leu	Glu	Thr	Ala	Gln	Arg	Ser	Ala	Glu	Ala		
	1700					1705					1710					
gag	ctg	cag	agc	aaa	cgc	gcc	tcc	ttc	gcc	gag	aag	acg	gca	cag		5184
Glu	Leu	Gln	Ser	Lys	Arg	Ala	Ser	Phe	Ala	Glu	Lys	Thr	Ala	Gln		
	1715					1720					1725					
ctg	gag	cgc	tcc	ctg	cag	gag	gaa	cac	gtg	gct	gtg	gca	cag	ctg		5229
Leu	Glu	Arg	Ser	Leu	Gln	Glu	Glu	His	Val	Ala	Val	Ala	Gln	Leu		
	1730					1735					1740					
cgg	gag	gag	gct	gag	cgg	cgg	gca	cag	cag	cag	gcc	gag	gcc	gag		5274
Arg	Glu	Glu	Ala	Glu	Arg	Arg	Ala	Gln	Gln	Gln	Ala	Glu	Ala	Glu		
	1745					1750					1755					
cgg	gcg	cgc	gag	gag	gca	gag	cgg	gag	ctg	gag	cgc	tggt	cag	ctc		5319
Arg	Ala	Arg	Glu	Glu	Ala	Glu	Arg	Glu	Leu	Glu	Arg	Trp	Gln	Leu		
	1760					1765					1770					
aag	gcc	aac	gag	gcg	cta	cgg	ctg	cgg	ctg	cag	gcg	gag	gag	gtg		5364
Lys	Ala	Asn	Glu	Ala	Leu	Arg	Leu	Arg	Leu	Gln	Ala	Glu	Glu	Val		
	1775					1780					1785					
gcg	cag	cag	aag	agc	ctg	gcg	cag	gcc	gag	gct	gag	aag	cag	aag		5409
Ala	Gln	Gln	Lys	Ser	Leu	Ala	Gln	Ala	Glu	Ala	Glu	Lys	Gln	Lys		

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1790	1795	1800	
gag Glu 1805	gag Glu 1810	gag Glu 1815	5454
cag Gln 1820	gag Glu 1825	gag Glu 1830	5499
cag Gln 1835	gag Glu 1840	gag Glu 1845	5544
gag Glu 1850	gag Glu 1855	gag Glu 1860	5589
cag Gln 1865	gag Glu 1870	gag Glu 1875	5634
gag Glu 1880	gag Glu 1885	gag Glu 1890	5679
ctg Leu 1895	gag Glu 1900	ctg Leu 1905	5724
gag Glu 1910	gag Glu 1915	gag Glu 1920	5769
cag Gln 1925	gag Glu 1930	gag Glu 1935	5814
gag Glu 1940	gag Glu 1945	gag Glu 1950	5859
cag Gln 1955	gag Glu 1960	gag Glu 1965	5904
gag Glu 1970	gag Glu 1975	gag Glu 1980	5949
cag Gln 1985	gag Glu 1990	gag Glu 1995	5994
gag Glu 2000	gag Glu 2005	gag Glu 2010	6039
cag Gln 2015	gag Glu 2020	gag Glu 2025	6084
gag Glu 2030	gag Glu 2035	gag Glu 2040	6129
gag Glu 2045	gag Glu 2050	gag Glu 2055	6174

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cag Gln	gtg Val 2060	gag Glu	gag Glu	gag Glu	atc Ile	ctg Leu 2065	gcg Ala	ctg Leu	aag Lys	gcg Ala	agc Ser 2070	ttc Phe	gag Glu	aag Lys	6219
gcg Ala	gcc Ala 2075	gct Ala	ggc Gly	aag Lys	gcg Ala	gag Glu 2080	ctg Leu	gag Glu	ctg Leu	gag Glu	ctg Leu 2085	gga Gly	cgc Arg	atc Ile	6264
cgc Arg	agc Ser 2090	aac Asn	gcg Ala	gag Glu	gac Asp	acg Thr 2095	ctg Leu	cgc Arg	agc Ser	aag Lys	gag Glu 2100	cag Gln	gcc Ala	gag Glu	6309
ctg Leu	gag Glu 2105	gct Ala	gcg Ala	agg Arg	cag Gln	cgg Arg 2110	cag Gln	ctg Leu	gcg Ala	gcg Ala	gag Glu 2115	gag Glu	gag Glu	cgg Arg	6354
cgg Arg	cgc Arg 2120	cgt Arg	gag Glu	gct Ala	gag Glu	gag Glu 2125	cgc Arg	gtg Val	cag Gln	aag Lys	agc Ser 2130	ctg Leu	gcg Ala	gcc Ala	6399
gag Glu	gag Glu 2135	gag Glu	gcc Ala	gca Ala	cgg Arg	cag Gln 2140	cgg Arg	aag Lys	gcg Ala	gcg Ala	ctg Leu 2145	gag Glu	gaa Glu	gtc Val	6444
gag Glu	cgg Arg 2150	ctg Leu	aaa Lys	gcc Ala	aag Lys	gtg Val 2155	gag Glu	gag Glu	gcg Ala	cgg Arg	cgc Arg 2160	ctg Leu	cgg Arg	gag Glu	6489
cga Arg	gcg Ala 2165	gag Glu	cag Gln	gag Glu	tcg Ser	gcg Ala 2170	cgg Arg	cag Gln	ctg Leu	cag Gln	ctg Leu 2175	gcc Ala	cag Gln	gag Glu	6534
gcc Ala	gcc Ala 2180	cag Gln	aag Lys	cgg Arg	ctg Leu	cag Gln 2185	gcg Ala	gaa Glu	gag Glu	aag Lys	gca Ala 2190	cac His	gcc Ala	ttc Phe	6579
gcg Ala	gtg Val 2195	cag Gln	cag Gln	aag Lys	gag Glu	cag Gln 2200	gag Glu	cta Leu	cag Gln	cag Gln	acg Thr 2205	ctg Leu	cag Gln	cag Gln	6624
gag Glu	cag Gln 2210	agc Ser	gtg Val	ctg Leu	gac Asp	cag Gln 2215	ctg Leu	cgc Arg	ggc Gly	gag Glu	gcg Ala 2220	gag Glu	gcg Ala	gcc Ala	6669
cgg Arg	cgg Arg 2225	gcg Ala	gct Ala	gag Glu	gag Glu	gcg Ala 2230	gag Glu	gag Glu	gcc Ala	cgg Arg	gtg Val 2235	cag Gln	gcg Ala	gag Glu	6714
cgt Arg	gag Glu 2240	gcg Ala	gcg Ala	cag Gln	tcc Ser	cgg Arg 2245	cgg Arg	cag Gln	gtg Val	gaa Glu	gag Glu 2250	gcc Ala	gag Glu	cgg Arg	6759
ctg Leu	aag Lys 2255	cag Gln	tcg Ser	gca Ala	gag Glu	gag Glu 2260	cag Gln	gca Ala	cag Gln	gcc Ala	cgg Arg 2265	gct Ala	cag Gln	gca Ala	6804
cag Gln	gcg Ala 2270	gct Ala	gca Ala	gag Glu	aag Lys	ctg Leu 2275	cgc Arg	aag Lys	gag Glu	gcc Ala	gag Glu 2280	caa Gln	gag Glu	gcg Ala	6849
gcg Ala	cgg Arg 2285	cgg Arg	gca Ala	cag Gln	gcg Ala	gag Glu 2290	cag Gln	gcg Ala	gcc Ala	ctg Leu	cgg Arg 2295	cag Gln	aag Lys	cag Gln	6894
gca Ala	gct Ala 2300	gac Asp	gcg Ala	gag Glu	atg Met	gag Glu 2305	aag Lys	cat His	aag Lys	aaa Lys	ttc Phe 2310	gcc Ala	gag Glu	cag Gln	6939



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acg Thr	ctg Leu 2315	cgg Arg	cag Gln	aag Lys	gcg Ala	cag Gln 2320	gtg Val	gag Glu	cag Gln	gag Glu	ctg Leu 2325	aca Thr	aca Thr	ctg Leu	6984
cgg Arg	ctg Leu 2330	cag Gln	ctg Leu	gag Glu	gag Glu	acc Thr 2335	gac Asp	cac His	cag Gln	aag Lys	aac Asn 2340	ctg Leu	ctg Leu	gac Asp	7029
gag Glu	gag Glu 2345	ctg Leu	cag Gln	cgg Arg	ctg Leu	aag Lys 2350	gcg Ala	gag Glu	gcc Ala	acg Thr	gag Glu 2355	gcc Ala	gca Ala	cgc Arg	7074
cag Gln	cgc Arg 2360	agc Ser	cag Gln	gtg Val	gag Glu	gag Glu 2365	gag Glu	ctc Leu	ttc Phe	tcg Ser	gtg Val 2370	cgc Arg	gtg Val	cag Gln	7119
atg Met	gag Glu 2375	gag Glu	ctg Leu	agc Ser	aag Lys	ctc Leu 2380	aag Lys	gca Ala	cgc Arg	atc Ile	gag Glu 2385	gct Ala	gag Glu	aac Asn	7164
cgc Arg	gca Ala 2390	ctc Leu	atc Ile	ttg Leu	cgt Arg	gac Asp 2395	aag Lys	gac Asp	aat Asn	acg Thr	cag Gln 2400	cgc Arg	ttc Phe	ctg Leu	7209
cag Gln	gag Glu 2405	gag Glu	gct Ala	gag Glu	aag Lys	atg Met 2410	aag Lys	cag Gln	gtg Val	gcg Ala	gag Glu 2415	gag Glu	gcc Ala	gcg Ala	7254
cgg Arg	ctg Leu 2420	agt Ser	gtg Val	gcg Ala	gcc Ala	caa Gln 2425	gag Glu	gct Ala	gcg Ala	cga Arg	ctg Leu 2430	cgg Arg	cag Gln	ctg Leu	7299
gca Ala	gag Glu 2435	gag Glu	gac Asp	ctg Leu	gca Ala	cag Gln 2440	cag Gln	cgg Arg	gcc Ala	ttg Leu	gca Ala 2445	gag Glu	aag Lys	atg Met	7344
ctc Leu	aag Lys 2450	gag Glu	aag Lys	atg Met	cag Gln	gcg Ala 2455	gtg Val	cag Gln	gag Glu	gcc Ala	acg Thr 2460	cga Arg	ctc Leu	aag Lys	7389
gct Ala	gag Glu 2465	gcg Ala	gaa Glu	ctg Leu	ctg Leu	cag Gln 2470	cag Gln	cag Gln	aag Lys	gag Glu	ctt Leu 2475	gcg Ala	cag Gln	gag Glu	7434
cag Gln	gcg Ala 2480	cgg Arg	cgg Arg	ctg Leu	cag Gln	gag Glu 2485	gac Asp	aag Lys	gag Glu	cag Gln	atg Met 2490	gcg Ala	cag Gln	cag Gln	7479
ctg Leu	gcg Ala 2495	gag Glu	gag Glu	acg Thr	cag Gln	ggc Gly 2500	ttc Phe	cag Gln	cgg Arg	acg Thr	ctg Leu 2505	gag Glu	gcc Ala	gag Glu	7524
cgg Arg	cag Gln 2510	cgg Arg	cag Gln	ctg Leu	gag Glu	atg Met 2515	agc Ser	gct Ala	gag Glu	gct Ala	gag Glu 2520	cgc Arg	ctc Leu	aag Lys	7569
ctg Leu	cgt Arg 2525	gtg Val	gcc Ala	gag Glu	atg Met	agc Ser 2530	cga Arg	gcc Ala	cag Gln	gcc Ala	cgc Arg 2535	gct Ala	gag Glu	gag Glu	7614
gac Asp	gcc Ala 2540	cag Gln	cgc Arg	ttc Phe	cgg Arg	aag Lys 2545	cag Gln	gcg Ala	gag Glu	gag Glu	atc Ile 2550	ggt Gly	gag Glu	aag Lys	7659
ctg Leu	cac His 2555	cgc Arg	acg Thr	gag Glu	ctc Leu	gcc Ala 2560	acc Thr	cag Gln	gag Glu	aag Lys	gtg Val 2565	acc Thr	ctg Leu	gtg Val	7704
cag	aca	ctg	gag	atc	cag	cga	cag	cag	agt	gac	cat	gat	gcc	gag	7749

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Gln	Thr	Leu	Glu	Ile	Gln	Arg	Gln	Gln	Ser	Asp	His	Asp	Ala	Glu		
	2570					2575					2580					
cgc	ctg	cgg	gag	gcc	atc	gct	gag	ctg	gag	cgt	gag	aag	gag	aag		7794
Arg	Leu	Arg	Glu	Ala	Ile	Ala	Glu	Leu	Glu	Arg	Glu	Lys	Glu	Lys		
	2585					2590					2595					
ctc	caa	cag	gag	gcc	aaa	ctg	ctg	cag	ctc	aag	tct	gag	gag	atg		7839
Leu	Gln	Gln	Glu	Ala	Lys	Leu	Leu	Gln	Leu	Lys	Ser	Glu	Glu	Met		
	2600					2605					2610					
cag	acg	gtg	cag	cag	gag	cag	ctg	ctg	cag	gag	acg	cag	gcc	ctg		7884
Gln	Thr	Val	Gln	Gln	Glu	Gln	Leu	Leu	Gln	Glu	Thr	Gln	Ala	Leu		
	2615					2620					2625					
cag	caa	agc	ttc	ctc	tct	gaa	aag	gac	agc	ctg	cta	cag	cgg	gag		7929
Gln	Gln	Ser	Phe	Leu	Ser	Glu	Lys	Asp	Ser	Leu	Leu	Gln	Arg	Glu		
	2630					2635					2640					
cgc	ttc	atc	gag	cag	gag	aag	gcc	aag	ctg	gag	cag	ctc	ttc	cag		7974
Arg	Phe	Ile	Glu	Gln	Glu	Lys	Ala	Lys	Leu	Glu	Gln	Leu	Phe	Gln		
	2645					2650					2655					
gac	gag	gtg	gcc	aag	gca	cag	cag	ctg	cgt	gag	gag	cag	cag	cgg		8019
Asp	Glu	Val	Ala	Lys	Ala	Gln	Gln	Leu	Arg	Glu	Glu	Gln	Gln	Arg		
	2660					2665					2670					
cag	cag	cag	cag	atg	gag	cag	gaa	cgg	cag	cgg	ctg	gtg	gcc	agc		8064
Gln	Gln	Gln	Gln	Met	Glu	Gln	Glu	Arg	Gln	Arg	Leu	Val	Ala	Ser		
	2675					2680					2685					
atg	gag	gag	gcg	cgg	cgg	cgg	cag	cat	gag	gcc	gag	gag	ggc	gtg		8109
Met	Glu	Glu	Ala	Arg	Arg	Arg	Gln	His	Glu	Ala	Glu	Glu	Gly	Val		
	2690					2695					2700					
cgg	cgc	aag	cag	gag	gag	ctg	cag	cag	ctg	gag	cag	cag	cgg	cgg		8154
Arg	Arg	Lys	Gln	Glu	Glu	Leu	Gln	Gln	Leu	Glu	Gln	Gln	Arg	Arg		
	2705					2710					2715					
cag	cag	gag	gag	ctg	ctg	gct	gag	gag	aac	cag	agg	ctg	cgt	gag		8199
Gln	Gln	Glu	Glu	Leu	Leu	Ala	Glu	Glu	Asn	Gln	Arg	Leu	Arg	Glu		
	2720					2725					2730					
cag	ctg	cag	ctc	ctg	gag	gag	cag	cac	cgg	gcc	gcg	ctg	gcg	cac		8244
Gln	Leu	Gln	Leu	Leu	Glu	Glu	Gln	His	Arg	Ala	Ala	Leu	Ala	His		
	2735					2740					2745					
tca	gag	gag	gtc	act	gcc	tcg	cag	gtg	gct	gcc	aca	aag	acc	ctg		8289
Ser	Glu	Glu	Val	Thr	Ala	Ser	Gln	Val	Ala	Ala	Thr	Lys	Thr	Leu		
	2750					2755					2760					
ccc	aat	ggc	cgg	gat	gca	ctt	gat	ggc	ccc	gcg	gca	gag	gca	gag		8334
Pro	Asn	Gly	Arg	Asp	Ala	Leu	Asp	Gly	Pro	Ala	Ala	Glu	Ala	Glu		
	2765					2770					2775					
ccg	gag	cac	agc	ttc	gat	ggc	ctg	cgg	cgg	aag	gtg	tca	gct	cag		8379
Pro	Glu	His	Ser	Phe	Asp	Gly	Leu	Arg	Arg	Lys	Val	Ser	Ala	Gln		
	2780					2785					2790					
agg	ctg	cag	gag	gcc	ggc	atc	ctg	agt	gcg	gag	gag	ctg	cag	cgg		8424
Arg	Leu	Gln	Glu	Ala	Gly	Ile	Leu	Ser	Ala	Glu	Glu	Leu	Gln	Arg		
	2795					2800					2805					
ttg	gcg	cag	ggc	cac	acc	acg	gtg	gac	gag	ctc	gca	cgg	cgg	gaa		8469
Leu	Ala	Gln	Gly	His	Thr	Thr	Val	Asp	Glu	Leu	Ala	Arg	Arg	Glu		
	2810					2815					2820					
gac	gtg	cgc	cac	tac	ctg	cag	ggc	cgc	agc	agt	atc	gca	ggg	ctg		8514
Asp	Val	Arg	His	Tyr	Leu	Gln	Gly	Arg	Ser	Ser	Ile	Ala	Gly	Leu		

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2825						2830						2835					
tgt	ctg	aag	gcc	acc	aat	gag	aag	ctg	agt	gtt	tac	gcc	gcc	ctg			8559
Leu	Leu	Lys	Ala	Thr	Asn	Glu	Lys	Leu	Ser	Val	Tyr	Ala	Ala	Leu			
	2840					2845					2850						
cag	agg	cag	ctg	ctg	agt	ccc	ggc	acg	gcc	ctc	atc	ctg	ctg	gag			8604
Gln	Arg	Gln	Leu	Leu	Ser	Pro	Gly	Thr	Ala	Leu	Ile	Leu	Leu	Glu			
	2855					2860					2865						
gcg	cag	gcg	gcc	tca	ggc	ttc	ctg	ctg	gac	cct	gtg	cgg	aac	cgg			8649
Ala	Gln	Ala	Ala	Ser	Gly	Phe	Leu	Leu	Asp	Pro	Val	Arg	Asn	Arg			
	2870					2875					2880						
cgg	ctg	acc	gtc	aac	gag	gct	gtg	aag	gag	ggg	gtg	gtg	ggc	ccc			8694
Arg	Leu	Thr	Val	Asn	Glu	Ala	Val	Lys	Glu	Gly	Val	Val	Gly	Pro			
	2885					2890					2895						
gag	ctg	cac	cac	aag	ctg	ctg	tcg	gcc	gag	cgc	gcc	gtc	act	ggc			8739
Glu	Leu	His	His	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly			
	2900					2905					2910						
tac	aag	gac	ccc	tac	act	ggc	cag	cag	atc	tct	ctc	ttc	caa	gcc			8784
Tyr	Lys	Asp	Pro	Tyr	Thr	Gly	Gln	Gln	Ile	Ser	Leu	Phe	Gln	Ala			
	2915					2920					2925						
atg	cag	aag	ggc	ctc	atc	gtc	cgg	gag	cac	ggc	atc	cgc	ctg	ctg			8829
Met	Gln	Lys	Gly	Leu	Ile	Val	Arg	Glu	His	Gly	Ile	Arg	Leu	Leu			
	2930					2935					2940						
gag	gcc	cag	atc	gcc	acg	ggc	ggc	gtt	atc	gac	ccc	gtg	cac	agc			8874
Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp	Pro	Val	His	Ser			
	2945					2950					2955						
cac	cgc	gtg	ccc	gtg	gac	gtg	gcc	tac	cgg	cgc	ggc	tac	ttc	gac			8919
His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Arg	Arg	Gly	Tyr	Phe	Asp			
	2960					2965					2970						
gag	gag	atg	aac	cgc	gtc	ctg	gcg	gac	ccc	agc	gac	gac	acc	aag			8964
Glu	Glu	Met	Asn	Arg	Val	Leu	Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys			
	2975					2980					2985						
ggc	ttc	ttt	gac	ccc	aac	acg	cac	gag	aac	ctc	acg	tac	ctg	cag			9009
Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln			
	2990					2995					3000						
cta	ctg	gag	cgc	tgc	gtg	gag	gac	ccc	gag	acg	ggc	ctg	tgc	ctt			9054
Leu	Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro	Glu	Thr	Gly	Leu	Cys	Leu			
	3005					3010					3015						
ctg	cca	ctc	acg	gat	aag	gct	gcc	aag	ggc	ggg	gag	ctg	gtc	tac			9099
Leu	Pro	Leu	Thr	Asp	Lys	Ala	Ala	Lys	Gly	Gly	Glu	Leu	Val	Tyr			
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act	gac	tcc	gag	gcc	cgg	gac	gtc	ttt	gag	aag	gcc	acc	gtg	tct			9144
Thr	Asp	Ser	Glu	Ala	Arg	Asp	Val	Phe	Glu	Lys	Ala	Thr	Val	Ser			
	3035					3040					3045						
gcg	ccg	ttc	ggc	aag	ttc	cag	ggc	aag	acg	gtg	acc	att	tgg	gag			9189
Ala	Pro	Phe	Gly	Lys	Phe	Gln	Gly	Lys	Thr	Val	Thr	Ile	Trp	Glu			
	3050					3055					3060						
atc	atc	aac	tcg	gaa	tac	ttc	acg	gca	gag	cag	cgg	cgg	gac	ctg			9234
Ile	Ile	Asn	Ser	Glu	Tyr	Phe	Thr	Ala	Glu	Gln	Arg	Arg	Asp	Leu			
	3065					3070					3075						
ctg	cgg	cag	ttc	cgc	acg	ggc	cgg	atc	aca	gtg	gag	aag	atc	atc			9279
Leu	Arg	Gln	Phe	Arg	Thr	Gly	Arg	Ile	Thr	Val	Glu	Lys	Ile	Ile			
	3080					3085					3090						

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aag Lys	atc Ile 3095	atc Ile	atc Ile	acg Thr	gtg Val	gtg Val 3100	gag Glu	gag Glu	cag Gln	gag Glu	cag Gln 3105	aag Lys	ggc Gly	cgg Arg	9324
ctt Leu	tgc Cys 3110	ttt Phe	gag Glu	ggc Gly	ctg Leu	cgc Arg 3115	agc Ser	ctg Leu	gtg Val	cca Pro	gcc Ala 3120	gcc Ala	gag Glu	ctg Leu	9369
ctg Leu	gag Glu 3125	agc Ser	agg Arg	gtc Val	atc Ile	gac Asp 3130	cgc Arg	gag Glu	ctc Leu	tac Tyr	cag Gln 3135	cag Gln	ctg Leu	cag Gln	9414
cga Arg	ggt Gly 3140	gag Glu	cgc Arg	tct Ser	gtg Val	cga Arg 3145	gac Asp	gta Val	gcc Ala	gag Glu	gtg Val 3150	gac Asp	act Thr	gtg Val	9459
cgg Arg	cgg Arg 3155	gct Ala	ctc Leu	cgg Arg	ggt Gly	gcc Ala 3160	aac Asn	gtc Val	atc Ile	gcg Ala	ggt Gly 3165	gta Val	tgg Trp	ctg Leu	9504
gag Glu	gag Glu 3170	gcg Ala	ggg Gly	cag Gln	aag Lys	ctg Leu 3175	agt Ser	atc Ile	tac Tyr	aat Asn	gcc Ala 3180	ctg Leu	aag Lys	aaa Lys	9549
gac Asp	ctg Leu 3185	ctg Leu	cca Pro	tcc Ser	gac Asp	atg Met 3190	gcc Ala	gtg Val	gcc Ala	ctg Leu	ttg Leu 3195	gaa Glu	gcc Ala	cag Gln	9594
gcc Ala	ggc Gly 3200	acc Thr	ggg Gly	cac His	atc Ile	atc Ile 3205	gac Asp	ccc Pro	gcc Ala	acc Thr	agc Ser 3210	gcc Ala	cgg Arg	ctg Leu	9639
acc Thr	gtg Val 3215	gac Asp	gag Glu	gca Ala	gtg Val	cgt Arg 3220	gct Ala	ggc Gly	ctg Leu	gtg Val	ggc Gly 3225	ccc Pro	gag Glu	ttt Phe	9684
cat His	gag Glu 3230	aag Lys	ctg Leu	cta Leu	tca Ser	gcc Ala 3235	gag Glu	aag Lys	gct Ala	gtg Val	aca Thr 3240	ggg Gly	tac Tyr	agg Arg	9729
gac Asp	ccc Pro 3245	tac Tyr	aca Thr	ggg Gly	cag Gln	agc Ser 3250	gtc Val	tcc Ser	ctg Leu	ttc Phe	cag Gln 3255	gcc Ala	ctg Leu	aag Lys	9774
aag Lys	ggc Gly 3260	ctc Leu	att Ile	ccc Pro	cgg Arg	gag Glu 3265	cag Gln	ggc Gly	ctg Leu	cgc Arg	ctg Leu 3270	ttg Leu	gac Asp	gcc Ala	9819
cag Gln	ctg Leu 3275	tcc Ser	acg Thr	ggc Gly	ggc Gly	atc Ile 3280	gtg Val	gac Asp	ccc Pro	agc Ser	aag Lys 3285	agc Ser	cac His	cgc Arg	9864
gtg Val	ccc Pro 3290	ctg Leu	gat Asp	gtc Val	gcc Ala	tgc Cys 3295	gcc Ala	cga Arg	ggc Gly	tgc Cys	ctg Leu 3300	gat Asp	gag Glu	gag Glu	9909
acc Thr	agc Ser 3305	agg Arg	gcc Ala	ctg Leu	tcg Ser	gca Ala 3310	cca Pro	agg Arg	gcc Ala	gac Asp	gcc Ala 3315	aag Lys	gcc Ala	tac Tyr	9954
agt Ser	gac Asp 3320	ccc Pro	agc Ser	aca Thr	ggg Gly	gag Glu 3325	ccg Pro	gcc Ala	acc Thr	tac Tyr	ggc Gly 3330	gag Glu	ctc Leu	cag Gln	9999
cag Gln	cgg Arg 3335	tgc Cys	cgg Arg	ccc Pro	gac Asp	cag Gln 3340	ctg Leu	acc Thr	ggg Gly	ctg Leu	agc Ser 3345	ctg Leu	ctg Leu	ccg Pro	10044

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ctc Leu	tca Ser 3350	gaa Glu	aag Lys	gct Ala	gct Ala	cgg Arg 3355	gcc Ala	cgg Arg	cag Gln	gag Glu	gag Glu 3360	ctc Leu	tac Tyr	tca Ser	10089
gag Glu	ctg Leu 3365	cag Gln	gcc Ala	cgt Arg	gag Glu	acc Thr 3370	ttt Phe	gaa Glu	aag Lys	acc Thr	ccg Pro 3375	gtt Val	gag Glu	gtc Val	10134
ccc Pro	gtg Val 3380	ggt Gly	ggc Gly	ttc Phe	aag Lys	ggc Gly 3385	agg Arg	acg Thr	gtg Val	acg Thr	gtg Val 3390	tgg Trp	gag Glu	ctc Leu	10179
atc Ile	agc Ser 3395	tct Ser	gag Glu	tac Tyr	ttc Phe	act Thr 3400	gcg Ala	gag Glu	cag Gln	cgg Arg	cag Gln 3405	gag Glu	ctg Leu	ttg Leu	10224
cgt Arg	cag Gln 3410	ttc Phe	cgc Arg	acg Thr	ggc Gly	aag Lys 3415	gtc Val	acc Thr	gtg Val	gag Glu	aag Lys 3420	gtc Val	atc Ile	aag Lys	10269
att Ile	ctc Leu 3425	att Ile	acc Thr	atc Ile	gtg Val	gag Glu 3430	gag Glu	gtg Val	gag Glu	acc Thr	ctg Leu 3435	cgg Arg	cag Gln	gag Glu	10314
agg Arg	ctg Leu 3440	tcc Ser	ttc Phe	agc Ser	ggc Gly	ctc Leu 3445	cgt Arg	gcc Ala	cct Pro	gtg Val	cca Pro 3450	gcc Ala	agc Ser	gag Glu	10359
ctc Leu	ctg Leu 3455	gct Ala	tcc Ser	ggg Gly	gtc Val	ctc Leu 3460	agc Ser	aga Arg	gcc Ala	cag Gln	ttt Phe 3465	gag Glu	cag Gln	ctc Leu	10404
aag Lys	gac Asp 3470	ggc Gly	aag Lys	acg Thr	acg Thr	gtc Val 3475	aag Lys	gac Asp	ctt Leu	tcg Ser	gag Glu 3480	ctg Leu	ggc Gly	tcc Ser	10449
gtg Val	cgg Arg 3485	acg Thr	ctg Leu	ctg Leu	cag Gln	ggc Gly 3490	agt Ser	ggc Gly	tgc Cys	ctc Leu	gcc Ala 3495	ggc Gly	atc Ile	tac Tyr	10494
ctg Leu	gag Glu 3500	gac Asp	acc Thr	aag Lys	gag Glu	aag Lys 3505	gtg Val	tcc Ser	atc Ile	tac Tyr	gag Glu 3510	gcc Ala	atg Met	cgc Arg	10539
cgg Arg	ggc Gly 3515	ctg Leu	ctg Leu	aga Arg	gcc Ala	aca Thr 3520	acg Thr	gct Ala	gcg Ala	ctc Leu	ctg Leu 3525	ctg Leu	gag Glu	gcg Ala	10584
cag Gln	gcg Ala 3530	gcc Ala	act Thr	ggc Gly	ttc Phe	ctg Leu 3535	gtg Val	gac Asp	ccc Pro	gtg Val	cgg Arg 3540	aac Asn	cag Gln	cgc Arg	10629
ctg Leu	tat Tyr 3545	gtc Val	cac His	gag Glu	gcc Ala	gtg Val 3550	aag Lys	gcg Ala	ggc Gly	gtg Val	gtg Val 3555	ggc Gly	ccc Pro	gag Glu	10674
ctt Leu	cac His 3560	gag Glu	cag Gln	ctg Leu	ctg Leu	tct Ser 3565	gcc Ala	gag Glu	aag Lys	gcc Ala	gtc Val 3570	acc Thr	ggc Gly	tac Tyr	10719
aga Arg	gac Asp 3575	ccc Pro	tac Tyr	tcg Ser	ggc Gly	agc Ser 3580	acc Thr	atc Ile	tcc Ser	ctc Leu	ttc Phe 3585	cag Gln	gcc Ala	atg Met	10764
cag Gln	aag Lys 3590	ggc Gly	ctg Leu	gtt Val	ctc Leu	cgg Arg 3595	cag Gln	cac His	ggc Gly	atc Ile	cgc Arg 3600	ctg Leu	ctg Leu	gag Glu	10809
gcc cag	atc gcc	acg ggc	ggc ggc	atc atc	gac ccc	gtg cac	agc cac	agc cac	agc cac	agc cac	agc cac	agc cac	agc cac	agc cac	10854

Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Val	His	Ser	His	
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cgc	gtg	cct	gtg	gac	gtg	gcc	tac	cag	cgc	ggc	tac	ttc	agt	gag	10899
Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Ser	Glu	
	3620					3625					3630				
gag	atg	aac	cgc	gtc	ctg	gcg	gac	ccc	agc	gac	gac	acc	aag	ggc	10944
Glu	Met	Asn	Arg	Val	Leu	Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	
	3635					3640					3645				
ttc	ttt	gac	ccc	aac	acg	cat	gag	aac	ctc	acg	tac	agg	cag	ctg	10989
Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Arg	Gln	Leu	
	3650					3655					3660				
ctg	gag	cgg	tgc	gtg	gag	gac	ccc	gag	acg	ggc	ttg	cgc	ctt	ctg	11034
Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro	Glu	Thr	Gly	Leu	Arg	Leu	Leu	
	3665					3670					3675				
cca	ctg	aaa	ggg	gcg	gag	aag	gct	gag	gtg	gtg	gag	acc	acg	cag	11079
Pro	Leu	Lys	Gly	Ala	Glu	Lys	Ala	Glu	Val	Val	Glu	Thr	Thr	Gln	
	3680					3685					3690				
gtg	tac	act	gag	gag	gag	aca	aga	agg	gca	ttt	gaa	gag	aca	cag	11124
Val	Tyr	Thr	Glu	Glu	Glu	Thr	Arg	Arg	Ala	Phe	Glu	Glu	Thr	Gln	
	3695					3700					3705				
atc	gac	att	ccc	ggc	ggc	ggc	agc	cac	ggc	ggc	tcc	acc	atg	tcc	11169
Ile	Asp	Ile	Pro	Gly	Gly	Gly	Ser	His	Gly	Gly	Ser	Thr	Met	Ser	
	3710					3715					3720				
ctg	tgg	gag	gtg	atg	cag	tcg	gac	ctg	atc	ccc	gag	gag	cag	cgg	11214
Leu	Trp	Glu	Val	Met	Gln	Ser	Asp	Leu	Ile	Pro	Glu	Glu	Gln	Arg	
	3725					3730					3735				
gcc	cag	ctg	atg	gct	gac	ttc	cag	gcc	ggc	cgg	gtg	acc	aag	gaa	11259
Ala	Gln	Leu	Met	Ala	Asp	Phe	Gln	Ala	Gly	Arg	Val	Thr	Lys	Glu	
	3740					3745					3750				
cgc	atg	atc	atc	atc	atc	atc	gag	atc	att	gag	aag	aca	gag	atc	11304
Arg	Met	Ile	Ile	Ile	Ile	Ile	Glu	Ile	Ile	Glu	Lys	Thr	Glu	Ile	
	3755					3760					3765				
atc	cgc	cag	cag	ggt	ctg	gcc	tcc	tac	gac	tac	gtg	cgc	cgc	cgc	11349
Ile	Arg	Gln	Gln	Gly	Leu	Ala	Ser	Tyr	Asp	Tyr	Val	Arg	Arg	Arg	
	3770					3775					3780				
ctc	acg	gct	gag	gac	ctg	ttc	gag	gct	cgg	atc	atc	tct	ctc	gag	11394
Leu	Thr	Ala	Glu	Asp	Leu	Phe	Glu	Ala	Arg	Ile	Ile	Ser	Leu	Glu	
	3785					3790					3795				
acc	tac	aac	ctg	ctc	cgg	gag	ggc	acc	agg	agc	ctc	cgt	gag	gct	11439
Thr	Tyr	Asn	Leu	Leu	Arg	Glu	Gly	Thr	Arg	Ser	Leu	Arg	Glu	Ala	
	3800					3805					3810				
ctc	gag	gcg	gag	tcc	gcc	tgg	tgc	tac	ctc	tat	ggc	acg	ggc	tcc	11484
Leu	Glu	Ala	Glu	Ser	Ala	Trp	Cys	Tyr	Leu	Tyr	Gly	Thr	Gly	Ser	
	3815					3820					3825				
gtg	gct	ggt	gtc	tac	ctg	ccc	ggt	tcc	agg	cag	aca	ctg	agc	atc	11529
Val	Ala	Gly	Val	Tyr	Leu	Pro	Gly	Ser	Arg	Gln	Thr	Leu	Ser	Ile	
	3830					3835					3840				
tac	cag	gct	ctc	aag	aaa	ggg	ctg	ctg	agt	gcc	gag	gtg	gcc	cgc	11574
Tyr	Gln	Ala	Leu	Lys	Lys	Gly	Leu	Leu	Ser	Ala	Glu	Val	Ala	Arg	
	3845					3850					3855				
ctg	ctg	ctg	gag	gca	cag	gca	gcc	aca	ggc	ttc	ctg	ctg	gac	ccg	11619
Leu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Leu	Leu	Asp	Pro	

3860						3865						3870					
gtg	aag	ggg	gag	cgg	ctg	act	gtg	gat	gag	gct	gtg	cgg	aag	ggc			11664
Val	Lys	Gly	Glu	Arg	Leu	Thr	Val	Asp	Glu	Ala	Val	Arg	Lys	Gly			
	3875					3880					3885						
ctc	gtg	ggg	ccc	gag	ctg	cac	gac	cgc	ctg	ctc	tcg	gct	gag	cgg			11709
Leu	Val	Gly	Pro	Glu	Leu	His	Asp	Arg	Leu	Leu	Ser	Ala	Glu	Arg			
	3890					3895					3900						
gcg	gtc	acc	ggc	tac	cgt	gac	ccc	tac	acc	gag	cag	acc	atc	tcg			11754
Ala	Val	Thr	Gly	Tyr	Arg	Asp	Pro	Tyr	Thr	Glu	Gln	Thr	Ile	Ser			
	3905					3910					3915						
ctc	ttc	cag	gcc	atg	aag	aag	gag	ctg	atc	cct	act	gag	gag	gcc			11799
Leu	Phe	Gln	Ala	Met	Lys	Lys	Glu	Leu	Ile	Pro	Thr	Glu	Glu	Ala			
	3920					3925					3930						
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Leu	Arg	Leu	Leu	Asp	Ala	Gln	Leu	Ala	Thr	Gly	Gly	Ile	Val	Asp			
	3935					3940					3945						
ccc	cgc	ctg	ggc	ttc	cac	ctt	ccc	ctg	gag	gtg	gct	tac	cag	cgt			11889
Pro	Arg	Leu	Gly	Phe	His	Leu	Pro	Leu	Glu	Val	Ala	Tyr	Gln	Arg			
	3950					3955					3960						
ggc	tac	ctc	aac	aag	gac	acg	cac	gac	cag	ctg	tca	gag	ccc	agc			11934
Gly	Tyr	Leu	Asn	Lys	Asp	Thr	His	Asp	Gln	Leu	Ser	Glu	Pro	Ser			
	3965					3970					3975						
gag	gtg	cgc	agc	tac	gtg	gac	ccg	tcc	acc	gac	gag	cgc	ctc	agc			11979
Glu	Val	Arg	Ser	Tyr	Val	Asp	Pro	Ser	Thr	Asp	Glu	Arg	Leu	Ser			
	3980					3985					3990						
tac	acg	cag	ctg	ctc	agg	cgg	tgc	cgt	cgt	gac	gac	ggc	acc	ggc			12024
Tyr	Thr	Gln	Leu	Leu	Arg	Arg	Cys	Arg	Arg	Asp	Asp	Gly	Thr	Gly			
	3995					4000					4005						
cag	ctg	ctc	ctg	cca	ctg	tcg	gac	gcc	cgc	aag	ctg	acc	ttc	cgt			12069
Gln	Leu	Leu	Leu	Pro	Leu	Ser	Asp	Ala	Arg	Lys	Leu	Thr	Phe	Arg			
	4010					4015					4020						
ggc	ctg	cgg	aag	cag	atc	acc	atg	gag	gag	ctg	gtg	cgc	tcg	cag			12114
Gly	Leu	Arg	Lys	Gln	Ile	Thr	Met	Glu	Glu	Leu	Val	Arg	Ser	Gln			
	4025					4030					4035						
gtc	atg	gac	gag	gcc	acg	gcg	ctg	cag	ctg	cgg	gag	ggc	ctg	acc			12159
Val	Met	Asp	Glu	Ala	Thr	Ala	Leu	Gln	Leu	Arg	Glu	Gly	Leu	Thr			
	4040					4045					4050						
tcc	atc	gag	gag	gtc	acc	aag	aac	ttg	cag	aag	ttc	ctg	gaa	ggc			12204
Ser	Ile	Glu	Glu	Val	Thr	Lys	Asn	Leu	Gln	Lys	Phe	Leu	Glu	Gly			
	4055					4060					4065						
acc	agc	tgc	atc	gct	ggc	gtc	ttc	gtg	gac	gcc	acc	aag	gaa	cgg			12249
Thr	Ser	Cys	Ile	Ala	Gly	Val	Phe	Val	Asp	Ala	Thr	Lys	Glu	Arg			
	4070					4075					4080						
ctc	tcg	gtg	tac	cag	gcc	atg	aag	aag	ggc	atc	atc	cgc	ccc	ggc			12294
Leu	Ser	Val	Tyr	Gln	Ala	Met	Lys	Lys	Gly	Ile	Ile	Arg	Pro	Gly			
	4085					4090					4095						
aca	gcc	ttt	gag	ctc	ctg	gag	gcg	cag	gcg	gcc	acc	ggc	tac	gtc			12339
Thr	Ala	Phe	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Tyr	Val			
	4100					4105					4110						
atc	gac	ccc	atc	aag	gga	ctg	aag	ctg	acg	gtg	gag	gag	gct	gtg			12384
Ile	Asp	Pro	Ile	Lys	Gly	Leu	Lys	Leu	Thr	Val	Glu	Glu	Ala	Val			
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cgt Arg 4130	atg Met 4130	ggc Gly 4130	att Ile 4130	gtg Val 4130	ggc Gly 4130	ccc Pro 4135	gag Glu 4135	ttc Phe 4135	aag Lys 4135	gac Asp 4135	aag Lys 4140	ctg Leu 4140	ctg Leu 4140	tcg Ser 4140	12429
gcc Ala 4145	gag Glu 4145	cgc Arg 4145	gcc Ala 4145	gtc Val 4145	act Thr 4145	ggg Gly 4150	tac Tyr 4150	aag Lys 4150	gac Asp 4150	ccc Pro 4150	tac Tyr 4155	tct Ser 4155	ggg Gly 4155	aag Lys 4155	12474
ctc Leu 4160	atc Ile 4160	tcc Ser 4160	ctc Leu 4160	ttc Phe 4160	cag Gln 4160	gcc Ala 4165	atg Met 4165	aag Lys 4165	aag Lys 4165	ggc Gly 4165	ctg Leu 4170	atc Ile 4170	ctg Leu 4170	aag Lys 4170	12519
gac Asp 4175	cat His 4175	ggc Gly 4175	atc Ile 4175	cgc Arg 4175	ctg Leu 4175	ctg Leu 4180	gag Glu 4180	gcc Ala 4180	cag Gln 4180	atc Ile 4180	gcc Ala 4185	acg Thr 4185	ggc Gly 4185	ggc Gly 4185	12564
atc Ile 4190	atc Ile 4190	gac Asp 4190	cct Pro 4190	gag Glu 4190	gag Glu 4190	agc Ser 4195	cac His 4195	cgg Arg 4195	ctg Leu 4195	ccc Pro 4195	gtg Val 4200	gag Glu 4200	gtg Val 4200	gcc Ala 4200	12609
tac Tyr 4205	aag Lys 4205	cgc Arg 4205	ggc Gly 4205	ctc Leu 4205	ttc Phe 4205	gat Asp 4210	gag Glu 4210	gag Glu 4210	atg Met 4210	aac Asn 4210	gag Glu 4215	atc Ile 4215	ctg Leu 4215	acc Thr 4215	12654
gac Asp 4220	ccc Pro 4220	tcg Ser 4220	gac Asp 4220	gac Asp 4220	acc Thr 4220	aag Lys 4225	ggc Gly 4225	ttc Phe 4225	ttt Phe 4225	gac Asp 4225	cct Pro 4230	aac Asn 4230	acg Thr 4230	gag Glu 4230	12699
gag Glu 4235	aac Asn 4235	ctc Leu 4235	acc Thr 4235	tac Tyr 4235	ctg Leu 4235	cag Gln 4240	ctg Leu 4240	atg Met 4240	gag Glu 4240	cgt Arg 4240	tgt Cys 4245	atc Ile 4245	act Thr 4245	gac Asp 4245	12744
ccc Pro 4250	cag Gln 4250	acg Thr 4250	ggc Gly 4250	ctg Leu 4250	tgt Cys 4250	ctc Leu 4255	ttg Leu 4255	ccg Pro 4255	ctg Leu 4255	aag Lys 4255	gag Glu 4260	aag Lys 4260	aag Lys 4260	cgg Arg 4260	12789
gag Glu 4265	cgg Arg 4265	aag Lys 4265	acg Thr 4265	tcc Ser 4265	tcc Ser 4265	aag Lys 4270	tcc Ser 4270	tcc Ser 4270	gtg Val 4270	cgc Arg 4275	aag Lys 4275	cgc Arg 4275	cga Arg 4275	gtg Val 4275	12834
gtc Val 4280	atc Ile 4280	gtg Val 4280	gac Asp 4280	ccc Pro 4280	gag Glu 4280	acg Thr 4285	ggc Gly 4285	aag Lys 4285	gag Glu 4285	atg Met 4285	tca Ser 4290	gtg Val 4290	tac Tyr 4290	gag Glu 4290	12879
gcc Ala 4295	tac Tyr 4295	cgc Arg 4295	aag Lys 4295	ggc Gly 4295	ctg Leu 4295	att Ile 4300	gac Asp 4300	cac His 4300	cag Gln 4300	acg Thr 4300	tac Tyr 4305	ctg Leu 4305	gag Glu 4305	ctg Leu 4305	12924
tcc Ser 4310	gag Glu 4310	cag Gln 4310	gag Glu 4310	tgc Cys 4310	gag Glu 4310	tgg Trp 4315	gag Glu 4315	gag Glu 4315	atc Ile 4315	acc Thr 4315	atc Ile 4320	tcc Ser 4320	tcc Ser 4320	tcg Ser 4320	12969
gac Asp 4325	ggc Gly 4325	gtg Val 4325	gtc Val 4325	aag Lys 4325	tcc Ser 4325	atg Met 4330	atc Ile 4330	atc Ile 4330	gac Asp 4330	cgc Arg 4335	cgc Arg 4335	tcc Ser 4335	ggg Gly 4335	cgc Arg 4335	13014
cag Gln 4340	tac Tyr 4340	gac Asp 4340	atc Ile 4340	gat Asp 4340	gat Asp 4340	gcc Ala 4345	atc Ile 4345	gcc Ala 4345	aag Lys 4345	aac Asn 4345	ctc Leu 4350	atc Ile 4350	gac Asp 4350	cgc Arg 4350	13059
tcg Ser 4355	gca Ala 4355	ctg Leu 4355	gac Asp 4355	cag Gln 4355	tac Tyr 4355	cgc Arg 4360	gcc Ala 4360	ggc Gly 4360	acg Thr 4360	ctc Leu 4360	tcc Ser 4365	atc Ile 4365	acc Thr 4365	gag Glu 4365	13104
ttc Phe 4370	gcc Ala 4370	gac Asp 4370	atg Met 4370	ctc Leu 4370	tcg Ser 4370	ggc Gly 4375	aac Asn 4375	gcc Ala 4375	ggt Gly 4375	ggt Gly 4375	ttc Phe 4380	cgc Arg 4380	tcc Ser 4380	cgt Arg 4380	13149



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tcc Ser	tcc Ser 4385	tcg Ser	gtg Val	gga Gly	tcc Ser	tcc Ser 4390	tcc Ser	tcc Ser	tac Tyr	ccc Pro	atc Ile 4395	agc Ser	ccc Pro	gcc Ala	13194
gtc Val	tcc Ser 4400	agg Arg	acc Thr	cag Gln	ctg Leu	gcc Ala 4405	tcc Ser	tgg Trp	tca Ser	gac Asp	ccc Pro 4410	act Thr	gag Glu	gag Glu	13239
acg Thr	ggc Gly 4415	ccc Pro	gtg Val	gct Ala	ggc Gly	atc Ile 4420	ctg Leu	gac Asp	acg Thr	gag Glu	acg Thr 4425	ctg Leu	gag Glu	aag Lys	13284
gtg Val	tcc Ser 4430	atc Ile	acc Thr	gag Glu	gcc Ala	atg Met 4435	cac His	cgg Arg	aac Asn	ctg Leu	gtg Val 4440	gat Asp	aac Asn	atc Ile	13329
acg Thr	ggg Gly 4445	cag Gln	cgg Arg	ctg Leu	ctg Leu	gag Glu 4450	gcg Ala	cag Gln	gcc Ala	tgc Cys	acc Thr 4455	ggg Gly	ggc Gly	atc Ile	13374
atc Ile	gac Asp 4460	ccc Pro	agc Ser	acc Thr	ggc Gly	gag Glu 4465	cgc Arg	ttc Phe	cct Pro	gtc Val	acc Thr 4470	gac Asp	gcc Ala	gtc Val	13419
aac Asn	aag Lys 4475	ggc Gly	ctg Leu	gtg Val	gac Asp	aag Lys 4480	atc Ile	atg Met	gtg Val	gac Asp	cgc Arg 4485	atc Ile	aac Asn	ctg Leu	13464
gcc Ala	cag Gln 4490	aag Lys	gcc Ala	ttc Phe	tgc Cys	ggc Gly 4495	ttc Phe	gag Glu	gac Asp	cca Pro	cgc Arg 4500	acc Thr	aag Lys	acc Thr	13509
aag Lys	atg Met 4505	tcg Ser	gcc Ala	gcc Ala	cag Gln	gcc Ala 4510	ctg Leu	aag Lys	aag Lys	ggc Gly	tgg Trp 4515	ctc Leu	tac Tyr	tac Tyr	13554
gag Glu	gcc Ala 4520	ggc Gly	cag Gln	cgc Arg	ttc Phe	ctg Leu 4525	gag Glu	gtg Val	cag Gln	tac Tyr	ctg Leu 4530	acc Thr	ggc Gly	ggc Gly	13599
ttg Leu	atc Ile 4535	gag Glu	ccc Pro	gac Asp	acg Thr	ccg Pro 4540	ggc Gly	cgc Arg	gtg Val	ccc Pro	ctg Leu 4545	gac Asp	gag Glu	gcc Ala	13644
ctg Leu	cag Gln 4550	cgc Arg	ggc Gly	acg Thr	gtg Val	gac Asp 4555	gcc Ala	cgc Arg	acc Thr	gca Ala	cag Gln 4560	aag Lys	ctg Leu	cgt Arg	13689
gac Asp	gtg Val 4565	ggc Gly	gcc Ala	tac Tyr	tcc Ser	aag Lys 4570	tac Tyr	ctc Leu	acc Thr	tgc Cys	cct Pro 4575	aag Lys	acc Thr	aag Lys	13734
ctc Leu	aag Lys 4580	atc Ile	tcc Ser	tat Tyr	aag Lys	gac Asp 4585	gcg Ala	ctg Leu	gac Asp	cgc Arg	agc Ser 4590	atg Met	gtg Val	gag Glu	13779
gag Glu	ggc Gly 4595	acg Thr	ggg Gly	ctg Leu	cgg Arg	ctg Leu 4600	ctg Leu	gag Glu	gct Ala	gcc Ala	gcg Ala 4605	cag Gln	tcc Ser	acc Thr	13824
aag Lys	ggc Gly 4610	tac Tyr	tac Tyr	agc Ser	ccc Pro	tac Tyr 4615	agc Ser	gtc Val	agc Ser	ggc Gly	tcc Ser 4620	ggc Gly	tct Ser	acc Thr	13869
gct Ala	ggc Gly 4625	tcc Ser	cgc Arg	acc Thr	ggc Gly	tcg Ser 4630	cgc Arg	acc Thr	ggc Gly	tcc Ser	cgg Arg 4635	gcc Ala	ggc Gly	tcc Ser	13914
cgc cgc	ggc agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	agg agg	13959

Arg Arg Gly Ser Phe Asp Ala Thr Gly Ser Gly Phe Ser Met Thr  
4640 4645 4650

gcc tcg ggg tcc tcg gcc tcc ctg ggg ggc cct gag tct gcc gtg 14049  
Ala Ser Gly Ser Ser Ala Ser Leu Gly Gly Pro Glu Ser Ala Val  
4670 4675 4680

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<211>	4684
<212>	PRT
<213>	Homo sapiens
<400>	72

Arg Asp Arg Val Gln Lys Lys Thr Phe Thr Lys Trp Val Asn Lys His  
180 185 190

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Leu Ile Lys Ala Gln Arg His Ile Ser Asp Leu Tyr Glu Asp Leu Arg  
 195 200 205  
 Asp Gly His Asn Leu Ile Ser Leu Leu Glu Val Leu Ser Gly Asp Ser  
 210 215 220  
 Leu Pro Arg Glu Lys Gly Arg Met Arg Phe His Lys Leu Gln Asn Val  
 225 230 235 240  
 Gln Ile Ala Leu Asp Tyr Leu Arg His Arg Gln Val Lys Leu Val Asn  
 245 250 255  
 Ile Arg Asn Asp Asp Ile Ala Asp Gly Asn Pro Lys Leu Thr Leu Gly  
 260 265 270  
 Leu Ile Trp Thr Ile Ile Leu His Phe Gln Ile Ser Asp Ile Gln Val  
 275 280 285  
 Ser Gly Gln Ser Glu Asp Met Thr Ala Lys Glu Lys Leu Leu Leu Trp  
 290 295 300  
 Ser Gln Arg Met Val Glu Gly Tyr Gln Gly Leu Arg Cys Asp Asn Phe  
 305 310 315 320  
 Thr Ser Ser Trp Arg Asp Gly Arg Leu Phe Asn Ala Ile Ile His Arg  
 325 330 335  
 His Lys Pro Leu Leu Ile Asp Met Asn Lys Val Tyr Arg Gln Thr Asn  
 340 345 350  
 Leu Glu Asn Leu Asp Gln Ala Phe Ser Val Ala Glu Arg Asp Leu Gly  
 355 360 365  
 Val Thr Arg Leu Leu Asp Pro Glu Asp Val Asp Val Pro Gln Pro Asp  
 370 375 380  
 Glu Lys Ser Ile Ile Thr Tyr Val Ser Ser Leu Tyr Asp Ala Met Pro  
 385 390 395 400  
 Arg Val Pro Asp Val Gln Asp Gly Val Arg Ala Asn Glu Leu Gln Leu  
 405 410 415  
 Arg Trp Gln Glu Tyr Arg Glu Leu Val Leu Leu Leu Leu Gln Trp Met  
 420 425 430  
 Arg His His Thr Ala Ala Phe Glu Glu Arg Arg Phe Pro Ser Ser Phe  
 435 440 445  
 Glu Glu Ile Glu Ile Leu Trp Ser Gln Phe Leu Lys Phe Lys Glu Met  
 450 455 460

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Glu Leu Pro Ala Lys Glu Ala Asp Lys Asn Arg Ser Lys Gly Ile Tyr  
 465 470 475 480  
 Gln Ser Leu Glu Gly Ala Val Gln Ala Gly Gln Leu Lys Val Pro Pro  
 485 490 495  
 Gly Tyr His Pro Leu Asp Val Glu Lys Glu Trp Gly Lys Leu His Val  
 500 505 510  
 Ala Ile Leu Glu Arg Glu Lys Gln Leu Arg Ser Glu Phe Glu Arg Leu  
 515 520 525  
 Glu Cys Leu Gln Arg Ile Val Thr Lys Leu Gln Met Glu Ala Gly Leu  
 530 535 540  
 Cys Glu Glu Gln Leu Asn Gln Ala Asp Ala Leu Leu Gln Ser Asp Val  
 545 550 555 560  
 Arg Leu Leu Ala Ala Gly Lys Val Pro Gln Arg Ala Gly Glu Val Glu  
 565 570 575  
 Arg Asp Leu Asp Lys Ala Asp Ser Met Ile Arg Leu Leu Phe Asn Asp  
 580 585 590  
 Val Gln Thr Leu Lys Asp Gly Arg His Pro Gln Gly Glu Gln Met Tyr  
 595 600 605  
 Arg Arg Val Tyr Arg Leu His Glu Arg Leu Val Ala Ile Arg Thr Glu  
 610 615 620  
 Tyr Asn Leu Arg Leu Lys Ala Gly Val Ala Ala Pro Ala Thr Gln Val  
 625 630 635 640  
 Ala Gln Val Thr Leu Gln Ser Val Gln Arg Arg Pro Glu Leu Glu Asp  
 645 650 655  
 Ser Thr Leu Arg Tyr Leu Gln Asp Leu Leu Ala Trp Val Glu Glu Asn  
 660 665 670  
 Gln His Arg Val Asp Gly Ala Glu Trp Gly Val Asp Leu Pro Ser Val  
 675 680 685  
 Glu Ala Gln Leu Gly Ser His Arg Gly Leu His Gln Ser Ile Glu Glu  
 690 695 700  
 Phe Arg Ala Lys Ile Glu Arg Ala Arg Ser Asp Glu Gly Gln Leu Ser  
 705 710 715 720  
 Pro Ala Thr Arg Gly Ala Tyr Arg Asp Cys Leu Gly Arg Leu Asp Leu  
 725 730 735

Gln Tyr Ala Lys Leu Leu Asn Ser Ser Lys Ala Arg Leu Arg Ser Leu  
740 745 750

Glu Ser Leu His Ser Phe Val Ala Ala Ala Thr Lys Glu Leu Met Trp  
755 760 765

Leu Asn Glu Lys Glu Glu Glu Glu Val Gly Phe Asp Trp Ser Asp Arg  
770 775 780

Asn Thr Asn Met Thr Ala Lys Lys Glu Ser Tyr Ser Ala Leu Met Arg  
785 790 795 800

Glu Leu Glu Leu Lys Glu Lys Lys Ile Lys Glu Leu Gln Asn Ala Gly  
805 810 815

Asp Arg Leu Leu Arg Glu Asp His Pro Ala Arg Pro Thr Val Glu Ser  
820 825 830

Phe Gln Ala Ala Leu Gln Thr Gln Trp Ser Trp Met Leu Gln Leu Cys  
835 840 845

Cys Cys Ile Glu Ala His Leu Lys Glu Asn Ala Ala Tyr Phe Gln Phe  
850 855 860

Phe Ser Asp Val Arg Glu Ala Glu Gly Gln Leu Gln Lys Leu Gln Glu  
865 870 875 880

Ala Leu Arg Arg Lys Tyr Ser Cys Asp Arg Ser Ala Thr Val Thr Arg  
885 890 895

Leu Glu Asp Leu Leu Gln Asp Ala Gln Asp Glu Lys Glu Gln Leu Asn  
900 905 910

Glu Tyr Lys Gly His Leu Ser Gly Leu Ala Lys Arg Ala Lys Ala Val  
915 920 925

Val Gln Leu Lys Pro Arg His Pro Ala His Pro Met Arg Gly Arg Leu  
930 935 940

Pro Leu Leu Ala Val Cys Asp Tyr Lys Gln Val Glu Val Thr Val His  
945 950 955 960

Lys Gly Asp Glu Cys Gln Leu Val Gly Pro Ala Gln Pro Ser His Trp  
965 970 975

Lys Val Leu Ser Ser Ser Gly Ser Glu Ala Ala Val Pro Ser Val Cys  
980 985 990

Phe Leu Val Pro Pro Pro Asn Gln Glu Ala Gln Glu Ala Val Thr Arg  
995 1000 1005

Leu Glu Ala Gln His Gln Ala Leu Val Thr Leu Trp His Gln Leu

1010						1015						1020	
His	Val	Asp	Met	Lys	Ser	Leu	Leu	Ala	Trp	Gln	Ser	Leu	Arg Arg
	1025					1030					1035		
Asp	Val	Gln	Leu	Ile	Arg	Ser	Trp	Ser	Leu	Ala	Thr	Phe	Arg Thr
	1040					1045					1050		
Leu	Lys	Pro	Glu	Glu	Gln	Arg	Gln	Ala	Leu	His	Ser	Leu	Glu Leu
	1055					1060					1065		
His	Tyr	Gln	Ala	Phe	Leu	Arg	Asp	Ser	Gln	Asp	Ala	Gly	Gly Phe
	1070					1075					1080		
Gly	Pro	Glu	Asp	Arg	Leu	Met	Ala	Glu	Arg	Glu	Tyr	Gly	Ser Cys
	1085					1090					1095		
Ser	His	His	Tyr	Gln	Gln	Leu	Leu	Gln	Ser	Leu	Glu	Gln	Gly Ala
	1100					1105					1110		
Gln	Glu	Glu	Ser	Arg	Cys	Gln	Arg	Cys	Ile	Ser	Glu	Leu	Lys Asp
	1115					1120					1125		
Ile	Arg	Leu	Gln	Leu	Glu	Ala	Cys	Glu	Thr	Arg	Thr	Val	His Arg
	1130					1135					1140		
Leu	Arg	Leu	Pro	Leu	Asp	Lys	Glu	Pro	Ala	Arg	Glu	Cys	Ala Gln
	1145					1150					1155		
Arg	Ile	Ala	Glu	Gln	Gln	Lys	Ala	Gln	Ala	Glu	Val	Glu	Gly Leu
	1160					1165					1170		
Gly	Lys	Gly	Val	Ala	Arg	Leu	Ser	Ala	Glu	Ala	Glu	Lys	Val Leu
	1175					1180					1185		
Ala	Leu	Pro	Glu	Pro	Ser	Pro	Ala	Ala	Pro	Thr	Leu	Arg	Ser Glu
	1190					1195					1200		
Leu	Glu	Leu	Thr	Leu	Gly	Lys	Leu	Glu	Gln	Val	Arg	Ser	Leu Ser
	1205					1210					1215		
Ala	Ile	Tyr	Leu	Glu	Lys	Leu	Lys	Thr	Ile	Ser	Leu	Val	Ile Arg
	1220					1225					1230		
Gly	Thr	Gln	Gly	Ala	Glu	Glu	Val	Leu	Arg	Ala	His	Glu	Glu Gln
	1235					1240					1245		
Leu	Lys	Glu	Ala	Gln	Ala	Val	Pro	Ala	Thr	Leu	Pro	Glu	Leu Glu
	1250					1255					1260		
Ala	Thr	Lys	Ala	Ser	Leu	Lys	Lys	Leu	Arg	Ala	Gln	Ala	Glu Ala
	1265					1270					1275		

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Gln	Gln	Pro	Thr	Phe	Asp	Ala	Leu	Arg	Asp	Glu	Leu	Arg	Gly	Ala
	1280					1285					1290			
Gln	Glu	Val	Gly	Glu	Arg	Leu	Gln	Gln	Arg	His	Gly	Glu	Arg	Asp
	1295					1300					1305			
Val	Glu	Val	Glu	Arg	Trp	Arg	Glu	Arg	Val	Ala	Gln	Leu	Leu	Glu
	1310					1315					1320			
Arg	Trp	Gln	Ala	Val	Leu	Ala	Gln	Thr	Asp	Val	Arg	Gln	Arg	Glu
	1325					1330					1335			
Leu	Glu	Gln	Leu	Gly	Arg	Gln	Leu	Arg	Tyr	Tyr	Arg	Glu	Ser	Ala
	1340					1345					1350			
Asp	Pro	Leu	Gly	Ala	Trp	Leu	Gln	Asp	Ala	Arg	Arg	Arg	Gln	Glu
	1355					1360					1365			
Gln	Ile	Gln	Ala	Met	Pro	Leu	Ala	Asp	Ser	Gln	Ala	Val	Arg	Glu
	1370					1375					1380			
Gln	Leu	Arg	Gln	Glu	Gln	Ala	Leu	Leu	Glu	Glu	Ile	Glu	Arg	His
	1385					1390					1395			
Gly	Glu	Lys	Val	Glu	Glu	Cys	Gln	Arg	Phe	Ala	Lys	Gln	Tyr	Ile
	1400					1405					1410			
Asn	Ala	Ile	Lys	Asp	Tyr	Glu	Leu	Gln	Leu	Val	Thr	Tyr	Lys	Ala
	1415					1420					1425			
Gln	Leu	Glu	Pro	Val	Ala	Ser	Pro	Ala	Lys	Lys	Pro	Lys	Val	Gln
	1430					1435					1440			
Ser	Gly	Ser	Glu	Ser	Val	Ile	Gln	Glu	Tyr	Val	Asp	Leu	Arg	Thr
	1445					1450					1455			
His	Tyr	Ser	Glu	Leu	Thr	Thr	Leu	Thr	Ser	Gln	Tyr	Ile	Lys	Phe
	1460					1465					1470			
Ile	Ser	Glu	Thr	Leu	Arg	Arg	Met	Glu	Glu	Glu	Glu	Arg	Leu	Ala
	1475					1480					1485			
Glu	Gln	Gln	Arg	Ala	Glu	Glu	Arg	Glu	Arg	Leu	Ala	Glu	Val	Glu
	1490					1495					1500			
Ala	Ala	Leu	Glu	Lys	Gln	Arg	Gln	Leu	Ala	Glu	Ala	His	Ala	Gln
	1505					1510					1515			
Ala	Lys	Ala	Gln	Ala	Glu	Arg	Glu	Ala	Lys	Glu	Leu	Gln	Gln	Arg
	1520					1525					1530			

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Met	Gln	Glu	Glu	Val	Val	Arg	Arg	Glu	Glu	Ala	Ala	Val	Asp	Ala
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Gln	Gln	Gln	Lys	Arg	Ser	Ile	Gln	Glu	Glu	Leu	Gln	Gln	Leu	Arg
	1550					1555					1560			
Gln	Ser	Ser	Glu	Ala	Glu	Ile	Gln	Ala	Lys	Ala	Arg	Gln	Ala	Glu
	1565					1570					1575			
Ala	Ala	Glu	Arg	Ser	Arg	Leu	Arg	Ile	Glu	Glu	Glu	Ile	Arg	Val
	1580					1585					1590			
Val	Arg	Leu	Gln	Leu	Glu	Ala	Thr	Glu	Arg	Gln	Arg	Gly	Gly	Ala
	1595					1600					1605			
Glu	Gly	Glu	Leu	Gln	Ala	Leu	Arg	Ala	Arg	Ala	Glu	Glu	Ala	Glu
	1610					1615					1620			
Ala	Gln	Lys	Arg	Gln	Ala	Gln	Glu	Glu	Ala	Glu	Arg	Leu	Arg	Arg
	1625					1630					1635			
Gln	Val	Gln	Asp	Glu	Ser	Gln	Arg	Lys	Arg	Gln	Ala	Glu	Val	Glu
	1640					1645					1650			
Leu	Ala	Ser	Arg	Val	Lys	Ala	Glu	Ala	Glu	Ala	Ala	Arg	Glu	Lys
	1655					1660					1665			
Gln	Arg	Ala	Leu	Gln	Ala	Leu	Glu	Glu	Leu	Arg	Leu	Gln	Ala	Glu
	1670					1675					1680			
Glu	Ala	Glu	Arg	Arg	Leu	Arg	Gln	Ala	Glu	Val	Glu	Arg	Ala	Arg
	1685					1690					1695			
Gln	Val	Gln	Val	Ala	Leu	Glu	Thr	Ala	Gln	Arg	Ser	Ala	Glu	Ala
	1700					1705					1710			
Glu	Leu	Gln	Ser	Lys	Arg	Ala	Ser	Phe	Ala	Glu	Lys	Thr	Ala	Gln
	1715					1720					1725			
Leu	Glu	Arg	Ser	Leu	Gln	Glu	Glu	His	Val	Ala	Val	Ala	Gln	Leu
	1730					1735					1740			
Arg	Glu	Glu	Ala	Glu	Arg	Arg	Ala	Gln	Gln	Gln	Ala	Glu	Ala	Glu
	1745					1750					1755			
Arg	Ala	Arg	Glu	Glu	Ala	Glu	Arg	Glu	Leu	Glu	Arg	Trp	Gln	Leu
	1760					1765					1770			
Lys	Ala	Asn	Glu	Ala	Leu	Arg	Leu	Arg	Leu	Gln	Ala	Glu	Glu	Val
	1775					1780					1785			



Ala	Gln	Gln	Lys	Ser	Leu	Ala	Gln	Ala	Glu	Ala	Glu	Lys	Gln	Lys
1790						1795						1800		
Glu	Glu	Ala	Glu	Arg	Glu	Ala	Arg	Arg	Arg	Gly	Lys	Ala	Glu	Glu
1805						1810					1815			
Gln	Ala	Val	Arg	Gln	Arg	Glu	Leu	Ala	Glu	Gln	Glu	Leu	Glu	Lys
1820						1825					1830			
Gln	Arg	Gln	Leu	Ala	Glu	Gly	Thr	Ala	Gln	Gln	Arg	Leu	Ala	Ala
1835						1840					1845			
Glu	Gln	Glu	Leu	Ile	Arg	Leu	Arg	Ala	Glu	Thr	Glu	Gln	Gly	Glu
1850						1855					1860			
Gln	Gln	Arg	Gln	Leu	Leu	Glu	Glu	Glu	Leu	Ala	Arg	Leu	Gln	Arg
1865						1870					1875			
Glu	Ala	Ala	Ala	Ala	Thr	Gln	Lys	Arg	Gln	Glu	Leu	Glu	Ala	Glu
1880						1885					1890			
Leu	Ala	Lys	Val	Arg	Ala	Glu	Met	Glu	Val	Leu	Leu	Ala	Ser	Lys
1895						1900					1905			
Ala	Arg	Ala	Glu	Glu	Glu	Ser	Arg	Ser	Thr	Ser	Glu	Lys	Ser	Lys
1910						1915					1920			
Gln	Arg	Leu	Glu	Ala	Glu	Ala	Gly	Arg	Phe	Arg	Glu	Leu	Ala	Glu
1925						1930					1935			
Glu	Ala	Ala	Arg	Leu	Arg	Ala	Leu	Ala	Glu	Glu	Ala	Lys	Arg	Gln
1940						1945					1950			
Arg	Gln	Leu	Ala	Glu	Glu	Asp	Ala	Ala	Arg	Gln	Arg	Ala	Glu	Ala
1955						1960					1965			
Glu	Arg	Val	Leu	Ala	Glu	Lys	Leu	Ala	Ala	Ile	Gly	Glu	Ala	Thr
1970						1975					1980			
Arg	Leu	Lys	Thr	Glu	Ala	Glu	Ile	Ala	Leu	Lys	Glu	Lys	Glu	Ala
1985						1990					1995			
Glu	Asn	Glu	Arg	Leu	Arg	Arg	Leu	Ala	Glu	Asp	Glu	Ala	Phe	Gln
2000						2005					2010			
Arg	Arg	Arg	Leu	Glu	Glu	Gln	Ala	Ala	Gln	His	Lys	Ala	Asp	Ile
2015						2020					2025			
Glu	Glu	Arg	Leu	Ala	Gln	Leu	Arg	Lys	Ala	Ser	Asp	Ser	Glu	Leu
2030						2035					2040			
Glu	Arg	Gln	Lys	Gly	Leu	Val	Glu	Asp	Thr	Leu	Arg	Gln	Arg	Arg

2045

2050

2055

Gln Val Glu Glu Glu Ile Leu Ala Leu Lys Ala Ser Phe Glu Lys  
2060 2065 2070

Ala Ala Ala Gly Lys Ala Glu Leu Glu Leu Glu Leu Gly Arg Ile  
2075 2080 2085

Arg Ser Asn Ala Glu Asp Thr Leu Arg Ser Lys Glu Gln Ala Glu  
2090 2095 2100

Leu Glu Ala Ala Arg Gln Arg Gln Leu Ala Ala Glu Glu Glu Arg  
2105 2110 2115

Arg Arg Arg Glu Ala Glu Glu Arg Val Gln Lys Ser Leu Ala Ala  
2120 2125 2130

Glu Glu Glu Ala Ala Arg Gln Arg Lys Ala Ala Leu Glu Glu Val  
2135 2140 2145

Glu Arg Leu Lys Ala Lys Val Glu Glu Ala Arg Arg Leu Arg Glu  
2150 2155 2160

Arg Ala Glu Gln Glu Ser Ala Arg Gln Leu Gln Leu Ala Gln Glu  
2165 2170 2175

Ala Ala Gln Lys Arg Leu Gln Ala Glu Glu Lys Ala His Ala Phe  
2180 2185 2190

Ala Val Gln Gln Lys Glu Gln Glu Leu Gln Gln Thr Leu Gln Gln  
2195 2200 2205

Glu Gln Ser Val Leu Asp Gln Leu Arg Gly Glu Ala Glu Ala Ala  
2210 2215 2220

Arg Arg Ala Ala Glu Glu Ala Glu Glu Ala Arg Val Gln Ala Glu  
2225 2230 2235

Arg Glu Ala Ala Gln Ser Arg Arg Gln Val Glu Glu Ala Glu Arg  
2240 2245 2250

Leu Lys Gln Ser Ala Glu Glu Gln Ala Gln Ala Arg Ala Gln Ala  
2255 2260 2265

Gln Ala Ala Ala Glu Lys Leu Arg Lys Glu Ala Glu Gln Glu Ala  
2270 2275 2280

Ala Arg Arg Ala Gln Ala Glu Gln Ala Ala Leu Arg Gln Lys Gln  
2285 2290 2295

Ala Ala Asp Ala Glu Met Glu Lys His Lys Lys Phe Ala Glu Gln  
2300 2305 2310

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Thr	Leu	Arg	Gln	Lys	Ala	Gln	Val	Glu	Gln	Glu	Leu	Thr	Thr	Leu
	2315					2320					2325			
Arg	Leu	Gln	Leu	Glu	Glu	Thr	Asp	His	Gln	Lys	Asn	Leu	Leu	Asp
	2330					2335					2340			
Glu	Glu	Leu	Gln	Arg	Leu	Lys	Ala	Glu	Ala	Thr	Glu	Ala	Ala	Arg
	2345					2350					2355			
Gln	Arg	Ser	Gln	Val	Glu	Glu	Glu	Leu	Phe	Ser	Val	Arg	Val	Gln
	2360					2365					2370			
Met	Glu	Glu	Leu	Ser	Lys	Leu	Lys	Ala	Arg	Ile	Glu	Ala	Glu	Asn
	2375					2380					2385			
Arg	Ala	Leu	Ile	Leu	Arg	Asp	Lys	Asp	Asn	Thr	Gln	Arg	Phe	Leu
	2390					2395					2400			
Gln	Glu	Glu	Ala	Glu	Lys	Met	Lys	Gln	Val	Ala	Glu	Glu	Ala	Ala
	2405					2410					2415			
Arg	Leu	Ser	Val	Ala	Ala	Gln	Glu	Ala	Ala	Arg	Leu	Arg	Gln	Leu
	2420					2425					2430			
Ala	Glu	Glu	Asp	Leu	Ala	Gln	Gln	Arg	Ala	Leu	Ala	Glu	Lys	Met
	2435					2440					2445			
Leu	Lys	Glu	Lys	Met	Gln	Ala	Val	Gln	Glu	Ala	Thr	Arg	Leu	Lys
	2450					2455					2460			
Ala	Glu	Ala	Glu	Leu	Leu	Gln	Gln	Gln	Lys	Glu	Leu	Ala	Gln	Glu
	2465					2470					2475			
Gln	Ala	Arg	Arg	Leu	Gln	Glu	Asp	Lys	Glu	Gln	Met	Ala	Gln	Gln
	2480					2485					2490			
Leu	Ala	Glu	Glu	Thr	Gln	Gly	Phe	Gln	Arg	Thr	Leu	Glu	Ala	Glu
	2495					2500					2505			
Arg	Gln	Arg	Gln	Leu	Glu	Met	Ser	Ala	Glu	Ala	Glu	Arg	Leu	Lys
	2510					2515					2520			
Leu	Arg	Val	Ala	Glu	Met	Ser	Arg	Ala	Gln	Ala	Arg	Ala	Glu	Glu
	2525					2530					2535			
Asp	Ala	Gln	Arg	Phe	Arg	Lys	Gln	Ala	Glu	Glu	Ile	Gly	Glu	Lys
	2540					2545					2550			
Leu	His	Arg	Thr	Glu	Leu	Ala	Thr	Gln	Glu	Lys	Val	Thr	Leu	Val
	2555					2560					2565			

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Gln	Thr	Leu	Glu	Ile	Gln	Arg	Gln	Gln	Ser	Asp	His	Asp	Ala	Glu
	2570					2575					2580			
Arg	Leu	Arg	Glu	Ala	Ile	Ala	Glu	Leu	Glu	Arg	Glu	Lys	Glu	Lys
	2585					2590					2595			
Leu	Gln	Gln	Glu	Ala	Lys	Leu	Leu	Gln	Leu	Lys	Ser	Glu	Glu	Met
	2600					2605					2610			
Gln	Thr	Val	Gln	Gln	Glu	Gln	Leu	Leu	Gln	Glu	Thr	Gln	Ala	Leu
	2615					2620					2625			
Gln	Gln	Ser	Phe	Leu	Ser	Glu	Lys	Asp	Ser	Leu	Leu	Gln	Arg	Glu
	2630					2635					2640			
Arg	Phe	Ile	Glu	Gln	Glu	Lys	Ala	Lys	Leu	Glu	Gln	Leu	Phe	Gln
	2645					2650					2655			
Asp	Glu	Val	Ala	Lys	Ala	Gln	Gln	Leu	Arg	Glu	Glu	Gln	Gln	Arg
	2660					2665					2670			
Gln	Gln	Gln	Gln	Met	Glu	Gln	Glu	Arg	Gln	Arg	Leu	Val	Ala	Ser
	2675					2680					2685			
Met	Glu	Glu	Ala	Arg	Arg	Arg	Gln	His	Glu	Ala	Glu	Glu	Gly	Val
	2690					2695					2700			
Arg	Arg	Lys	Gln	Glu	Glu	Leu	Gln	Gln	Leu	Glu	Gln	Gln	Arg	Arg
	2705					2710					2715			
Gln	Gln	Glu	Glu	Leu	Leu	Ala	Glu	Glu	Asn	Gln	Arg	Leu	Arg	Glu
	2720					2725					2730			
Gln	Leu	Gln	Leu	Leu	Glu	Glu	Gln	His	Arg	Ala	Ala	Leu	Ala	His
	2735					2740					2745			
Ser	Glu	Glu	Val	Thr	Ala	Ser	Gln	Val	Ala	Ala	Thr	Lys	Thr	Leu
	2750					2755					2760			
Pro	Asn	Gly	Arg	Asp	Ala	Leu	Asp	Gly	Pro	Ala	Ala	Glu	Ala	Glu
	2765					2770					2775			
Pro	Glu	His	Ser	Phe	Asp	Gly	Leu	Arg	Arg	Lys	Val	Ser	Ala	Gln
	2780					2785					2790			
Arg	Leu	Gln	Glu	Ala	Gly	Ile	Leu	Ser	Ala	Glu	Glu	Leu	Gln	Arg
	2795					2800					2805			
Leu	Ala	Gln	Gly	His	Thr	Thr	Val	Asp	Glu	Leu	Ala	Arg	Arg	Glu
	2810					2815					2820			

Asp Val Arg His Tyr Leu Gln Gly Arg Ser Ser Ile Ala Gly Leu  
 2825 2830 2835  
  
 Leu Leu Lys Ala Thr Asn Glu Lys Leu Ser Val Tyr Ala Ala Leu  
 2840 2845 2850  
  
 Gln Arg Gln Leu Leu Ser Pro Gly Thr Ala Leu Ile Leu Leu Glu  
 2855 2860 2865  
  
 Ala Gln Ala Ala Ser Gly Phe Leu Leu Asp Pro Val Arg Asn Arg  
 2870 2875 2880  
  
 Arg Leu Thr Val Asn Glu Ala Val Lys Glu Gly Val Val Gly Pro  
 2885 2890 2895  
  
 Glu Leu His His Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly  
 2900 2905 2910  
  
 Tyr Lys Asp Pro Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln Ala  
 2915 2920 2925  
  
 Met Gln Lys Gly Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu  
 2930 2935 2940  
  
 Glu Ala Gln Ile Ala Thr Gly Gly Val Ile Asp Pro Val His Ser  
 2945 2950 2955  
  
 His Arg Val Pro Val Asp Val Ala Tyr Arg Arg Gly Tyr Phe Asp  
 2960 2965 2970  
  
 Glu Glu Met Asn Arg Val Leu Ala Asp Pro Ser Asp Asp Thr Lys  
 2975 2980 2985  
  
 Gly Phe Phe Asp Pro Asn Thr His Glu Asn Leu Thr Tyr Leu Gln  
 2990 2995 3000  
  
 Leu Leu Glu Arg Cys Val Glu Asp Pro Glu Thr Gly Leu Cys Leu  
 3005 3010 3015  
  
 Leu Pro Leu Thr Asp Lys Ala Ala Lys Gly Gly Glu Leu Val Tyr  
 3020 3025 3030  
  
 Thr Asp Ser Glu Ala Arg Asp Val Phe Glu Lys Ala Thr Val Ser  
 3035 3040 3045  
  
 Ala Pro Phe Gly Lys Phe Gln Gly Lys Thr Val Thr Ile Trp Glu  
 3050 3055 3060  
  
 Ile Ile Asn Ser Glu Tyr Phe Thr Ala Glu Gln Arg Arg Asp Leu  
 3065 3070 3075  
  
 Leu Arg Gln Phe Arg Thr Gly Arg Ile Thr Val Glu Lys Ile Ile

3080

3085

3090

Lys Ile Ile Ile Thr Val Val Glu Glu Gln Glu Gln Lys Gly Arg  
3095 3100 3105

Leu Cys Phe Glu Gly Leu Arg Ser Leu Val Pro Ala Ala Glu Leu  
3110 3115 3120

Leu Glu Ser Arg Val Ile Asp Arg Glu Leu Tyr Gln Gln Leu Gln  
3125 3130 3135

Arg Gly Glu Arg Ser Val Arg Asp Val Ala Glu Val Asp Thr Val  
3140 3145 3150

Arg Arg Ala Leu Arg Gly Ala Asn Val Ile Ala Gly Val Trp Leu  
3155 3160 3165

Glu Glu Ala Gly Gln Lys Leu Ser Ile Tyr Asn Ala Leu Lys Lys  
3170 3175 3180

Asp Leu Leu Pro Ser Asp Met Ala Val Ala Leu Leu Glu Ala Gln  
3185 3190 3195

Ala Gly Thr Gly His Ile Ile Asp Pro Ala Thr Ser Ala Arg Leu  
3200 3205 3210

Thr Val Asp Glu Ala Val Arg Ala Gly Leu Val Gly Pro Glu Phe  
3215 3220 3225

His Glu Lys Leu Leu Ser Ala Glu Lys Ala Val Thr Gly Tyr Arg  
3230 3235 3240

Asp Pro Tyr Thr Gly Gln Ser Val Ser Leu Phe Gln Ala Leu Lys  
3245 3250 3255

Lys Gly Leu Ile Pro Arg Glu Gln Gly Leu Arg Leu Leu Asp Ala  
3260 3265 3270

Gln Leu Ser Thr Gly Gly Ile Val Asp Pro Ser Lys Ser His Arg  
3275 3280 3285

Val Pro Leu Asp Val Ala Cys Ala Arg Gly Cys Leu Asp Glu Glu  
3290 3295 3300

Thr Ser Arg Ala Leu Ser Ala Pro Arg Ala Asp Ala Lys Ala Tyr  
3305 3310 3315

Ser Asp Pro Ser Thr Gly Glu Pro Ala Thr Tyr Gly Glu Leu Gln  
3320 3325 3330

Gln Arg Cys Arg Pro Asp Gln Leu Thr Gly Leu Ser Leu Leu Pro  
3335 3340 3345

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Leu Ser Glu Lys Ala Ala Arg Ala Arg Gln Glu Glu Leu Tyr Ser  
 3350 3355 3360  
 Glu Leu Gln Ala Arg Glu Thr Phe Glu Lys Thr Pro Val Glu Val  
 3365 3370 3375  
 Pro Val Gly Gly Phe Lys Gly Arg Thr Val Thr Val Trp Glu Leu  
 3380 3385 3390  
 Ile Ser Ser Glu Tyr Phe Thr Ala Glu Gln Arg Gln Glu Leu Leu  
 3395 3400 3405  
 Arg Gln Phe Arg Thr Gly Lys Val Thr Val Glu Lys Val Ile Lys  
 3410 3415 3420  
 Ile Leu Ile Thr Ile Val Glu Glu Val Glu Thr Leu Arg Gln Glu  
 3425 3430 3435  
 Arg Leu Ser Phe Ser Gly Leu Arg Ala Pro Val Pro Ala Ser Glu  
 3440 3445 3450  
 Leu Leu Ala Ser Gly Val Leu Ser Arg Ala Gln Phe Glu Gln Leu  
 3455 3460 3465  
 Lys Asp Gly Lys Thr Thr Val Lys Asp Leu Ser Glu Leu Gly Ser  
 3470 3475 3480  
 Val Arg Thr Leu Leu Gln Gly Ser Gly Cys Leu Ala Gly Ile Tyr  
 3485 3490 3495  
 Leu Glu Asp Thr Lys Glu Lys Val Ser Ile Tyr Glu Ala Met Arg  
 3500 3505 3510  
 Arg Gly Leu Leu Arg Ala Thr Thr Ala Ala Leu Leu Leu Glu Ala  
 3515 3520 3525  
 Gln Ala Ala Thr Gly Phe Leu Val Asp Pro Val Arg Asn Gln Arg  
 3530 3535 3540  
 Leu Tyr Val His Glu Ala Val Lys Ala Gly Val Val Gly Pro Glu  
 3545 3550 3555  
 Leu His Glu Gln Leu Leu Ser Ala Glu Lys Ala Val Thr Gly Tyr  
 3560 3565 3570  
 Arg Asp Pro Tyr Ser Gly Ser Thr Ile Ser Leu Phe Gln Ala Met  
 3575 3580 3585  
 Gln Lys Gly Leu Val Leu Arg Gln His Gly Ile Arg Leu Leu Glu  
 3590 3595 3600

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Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Val	His	Ser	His
	3605					3610					3615			
Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Ser	Glu
	3620					3625					3630			
Glu	Met	Asn	Arg	Val	Leu	Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly
	3635					3640					3645			
Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Arg	Gln	Leu
	3650					3655					3660			
Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro	Glu	Thr	Gly	Leu	Arg	Leu	Leu
	3665					3670					3675			
Pro	Leu	Lys	Gly	Ala	Glu	Lys	Ala	Glu	Val	Val	Glu	Thr	Thr	Gln
	3680					3685					3690			
Val	Tyr	Thr	Glu	Glu	Glu	Thr	Arg	Arg	Ala	Phe	Glu	Glu	Thr	Gln
	3695					3700					3705			
Ile	Asp	Ile	Pro	Gly	Gly	Gly	Ser	His	Gly	Gly	Ser	Thr	Met	Ser
	3710					3715					3720			
Leu	Trp	Glu	Val	Met	Gln	Ser	Asp	Leu	Ile	Pro	Glu	Glu	Gln	Arg
	3725					3730					3735			
Ala	Gln	Leu	Met	Ala	Asp	Phe	Gln	Ala	Gly	Arg	Val	Thr	Lys	Glu
	3740					3745					3750			
Arg	Met	Ile	Ile	Ile	Ile	Ile	Glu	Ile	Ile	Glu	Lys	Thr	Glu	Ile
	3755					3760					3765			
Ile	Arg	Gln	Gln	Gly	Leu	Ala	Ser	Tyr	Asp	Tyr	Val	Arg	Arg	Arg
	3770					3775					3780			
Leu	Thr	Ala	Glu	Asp	Leu	Phe	Glu	Ala	Arg	Ile	Ile	Ser	Leu	Glu
	3785					3790					3795			
Thr	Tyr	Asn	Leu	Leu	Arg	Glu	Gly	Thr	Arg	Ser	Leu	Arg	Glu	Ala
	3800					3805					3810			
Leu	Glu	Ala	Glu	Ser	Ala	Trp	Cys	Tyr	Leu	Tyr	Gly	Thr	Gly	Ser
	3815					3820					3825			
Val	Ala	Gly	Val	Tyr	Leu	Pro	Gly	Ser	Arg	Gln	Thr	Leu	Ser	Ile
	3830					3835					3840			
Tyr	Gln	Ala	Leu	Lys	Lys	Gly	Leu	Leu	Ser	Ala	Glu	Val	Ala	Arg
	3845					3850					3855			



Leu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Leu Leu Asp Pro  
 3860 3865 3870  
 Val Lys Gly Glu Arg Leu Thr Val Asp Glu Ala Val Arg Lys Gly  
 3875 3880 3885  
 Leu Val Gly Pro Glu Leu His Asp Arg Leu Leu Ser Ala Glu Arg  
 3890 3895 3900  
 Ala Val Thr Gly Tyr Arg Asp Pro Tyr Thr Glu Gln Thr Ile Ser  
 3905 3910 3915  
 Leu Phe Gln Ala Met Lys Lys Glu Leu Ile Pro Thr Glu Glu Ala  
 3920 3925 3930  
 Leu Arg Leu Leu Asp Ala Gln Leu Ala Thr Gly Gly Ile Val Asp  
 3935 3940 3945  
 Pro Arg Leu Gly Phe His Leu Pro Leu Glu Val Ala Tyr Gln Arg  
 3950 3955 3960  
 Gly Tyr Leu Asn Lys Asp Thr His Asp Gln Leu Ser Glu Pro Ser  
 3965 3970 3975  
 Glu Val Arg Ser Tyr Val Asp Pro Ser Thr Asp Glu Arg Leu Ser  
 3980 3985 3990  
 Tyr Thr Gln Leu Leu Arg Arg Cys Arg Arg Asp Asp Gly Thr Gly  
 3995 4000 4005  
 Gln Leu Leu Leu Pro Leu Ser Asp Ala Arg Lys Leu Thr Phe Arg  
 4010 4015 4020  
 Gly Leu Arg Lys Gln Ile Thr Met Glu Glu Leu Val Arg Ser Gln  
 4025 4030 4035  
 Val Met Asp Glu Ala Thr Ala Leu Gln Leu Arg Glu Gly Leu Thr  
 4040 4045 4050  
 Ser Ile Glu Glu Val Thr Lys Asn Leu Gln Lys Phe Leu Glu Gly  
 4055 4060 4065  
 Thr Ser Cys Ile Ala Gly Val Phe Val Asp Ala Thr Lys Glu Arg  
 4070 4075 4080  
 Leu Ser Val Tyr Gln Ala Met Lys Lys Gly Ile Ile Arg Pro Gly  
 4085 4090 4095  
 Thr Ala Phe Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Tyr Val  
 4100 4105 4110  
 Ile Asp Pro Ile Lys Gly Leu Lys Leu Thr Val Glu Glu Ala Val

4115                      4120                      4125  
 Arg Met Gly Ile Val Gly Pro Glu Phe Lys Asp Lys Leu Leu Ser  
 4130                      4135                      4140  
 Ala Glu Arg Ala Val Thr Gly Tyr Lys Asp Pro Tyr Ser Gly Lys  
 4145                      4150                      4155  
 Leu Ile Ser Leu Phe Gln Ala Met Lys Lys Gly Leu Ile Leu Lys  
 4160                      4165                      4170  
 Asp His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly  
 4175                      4180                      4185  
 Ile Ile Asp Pro Glu Glu Ser His Arg Leu Pro Val Glu Val Ala  
 4190                      4195                      4200  
 Tyr Lys Arg Gly Leu Phe Asp Glu Glu Met Asn Glu Ile Leu Thr  
 4205                      4210                      4215  
 Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr Glu  
 4220                      4225                      4230  
 Glu Asn Leu Thr Tyr Leu Gln Leu Met Glu Arg Cys Ile Thr Asp  
 4235                      4240                      4245  
 Pro Gln Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu Lys Lys Arg  
 4250                      4255                      4260  
 Glu Arg Lys Thr Ser Ser Lys Ser Ser Val Arg Lys Arg Arg Val  
 4265                      4270                      4275  
 Val Ile Val Asp Pro Glu Thr Gly Lys Glu Met Ser Val Tyr Glu  
 4280                      4285                      4290  
 Ala Tyr Arg Lys Gly Leu Ile Asp His Gln Thr Tyr Leu Glu Leu  
 4295                      4300                      4305  
 Ser Glu Gln Glu Cys Glu Trp Glu Glu Ile Thr Ile Ser Ser Ser  
 4310                      4315                      4320  
 Asp Gly Val Val Lys Ser Met Ile Ile Asp Arg Arg Ser Gly Arg  
 4325                      4330                      4335  
 Gln Tyr Asp Ile Asp Asp Ala Ile Ala Lys Asn Leu Ile Asp Arg  
 4340                      4345                      4350  
 Ser Ala Leu Asp Gln Tyr Arg Ala Gly Thr Leu Ser Ile Thr Glu  
 4355                      4360                      4365  
 Phe Ala Asp Met Leu Ser Gly Asn Ala Gly Gly Phe Arg Ser Arg  
 4370                      4375                      4380

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Ser	Ser	Ser	Val	Gly	Ser	Ser	Ser	Ser	Tyr	Pro	Ile	Ser	Pro	Ala
	4385					4390					4395			
Val	Ser	Arg	Thr	Gln	Leu	Ala	Ser	Trp	Ser	Asp	Pro	Thr	Glu	Glu
	4400					4405					4410			
Thr	Gly	Pro	Val	Ala	Gly	Ile	Leu	Asp	Thr	Glu	Thr	Leu	Glu	Lys
	4415					4420					4425			
Val	Ser	Ile	Thr	Glu	Ala	Met	His	Arg	Asn	Leu	Val	Asp	Asn	Ile
	4430					4435					4440			
Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr	Gly	Gly	Ile
	4445					4450					4455			
Ile	Asp	Pro	Ser	Thr	Gly	Glu	Arg	Phe	Pro	Val	Thr	Asp	Ala	Val
	4460					4465					4470			
Asn	Lys	Gly	Leu	Val	Asp	Lys	Ile	Met	Val	Asp	Arg	Ile	Asn	Leu
	4475					4480					4485			
Ala	Gln	Lys	Ala	Phe	Cys	Gly	Phe	Glu	Asp	Pro	Arg	Thr	Lys	Thr
	4490					4495					4500			
Lys	Met	Ser	Ala	Ala	Gln	Ala	Leu	Lys	Lys	Gly	Trp	Leu	Tyr	Tyr
	4505					4510					4515			
Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Val	Gln	Tyr	Leu	Thr	Gly	Gly
	4520					4525					4530			
Leu	Ile	Glu	Pro	Asp	Thr	Pro	Gly	Arg	Val	Pro	Leu	Asp	Glu	Ala
	4535					4540					4545			
Leu	Gln	Arg	Gly	Thr	Val	Asp	Ala	Arg	Thr	Ala	Gln	Lys	Leu	Arg
	4550					4555					4560			
Asp	Val	Gly	Ala	Tyr	Ser	Lys	Tyr	Leu	Thr	Cys	Pro	Lys	Thr	Lys
	4565					4570					4575			
Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Leu	Asp	Arg	Ser	Met	Val	Glu
	4580					4585					4590			
Glu	Gly	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala	Ala	Ala	Gln	Ser	Thr
	4595					4600					4605			
Lys	Gly	Tyr	Tyr	Ser	Pro	Tyr	Ser	Val	Ser	Gly	Ser	Gly	Ser	Thr
	4610					4615					4620			
Ala	Gly	Ser	Arg	Thr	Gly	Ser	Arg	Thr	Gly	Ser	Arg	Ala	Gly	Ser
	4625					4630					4635			

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Arg Arg Gly Ser Phe Asp Ala Thr Gly Ser Gly Phe Ser Met Thr  
4640 4645 4650

Phe Ser Ser Ser Ser Tyr Ser Ser Ser Gly Tyr Gly Arg Arg Tyr  
4655 4660 4665

Ala Ser Gly Ser Ser Ala Ser Leu Gly Gly Pro Glu Ser Ala Val  
4670 4675 4680

A7a

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<213>	Mus musculus

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Met Ser Gln His Arg Leu Arg Val Pro Glu Pro Glu Gly Leu Gly Ser  
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aag aga acc agc tca gag gac aac ctc tac ctg gct gtg ctc aga gcc 96  
Lys Arg Thr Ser Ser Glu Asp Asn Leu Tyr Leu Ala Val Leu Arg Ala  
20 25 30

tcc gag ggc aag aaa gat gaa cga gac cgt gtg cag aag aaa act ttc 144  
Ser Glu Gly Lys Lys Asp Glu Arg Asp Arg Val Gln Lys Lys Thr Phe  
35 40 45

acc aag tgg gtc aac aaa cac ctt atc aag gct cag agg cac atc agt 192  
Thr Lys Trp Val Asn Lys His Leu Ile Lys Ala Gln Arg His Ile Ser  
50 55 60

gac ctg tac gaa gac ctc cgt gat ggc cac aac ctc atc tcc ctg ctg 240  
Asp Leu Tyr Glu Asp Leu Arg Asp Gly His Asn Leu Ile Ser Leu Leu  
65 70 75 80

gaa gtc ctc tca gga gac agc ctg ccc cgc gag aaa ggg agg atg cgc 288  
Glu Val Leu Ser Gly Asp Ser Leu Pro Arg Glu Lys Gly Arg Met Arg  
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ttc cac aag ctg cag aat gtg cag att gcc ctg gac tat ctc cga cat 336  
Phe His Lys Leu Gln Asn Val Gln Ile Ala Leu Asp Tyr Leu Arg His  
100 105 110

cgc cag gtg aag tta gtg aac atc aga aat gat gac att gct gac ggc 384  
Arg Gln Val Lys Leu Val Asn Ile Arg Asn Asp Asp Ile Ala Asp Gly  
115 120 125

aac ccc aag ctg acc ctc ggc ctc atc tgg aca atc atc ctg cac ttc 432  
Asn Pro Lys Leu Thr Leu Gly Leu Ile Trp Thr Ile Ile Leu His Phe  
130 135 140

cag atc tca gac att cag gtg agc gga cag tcg gag gac atg aca gca 480  
Gln Ile Ser Asp Ile Gln Val Ser Gly Gln Ser Glu Asp Met Thr Ala  
145 150 155 160

aag gag aag ctg ctg ctg tgg tca cag cgt atg gta gag ggc tac caa 528  
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Lys	Glu	Lys	Leu	Leu	Leu	Trp	Ser	Gln	Arg	Met	Val	Glu	Gly	Tyr	Gln	
				165					170					175		
ggc	ctg	cgc	tgt	gac	aac	ttc	acc	acc	agt	tgg	cgc	gat	ggc	cgt	ctc	576
Gly	Leu	Arg	Cys	Asp	Asn	Phe	Thr	Thr	Ser	Trp	Arg	Asp	Gly	Arg	Leu	
			180					185					190			
ttc	aat	gct	atc	atc	cac	cgg	cac	aag	ccc	atg	ctc	ata	gat	atg	aat	624
Phe	Asn	Ala	Ile	Ile	His	Arg	His	Lys	Pro	Met	Leu	Ile	Asp	Met	Asn	
		195					200					205				
aaa	gtg	tat	cga	cag	acc	aac	ctg	gag	aac	cta	gac	cag	gca	ttc	tcg	672
Lys	Val	Tyr	Arg	Gln	Thr	Asn	Leu	Glu	Asn	Leu	Asp	Gln	Ala	Phe	Ser	
	210					215					220					
gtg	gca	gag	cgg	gac	ctg	gga	gtt	aca	cgg	ctc	ctg	gac	cca	gaa	gat	720
Val	Ala	Glu	Arg	Asp	Leu	Gly	Val	Thr	Arg	Leu	Leu	Asp	Pro	Glu	Asp	
	225				230					235					240	
gtg	gac	gtc	cct	cag	cct	gat	gaa	aag	tcc	atc	atc	acc	tat	gtt	tca	768
Val	Asp	Val	Pro	Gln	Pro	Asp	Glu	Lys	Ser	Ile	Ile	Thr	Tyr	Val	Ser	
				245					250					255		
tcc	ctg	tac	gat	gct	atg	ccc	cgc	gtg	cct	ggg	gca	cag	gac	gga	gtg	816
Ser	Leu	Tyr	Asp	Ala	Met	Pro	Arg	Val	Pro	Gly	Ala	Gln	Asp	Gly	Val	
			260					265					270			
agg	gcc	aat	gag	ctg	cag	ctt	cgt	tgg	cag	gag	tac	cgg	gag	ctt	gtg	864
Arg	Ala	Asn	Glu	Leu	Gln	Leu	Arg	Trp	Gln	Glu	Tyr	Arg	Glu	Leu	Val	
		275					280					285				
ttg	ctg	ctg	ctg	caa	tgg	atc	cgg	cac	cac	acc	gct	gct	ttt	gag	gag	912
Leu	Leu	Leu	Leu	Gln	Trp	Ile	Arg	His	His	Thr	Ala	Ala	Phe	Glu	Glu	
	290					295					300					
cgc	aag	ttc	ccc	tcc	agc	ttt	gaa	gag	att	gag	atc	cta	tgg	tgc	cag	960
Arg	Lys	Phe	Pro	Ser	Ser	Phe	Glu	Glu	Ile	Glu	Ile	Leu	Trp	Cys	Gln	
					310					315					320	
ttt	ttg	aag	ttc	aag	gag	aca	gaa	ctt	cct	gcc	aag	gag	gca	gac	aaa	1008
Phe	Leu	Lys	Phe	Lys	Glu	Thr	Glu	Leu	Pro	Ala	Lys	Glu	Ala	Asp	Lys	
				325					330					335		
aac	cgg	tcc	aaa	gtt	atc	tac	cag	tct	ttg	gag	ggg	gca	gta	caa	gcg	1056
Asn	Arg	Ser	Lys	Val	Ile	Tyr	Gln	Ser	Leu	Glu	Gly	Ala	Val	Gln	Ala	
			340					345					350			
ggc	cag	ctc	aag	att	ccc	cct	ggc	tac	cac	cca	cta	gat	gtg	gag	aag	1104
Gly	Gln	Leu	Lys	Ile	Pro	Pro	Gly	Tyr	His	Pro	Leu	Asp	Val	Glu	Lys	
		355					360					365				
gag	tgg	ggc	aag	ctg	cat	gtg	gcc	atc	ctg	gag	cgg	gag	aag	caa	ctg	1152
Glu	Trp	Gly	Lys	Leu	His	Val	Ala	Ile	Leu	Glu	Arg	Glu	Lys	Gln	Leu	
	370					375					380					
cga	agc	gag	ttt	gag	agg	ctg	gag	tgt	ctt	cag	cgc	att	gtg	agc	aag	1200
Arg	Ser	Glu	Phe	Glu	Arg	Leu	Glu	Cys	Leu	Gln	Arg	Ile	Val	Ser	Lys	
					390					395					400	
cta	cag	atg	gag	gct	ggg	ctg	tgt	gag	gag	cag	ctg	aac	cag	gcg	gac	1248
Leu	Gln	Met	Glu	Ala	Gly	Leu	Cys	Glu	Glu	Gln	Leu	Asn	Gln	Ala	Asp	
				405					410					415		
gcc	cta	ctg	cag	tcg	gat	att	cgg	ctg	ctg	gcc	tca	ggc	aag	gtg	gct	1296
Ala	Leu	Leu	Gln	Ser	Asp	Ile	Arg	Leu	Leu	Ala	Ser	Gly	Lys	Val	Ala	
			420					425					430			
cag	cga	gct	ggg	gaa	gtc	gag	aga	gac	ctg	gac	aag	gct	gat	ggg	atg	1344
Gln	Arg	Ala	Gly	Glu	Val	Glu	Arg	Asp	Leu	Asp	Lys	Ala	Asp	Gly	Met	

435				440				445								
atc Ile	cgg Arg 450	ctg Leu	tgt Leu	ttc Phe	aat Asn	gat Asp 455	gtg Val	cag Gln	acc Thr	ctt Leu	aaa Lys 460	gat Asp	ggg Gly	cgg Arg	cat His	1392
cca Pro 465	cag Gln	ggg Gly	gaa Glu	cag Gln	atg Met 470	tac Tyr	cgg Arg	agg Arg	gtg Val	tat Tyr 475	cgt Arg	ctg Leu	cat His	gag Glu	cgc Arg 480	1440
ctg Leu	gta Val	gcc Ala	atc Ile	cgc Arg 485	act Thr	gag Glu	tac Tyr	aac Asn	ctc Leu 490	cgg Arg	ctg Leu	aag Lys	gca Ala	gga Gly 495	gtg Val	1488
ggg Gly	gcc Ala	cct Pro	gtg Val 500	acc Thr	cag Gln	gtg Val	acc Thr	ctg Leu 505	cag Gln	agt Ser	aca Thr	cag Gln	agg Arg 510	cgc Arg	cca Pro	1536
gag Glu	cta Leu	gag Glu 515	gac Asp	tcc Ser	aca Thr	ctg Leu	cgc Arg 520	tac Tyr	ctg Leu	caa Gln	gac Asp	ctg Leu 525	ctg Leu	gcc Ala	tgg Trp	1584
gta Val	gag Glu 530	gag Glu	aac Asn	cag Gln	cgt Arg	cga Arg 535	ata Ile	gac Asp	agt Ser	gct Ala	gag Glu 540	tgg Trp	ggc Gly	gtg Val	gac Asp	1632
ttg Leu 545	ccc Pro	agt Ser	gtg Val	gag Glu	gcc Ala 550	cag Gln	ctg Leu	ggc Gly	agc Ser	cac His 555	cga Arg	ggc Gly	atg Met	cat His	cag Gln 560	1680
tct Ser	ata Ile	gag Glu	gaa Glu	ttt Phe 565	cgg Arg	gcc Ala	aag Lys	atc Ile	gag Glu 570	cgg Arg	gct Ala	cgg Arg	aat Asn	gat Asp 575	gag Glu	1728
agc Ser	cag Gln	ctc Leu	tcc Ser 580	cct Pro	gcc Ala	acc Thr	cgg Arg	ggg Gly 585	gcc Ala	tac Tyr	cgg Arg	gac Asp	tgc Cys 590	cta Leu	ggg Gly	1776
cgc Arg	cta Leu	gac Asp 595	ctg Leu	cag Gln	tat Tyr	gca Ala	aag Lys 600	ctg Leu	ctg Leu	aac Asn	tcc Ser	tcc Ser 605	aag Lys	gcc Ala	cgc Arg	1824
ctc Leu	cgg Arg 610	tcc Ser	ctg Leu	gag Glu	agc Ser	ttg Leu 615	cac His	ggg Gly	ttt Phe	gtg Val	gcg Ala 620	gca Ala	gct Ala	acc Thr	aag Lys	1872
gag Glu 625	ctg Leu	atg Met	tgg Trp	ctg Leu	aat Asn 630	gag Glu	aaa Lys	gaa Glu	gag Glu	gaa Glu 635	gtg Val	ggc Gly	ttt Phe	gat Asp 640		1920
tgg Trp	agt Ser	gac Asp	cgc Arg	aat Asn 645	acc Thr	aac Asn	atg Met	gca Ala 650	gcc Ala	aag Lys	aaa Lys	gaa Glu	agt Ser	tac Tyr 655	tcg Ser	1968
gcc Ala	ctg Leu	atg Met	cga Arg 660	gaa Glu	ctg Leu	gaa Glu	atg Met	aag Lys 665	gaa Glu	aag Lys	aaa Lys	atc Ile 670	aag Lys	gag Glu	atc Ile	2016
cag Gln	aac Asn 675	aca Thr	ggg Gly	gac Asp	agg Arg	ctg Leu	ctg Leu 680	cgg Arg	gaa Glu	gac Asp	cat His	cct Pro 685	gcc Ala	cgg Arg	ccc Pro	2064
acg Thr	gtg Val 690	gag Glu	tcc Ser	ttc Phe	cag Gln	gct Ala 695	gcc Ala	ttg Leu	cag Gln	aca Thr	cag Gln 700	tgg Trp	agc Ser	tgg Trp	atg Met	2112
ctg Leu 705	cag Gln	ctg Leu	tgt Cys	tgc Cys	tgc Cys 710	att Ile	gaa Glu	gca Ala	cac His 715	ttg Leu	aaa Lys	gag Glu	aat Asn	aca Thr	gcc Ala 720	2160

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tac	ttc	cag	ttc	ttc	tca	gat	gtt	cgg	gag	gcg	gag	gaa	cag	ttg	cag	2208
Tyr	Phe	Gln	Phe	Phe	Ser	Asp	Val	Arg	Glu	Ala	Glu	Glu	Gln	Leu	Gln	
				725					730					735		
aag	cta	cag	gag	acg	tta	cgc	agg	aag	tac	agc	tgt	gac	cgc	acc	atc	2256
Lys	Leu	Gln	Glu	Thr	Leu	Arg	Arg	Lys	Tyr	Ser	Cys	Asp	Arg	Thr	Ile	
			740					745					750			
acc	gtc	acc	agg	ctc	gag	gat	ctg	ctg	cag	gat	gcc	cag	gat	gag	aag	2304
Thr	Val	Thr	Arg	Leu	Glu	Asp	Leu	Leu	Gln	Asp	Ala	Gln	Asp	Glu	Lys	
		755					760					765				
gaa	caa	ctg	aat	gag	tac	aag	ggg	cac	ctc	tca	ggc	ctg	gcc	aag	cgg	2352
Glu	Gln	Leu	Asn	Glu	Tyr	Lys	Gly	His	Leu	Ser	Gly	Leu	Ala	Lys	Arg	
	770					775					780					
gcc	aag	gct	att	gtg	cag	ttg	aag	cca	cgc	aac	cct	gcc	cac	ccg	gtg	2400
Ala	Lys	Ala	Ile	Val	Gln	Leu	Lys	Pro	Arg	Asn	Pro	Ala	His	Pro	Val	
				785		790				795					800	
cgg	ggc	cac	gtg	ccc	ctg	ata	gcc	gtg	tgt	gac	tac	aag	cag	gtg	gag	2448
Arg	Gly	His	Val	Pro	Leu	Ile	Ala	Val	Cys	Asp	Tyr	Lys	Gln	Val	Glu	
				805					810					815		
gtg	act	gtg	cac	aag	ggt	gac	caa	tgc	cag	ctg	gtg	ggt	cct	gcc	cag	2496
Val	Thr	Val	His	Lys	Gly	Asp	Gln	Cys	Gln	Leu	Val	Gly	Pro	Ala	Gln	
			820					825					830			
cca	tcc	cac	tgg	aag	gtg	ctc	agt	ggt	tcc	agc	agc	gag	gcc	gct	gtg	2544
Pro	Ser	His	Trp	Lys	Val	Leu	Ser	Gly	Ser	Ser	Ser	Glu	Ala	Ala	Val	
		835					840					845				
cct	tct	gtg	tgc	ttt	ctt	gtg	ccg	ccg	ccc	aac	cag	gag	gcc	cag	gaa	2592
Pro	Ser	Val	Cys	Phe	Leu	Val	Pro	Pro	Pro	Asn	Gln	Glu	Ala	Gln	Glu	
	850					855					860					
gct	gtc	gct	aga	ctg	gag	gcg	cag	cat	cag	gcc	ctg	gtc	aca	ctg	tgg	2640
Ala	Val	Ala	Arg	Leu	Glu	Ala	Gln	His	Gln	Ala	Leu	Val	Thr	Leu	Trp	
				865		870				875					880	
cac	cag	ctt	cac	gtg	gac	atg	aag	agc	ctt	ctg	gcg	tgg	cag	agc	ctc	2688
His	Gln	Leu	His	Val	Asp	Met	Lys	Ser	Leu	Leu	Ala	Trp	Gln	Ser	Leu	
				885					890					895		
agt	cgg	gac	ata	cag	ctc	atc	cgg	tcc	tgg	tcc	cta	gtc	acg	ttc	cgc	2736
Ser	Arg	Asp	Ile	Gln	Leu	Ile	Arg	Ser	Trp	Ser	Leu	Val	Thr	Phe	Arg	
			900					905					910			
aca	ctg	aag	ccc	gag	gag	cag	cga	caa	gct	ctg	cgc	aac	ctg	gaa	ttg	2784
Thr	Leu	Lys	Pro	Glu	Glu	Gln	Arg	Gln	Ala	Leu	Arg	Asn	Leu	Glu	Leu	
		915					920					925				
cac	tac	cag	gcc	ttc	ctt	cga	gac	agc	cag	gat	gcc	ggt	ggc	ttt	ggg	2832
His	Tyr	Gln	Ala	Phe	Leu	Arg	Asp	Ser	Gln	Asp	Ala	Gly	Gly	Phe	Gly	
	930					935					940					
cct	gag	gac	cgt	cta	gtg	gca	gag	cgc	gag	tat	gga	tct	tgc	agc	cgc	2880
Pro	Glu	Asp	Arg	Leu	Val	Ala	Glu	Arg	Glu	Tyr	Gly	Ser	Cys	Ser	Arg	
					950					955					960	
cat	tac	cag	cag	tta	cta	caa	agc	ctg	gag	cag	ggt	gag	cag	gag	gag	2928
His	Tyr	Gln	Gln	Leu	Leu	Gln	Ser	Leu	Glu	Gln	Gly	Glu	Gln	Glu	Glu	
				965					970					975		
tcc	cgc	tgt	cag	cga	tgc	atc	tgc	gag	ctc	aag	gat	atc	cgg	ctg	cag	2976
Ser	Arg	Cys	Gln	Arg	Cys	Ile	Ser	Glu	Leu	Lys	Asp	Ile	Arg	Leu	Gln	
			980					985					990			

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ctg gag gcc tgt gag act cgg act gtg cac cgt ctg cgg ctg cca ctg	3024
Leu Glu Ala Cys Glu Thr Arg Thr Val His Arg Leu Arg Leu Pro Leu	
995 1000 1005	
gat aag gac ccc gca cgg gag tgc gcc cag cgc atc gct gag caa	3069
Asp Lys Asp Pro Ala Arg Glu Cys Ala Gln Arg Ile Ala Glu Gln	
1010 1015 1020	
cag aaa gcg cag gct gag gtg gag ggg ctg ggc aag gga gtt gcc	3114
Gln Lys Ala Gln Ala Glu Val Glu Gly Leu Gly Lys Gly Val Ala	
1025 1030 1035	
cgg ctg tct gct gag gct gag aaa gtt cta gcc ttg cca gag ccg	3159
Arg Leu Ser Ala Glu Ala Glu Lys Val Leu Ala Leu Pro Glu Pro	
1040 1045 1050	
tca cct gct gca ccc act ctg cgc tcg gag ttg gaa ctg acc ctg	3204
Ser Pro Ala Ala Pro Thr Leu Arg Ser Glu Leu Glu Leu Thr Leu	
1055 1060 1065	
ggc aag ctg gaa cag gtc cga agc ctg tct gcc atc tac ctg gag	3249
Gly Lys Leu Glu Gln Val Arg Ser Leu Ser Ala Ile Tyr Leu Glu	
1070 1075 1080	
aaa ctc aag acc atc agc ttg gtg att cgc agt acc cag ggg gct	3294
Lys Leu Lys Thr Ile Ser Leu Val Ile Arg Ser Thr Gln Gly Ala	
1085 1090 1095	
gag gag gtg ctt aaa acc cat gag gag cag ctg aag gag gcc cag	3339
Glu Glu Val Leu Lys Thr His Glu Glu Gln Leu Lys Glu Ala Gln	
1100 1105 1110	
gct gtg cct gcc act ctc caa gag ctt gaa gcc acc aag gcc tca	3384
Ala Val Pro Ala Thr Leu Gln Glu Leu Glu Ala Thr Lys Ala Ser	
1115 1120 1125	
cta aag aag ctg cgg gcc cag gcc gag gca cag cag cca gta ttc	3429
Leu Lys Lys Leu Arg Ala Gln Ala Glu Ala Gln Gln Pro Val Phe	
1130 1135 1140	
aac acc cta aga gat gag ttg cgg ggg gca cag gag gtt ggt gag	3474
Asn Thr Leu Arg Asp Glu Leu Arg Gly Ala Gln Glu Val Gly Glu	
1145 1150 1155	
cgg cta cag cag cgg cat ggt gag cgg gac gta gaa gtt gag cgc	3519
Arg Leu Gln Gln Arg His Gly Glu Arg Asp Val Glu Val Glu Arg	
1160 1165 1170	
tgg cga gaa cgt gtc act cag ttg ctg gag cgc tgg cag gct gtt	3564
Trp Arg Glu Arg Val Thr Gln Leu Leu Glu Arg Trp Gln Ala Val	
1175 1180 1185	
cta gcc cag aca gat gtg cgg cag cgt gag ctc gag cag ctg ggc	3609
Leu Ala Gln Thr Asp Val Arg Gln Arg Glu Leu Glu Gln Leu Gly	
1190 1195 1200	
cgc cag ctt cgc tac tat cgt gag agc gcg gat cct ctg agc gcc	3654
Arg Gln Leu Arg Tyr Tyr Arg Glu Ser Ala Asp Pro Leu Ser Ala	
1205 1210 1215	
tgg ctg cag gat gcc aag agg cgg caa gag cag atc cag gcc gtg	3699
Trp Leu Gln Asp Ala Lys Arg Arg Gln Glu Gln Ile Gln Ala Val	
1220 1225 1230	
cca ata gcc aac tgt cag gct gcg cga gaa cag ctg cgc cag gag	3744
Pro Ile Ala Asn Cys Gln Ala Ala Arg Glu Gln Leu Arg Gln Glu	
1235 1240 1245	
aag gcc ctg ctg gag gag att gag cgt cat ggt gag aag gtt gag	3789



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Lys	Ala	Leu	Leu	Glu	Glu	Ile	Glu	Arg	His	Gly	Glu	Lys	Val	Glu	
	1250					1255					1260				
gag	tgc	cag	aag	ttt	gct	aag	cag	tac	atc	aat	gca	atc	aag	gac	3834
Glu	Cys	Gln	Lys	Phe	Ala	Lys	Gln	Tyr	Ile	Asn	Ala	Ile	Lys	Asp	
	1265					1270					1275				
tat	gag	ctc	cag	ctg	atc	acg	tac	aag	gct	cag	ctt	gaa	ccc	gtg	3879
Tyr	Glu	Leu	Gln	Leu	Ile	Thr	Tyr	Lys	Ala	Gln	Leu	Glu	Pro	Val	
	1280					1285					1290				
gcc	tcc	cct	gcc	aag	aag	ccc	aag	gtt	cag	tct	gga	tcg	gag	agc	3924
Ala	Ser	Pro	Ala	Lys	Lys	Pro	Lys	Val	Gln	Ser	Gly	Ser	Glu	Ser	
	1295					1300					1305				
gtc	atc	cag	gag	tac	gtg	gat	ctg	cgc	acg	cgc	tac	agc	gag	ctg	3969
Val	Ile	Gln	Glu	Tyr	Val	Asp	Leu	Arg	Thr	Arg	Tyr	Ser	Glu	Leu	
	1310					1315					1320				
acc	acg	ctc	acg	agc	cag	tat	atc	aag	ttc	atc	agt	gag	acc	ctt	4014
Thr	Thr	Leu	Thr	Ser	Gln	Tyr	Ile	Lys	Phe	Ile	Ser	Glu	Thr	Leu	
	1325					1330					1335				
cgc	cgc	atg	gaa	gag	gag	gag	cgg	ctg	gct	gag	caa	cag	cgg	gca	4059
Arg	Arg	Met	Glu	Glu	Glu	Glu	Arg	Leu	Ala	Glu	Gln	Gln	Arg	Ala	
	1340					1345					1350				
gag	gag	cgg	gag	cga	ctg	gcc	gag	gtg	gag	gct	gcg	ctg	gag	aag	4104
Glu	Glu	Arg	Glu	Arg	Leu	Ala	Glu	Val	Glu	Ala	Ala	Leu	Glu	Lys	
	1355					1360					1365				
cag	cgg	cag	cta	gct	gag	gca	cac	gcc	cag	gct	aag	gcc	cag	gca	4149
Gln	Arg	Gln	Leu	Ala	Glu	Ala	His	Ala	Gln	Ala	Lys	Ala	Gln	Ala	
	1370					1375					1380				
gag	ctg	gaa	gca	caa	gaa	ctg	cag	cgg	cgc	atg	cag	gag	gag	gtg	4194
Glu	Leu	Glu	Ala	Gln	Glu	Leu	Gln	Arg	Arg	Met	Gln	Glu	Glu	Val	
	1385					1390					1395				
gcg	cgg	cgc	gag	gag	gca	gca	gtg	gac	gca	cag	cag	cag	aag	cgc	4239
Ala	Arg	Arg	Glu	Glu	Ala	Ala	Val	Asp	Ala	Gln	Gln	Gln	Lys	Arg	
	1400					1405					1410				
agc	atc	caa	gag	gag	ctg	cag	cac	ctg	agg	cag	agc	tcg	gag	gca	4284
Ser	Ile	Gln	Glu	Glu	Leu	Gln	His	Leu	Arg	Gln	Ser	Ser	Glu	Ala	
	1415					1420					1425				
gag	atc	cag	gcc	aag	gcc	cag	cag	gtg	gag	gct	gca	gaa	cgc	agc	4329
Glu	Ile	Gln	Ala	Lys	Ala	Gln	Gln	Val	Glu	Ala	Ala	Glu	Arg	Ser	
	1430					1435					1440				
cgg	atg	cgc	att	gag	gaa	gag	atc	cgT	gta	gta	cgT	ctg	cag	ctg	4374
Arg	Met	Arg	Ile	Glu	Glu	Glu	Ile	Arg	Val	Val	Arg	Leu	Gln	Leu	
	1445					1450					1455				
gag	aca	act	gag	cgg	cag	cgT	gga	ggg	gcg	gag	ggc	gag	ctg	cag	4419
Glu	Thr	Thr	Glu	Arg	Gln	Arg	Gly	Gly	Ala	Glu	Gly	Glu	Leu	Gln	
	1460					1465					1470				
gct	ctg	cgC	gct	cgg	gct	gag	gag	gca	gaa	gcg	cag	aag	cgg	cag	4464
Ala	Leu	Arg	Ala	Arg	Ala	Glu	Glu	Ala	Glu	Ala	Gln	Lys	Arg	Gln	
	1475					1480					1485				
gct	cag	gag	gaa	gct	gaa	cgC	ttg	cga	agg	cag	gtg	cag	gat	gag	4509
Ala	Gln	Glu	Glu	Ala	Glu	Arg	Leu	Arg	Arg	Gln	Val	Gln	Asp	Glu	
	1490					1495					1500				
agc	cag	cgC	aaa	cgg	cag	gca	gag	gca	gag	ctg	gcc	ctg	cgT	gtg	4554
Ser	Gln	Arg	Lys	Arg	Gln	Ala	Glu	Ala	Glu	Leu	Ala	Leu	Arg	Val	

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1505	1510	1515	
aag gct gaa gct gag gca gcg cga gag aag cag agg gcc ctg cag Lys Ala Glu Ala Glu Ala Ala Arg Glu Lys Gln Arg Ala Leu Gln	1520	1525	1530 4599
gcc ctg gat gag ctg aga ctg cag gcc gag gag gcc gag cgg cgg Ala Leu Asp Glu Leu Arg Leu Gln Ala Glu Glu Ala Glu Arg Arg	1535	1540	1545 4644
ctg cgc caa gcc gag gca gag cgg gca cgc caa gtg cag gtg gcc Leu Arg Gln Ala Glu Ala Glu Arg Ala Arg Gln Val Gln Val Ala	1550	1555	1560 4689
ctg gag acg gca cag cgc agt gcg gaa gtg gag ctg cag agc aag Leu Glu Thr Ala Gln Arg Ser Ala Glu Val Glu Leu Gln Ser Lys	1565	1570	1575 4734
cgg gca tcc ttt gca gag aag acc gca caa ttg gag cgc act ctg Arg Ala Ser Phe Ala Glu Lys Thr Ala Gln Leu Glu Arg Thr Leu	1580	1585	1590 4779
cag gag gag cat gta aca gtg gcc cag ctg cgg gag gag gcc gag Gln Glu Glu His Val Thr Val Ala Gln Leu Arg Glu Ala Glu	1595	1600	1605 4824
cga cgg gca cag cag caa gct gag gct gag cga gcc cgg gag gaa Arg Arg Ala Gln Gln Gln Ala Glu Ala Glu Arg Ala Arg Glu Glu	1610	1615	1620 4869
gct gag cgg gag ctg gag cgc tgg cag ctg aag gcc aat gaa gca Ala Glu Arg Glu Leu Glu Arg Trp Gln Leu Lys Ala Asn Glu Ala	1625	1630	1635 4914
ctg cgg ctg cgg ctg cag gca gaa gag gtg gca cag cag aag agc Leu Arg Leu Arg Leu Gln Ala Glu Glu Val Ala Gln Gln Lys Ser	1640	1645	1650 4959
ctg gca cag gcc gat gcc gag aag cag aag gaa gag gcc gag cgg Leu Ala Gln Ala Asp Ala Glu Lys Gln Lys Glu Ala Glu Arg	1655	1660	1665 5004
gaa gcg cgg cgg cgg gcc aag gcg gag gag cag gct gtg cgg cag Glu Ala Arg Arg Arg Gly Lys Ala Glu Glu Gln Ala Val Arg Gln	1670	1675	1680 5049
cgg gag ctg gcg gag cag gag ctg gag aag cag cgg cag ctg gcg Arg Glu Leu Ala Glu Gln Glu Leu Glu Lys Gln Arg Gln Leu Ala	1685	1690	1695 5094
gag ggc acc gca cag cag cgc ctg gct gcg gag caa gag ctg atc Glu Gly Thr Ala Gln Gln Arg Leu Ala Ala Glu Gln Glu Leu Ile	1700	1705	1710 5139
cgc ctg cgg gcc gag aca gag caa ggt gag cag cag cgg cag ctg Arg Leu Arg Ala Glu Thr Glu Gln Gly Glu Gln Gln Arg Gln Leu	1715	1720	1725 5184
ctg gag gaa gag ctg gcc cgg cta cag cac gag gcc acc gca gcc Leu Glu Glu Leu Ala Arg Leu Gln His Glu Ala Thr Ala Ala	1730	1735	1740 5229
acg cag aag cgc cag gag ctg gag gct gaa ctg gct aag gtc cgg Thr Gln Lys Arg Gln Glu Leu Glu Ala Leu Ala Lys Val Arg	1745	1750	1755 5274
gca gag atg gag gta ctt ctg gcc agc aag gcg cga gcc gag gaa Ala Glu Met Glu Val Leu Leu Ala Ser Lys Ala Arg Ala Glu Glu	1760	1765	1770 5319

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gag Glu	tct Ser 1775	cg Arg	tct Ser	acc Thr	agc Ser	gaa Glu 1780	aag Lys	tct Ser	aag Lys	cag Gln	agg Arg 1785	cta Leu	gag Glu	gct Ala	5364
gag Glu	gca Ala 1790	ggc Gly	cg Arg	ttt Phe	cgg Arg	gaa Glu 1795	ctg Leu	gcc Ala	gag Glu	gag Glu	gct Ala 1800	gcc Ala	cgg Arg	ctg Leu	5409
cgt Arg	gct Ala 1805	ctg Leu	gcg Ala	gag Glu	gag Glu	gcc Ala 1810	aag Lys	agg Arg	cag Gln	agg Arg	cag Gln 1815	ttg Leu	gca Ala	gag Glu	5454
gag Glu	gat Asp 1820	gcc Ala	gcc Ala	cg Arg	cag Gln	cgg Arg 1825	gcc Ala	gag Glu	gca Ala	gag Glu	cgg Arg 1830	gtg Val	ctt Leu	act Thr	5499
gag Glu	aag Lys 1835	ctg Leu	gct Ala	gcc Ala	atc Ile	agt Ser 1840	gag Glu	gcc Ala	aca Thr	cgg Arg	ctc Leu 1845	aag Lys	acg Thr	gag Glu	5544
gca Ala	gag Glu 1850	att Ile	gca Ala	ctc Leu	aaa Lys	gag Glu 1855	aag Lys	gag Glu	gcc Ala	gag Glu	aat Asn 1860	gag Glu	cg Arg	ctg Leu	5589
agg Arg	cg Arg 1865	ctg Leu	gca Ala	gaa Glu	gac Asp	gag Glu 1870	gcc Ala	ttc Phe	cag Gln	cgg Arg	cgg Arg 1875	cgt Arg	ctg Leu	gag Glu	5634
gag Glu	cag Gln 1880	gcg Ala	gca Ala	ctg Leu	cac His	aag Lys 1885	gct Ala	gac Asp	atc Ile	gag Glu	gag Glu 1890	cg Arg	ctg Leu	gcc Ala	5679
cag Gln	ctg Leu 1895	cg Arg	aag Lys	gca Ala	tca Ser	gag Glu 1900	agc Ser	gag Glu	ctg Leu	gag Glu	cgg Arg 1905	cag Gln	aag Lys	ggc Gly	5724
ttg Leu	gtg Val 1910	gag Glu	gac Asp	acc Thr	ctg Leu	cga Arg 1915	cag Gln	cgg Arg	cgg Arg	cag Gln	gtg Val 1920	gag Glu	gag Glu	gag Glu	5769
atc Ile	atg Met 1925	gcg Ala	ctg Leu	aag Lys	gtg Val	agc Ser 1930	ttt Phe	gag Glu	aaa Lys	gcc Ala	gcc Ala 1935	gcg Ala	ggc Gly	aag Lys	5814
gca Ala	gag Glu 1940	ctg Leu	gag Glu	ctg Leu	gag Glu	ctg Leu 1945	ggg Gly	cg Arg	att Ile	cgc Arg	agc Ser 1950	aac Asn	gcg Ala	gag Glu	5859
gac Asp	aca Thr 1955	atg Met	cg Arg	agc Ser	aag Lys	gag Glu 1960	cag Gln	gcg Ala	gaa Glu	ctg Leu	gag Glu 1965	gcg Ala	gcc Ala	cgg Arg	5904
cag Gln	cgg Arg 1970	cag Gln	ttg Leu	gcg Ala	gca Ala	gag Glu 1975	gag Glu	gag Glu	cag Gln	agg Arg	cgc Arg 1980	cgg Arg	gag Glu	gcc Ala	5949
gag Glu	gag Glu 1985	cg Arg	gtg Val	cag Gln	agg Arg	agc Ser 1990	ctg Leu	gca Ala	gcg Ala	gag Glu	gag Glu 1995	gaa Glu	gcc Ala	gct Ala	5994
cgg Arg	cag Gln 2000	cg Arg	aag Lys	gtg Val	gca Ala	ctg Leu 2005	gag Glu	gag Glu	gtc Val	gag Glu	cga Arg 2010	ctc Leu	aag Lys	gcc Ala	6039
aag Lys	gtt Val 2015	gaa Glu	gaa Glu	gca Ala	cgg Arg	cg Arg 2020	ctg Leu	cga Arg	gag Glu	cgg Arg	gca Ala 2025	gag Glu	cag Gln	gag Glu	6084

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tcg Ser	gcc Ala 2030	agg Arg	cag Gln	ctg Leu	cag Gln	ctg Leu 2035	gcc Ala	cag Gln	gag Glu	gcc Ala	gcc Ala 2040	cag Gln	aaa Lys	cgg Arg	6129
ctg Leu	cag Gln 2045	gcg Ala	gag Glu	gag Glu	aag Lys	gca Ala 2050	cac His	gcc Ala	ttt Phe	gtg Val	gtg Val 2055	cag Gln	cag Gln	cga Arg	6174
gag Glu	gag Glu 2060	gag Glu	ctg Leu	cag Gln	cag Gln	acg Thr 2065	ctt Leu	cag Gln	caa Gln	gag Glu	cag Gln 2070	aac Asn	atg Met	ctg Leu	6219
gat Asp	cgg Arg 2075	ctg Leu	cgg Arg	agt Ser	gag Glu	gca Ala 2080	gag Glu	gca Ala	gcg Ala	agg Arg	cga Arg 2085	gcc Ala	gcc Ala	gag Glu	6264
gag Glu	gcg Ala 2090	gag Glu	gag Glu	gcc Ala	cgg Arg	gag Glu 2095	cag Gln	gcg Ala	gag Glu	cgc Arg	gag Glu 2100	gca Ala	gcg Ala	cag Gln	6309
tct Ser	cgg Arg 2105	aaa Lys	caa Gln	gtg Val	gaa Glu	gag Glu 2110	gcc Ala	gag Glu	cgg Arg	ctg Leu	aaa Lys 2115	cag Gln	tca Ser	gca Ala	6354
gag Glu	gag Glu 2120	cag Gln	gct Ala	cag Gln	gcc Ala	cag Gln 2125	gct Ala	cag Gln	gcg Ala	cag Gln	gcg Ala 2130	gcc Ala	gca Ala	gag Glu	6399
aag Lys	ctg Leu 2135	cg Arg	aag Lys	gaa Glu	gcg Ala	gag Glu 2140	cag Gln	gag Glu	gcg Ala	gcg Ala	cgt Arg 2145	cgg Arg	gcc Ala	cag Gln	6444
gca Ala	gag Glu 2150	cag Gln	gca Ala	gcg Ala	ctg Leu	aaa Lys 2155	cag Gln	aag Lys	cag Gln	gca Ala	gcc Ala 2160	gac Asp	gcg Ala	gag Glu	6489
atg Met	gag Glu 2165	aag Lys	cat His	aaa Lys	aag Lys	ttt Phe 2170	gca Ala	gag Glu	cag Gln	aca Thr	ctc Leu 2175	cgg Arg	cag Gln	aag Lys	6534
gcc Ala	cag Gln 2180	gta Val	gag Glu	cag Gln	gag Glu	ctg Leu 2185	acc Thr	aca Thr	ctg Leu	agg Arg	ctg Leu 2190	cag Gln	cta Leu	gag Glu	6579
gag Glu	act Thr 2195	gac Asp	cac His	cag Gln	aag Lys	agc Ser 2200	atc Ile	ctg Leu	gat Asp	gag Glu	gag Glu 2205	ctg Leu	cag Gln	cga Arg	6624
cta Leu	aag Lys 2210	gcc Ala	gag Glu	gta Val	aca Thr	gag Glu 2215	gca Ala	gcc Ala	cgg Arg	cag Gln	cg Arg 2220	agc Ser	cag Gln	gta Val	6669
gag Glu	gag Glu 2225	gag Glu	ctc Leu	ttc Phe	tct Ser	gtc Val 2230	cgt Arg	gtg Val	cag Gln	atg Met	gag Glu 2235	gag Glu	ctg Leu	ggc Gly	6714
aag Lys	ctc Leu 2240	aag Lys	gct Ala	cg Arg	att Ile	gaa Glu 2245	gct Ala	gaa Glu	aac Asn	cgg Arg	gcc Ala 2250	ctc Leu	atc Ile	ctt Leu	6759
cgt Arg	gac Asp 2255	aag Lys	gac Asp	aac Asn	aca Thr	cag Gln 2260	cg Arg	ttc Phe	ctg Leu	gag Glu	gag Glu 2265	gag Glu	gcc Ala	gag Glu	6804
aag Lys	atg Met 2270	aaa Lys	cag Gln	gtg Val	gcc Ala	gag Glu 2275	gaa Glu	gcg Ala	gca Ala	cgg Arg	ttg Leu 2280	agc Ser	gtg Val	gcc Ala	6849
gcc	cag	gag	gca	gca	cgg	ctg	agg	cag	cta	gcg	gag	gag	gac	ctg	6894

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Ala	Gln	Glu	Ala	Ala	Arg	Leu	Arg	Gln	Leu	Ala	Glu	Glu	Asp	Leu		
	2285					2290					2295					
gcg	cag	cag	cgg	gcc	ctg	gca	gag	aag	atg	ctg	aag	gag	aag	atg	6939	
Ala	Gln	Gln	Arg	Ala	Leu	Ala	Glu	Lys	Met	Leu	Lys	Glu	Lys	Met		
	2300					2305					2310					
cag	gcg	gtg	cag	gaa	gcc	acg	agg	ctc	aag	gcc	gag	gct	gag	ctg	6984	
Gln	Ala	Val	Gln	Glu	Ala	Thr	Arg	Leu	Lys	Ala	Glu	Ala	Glu	Leu		
	2315					2320					2325					
ctg	cag	cag	cag	aag	gag	ctt	gcc	cag	gag	cag	gcc	cgg	cgg	ctg	7029	
Leu	Gln	Gln	Gln	Lys	Glu	Leu	Ala	Gln	Glu	Gln	Ala	Arg	Arg	Leu		
	2330					2335					2340					
cag	gag	gac	aag	gag	caa	atg	gct	cag	cag	ttg	gta	gag	gag	aca	7074	
Gln	Glu	Asp	Lys	Glu	Gln	Met	Ala	Gln	Gln	Leu	Val	Glu	Glu	Thr		
	2345					2350					2355					
cag	ggt	ttc	cag	agg	act	ctg	gag	gcc	gag	cgg	cag	cgg	cag	ctg	7119	
Gln	Gly	Phe	Gln	Arg	Thr	Leu	Glu	Ala	Glu	Arg	Gln	Arg	Gln	Leu		
	2360					2365					2370					
gag	atg	agc	gcg	gag	gcc	gag	cgc	ctc	aag	ctg	cgc	atg	gtt	gag	7164	
Glu	Met	Ser	Ala	Glu	Ala	Glu	Arg	Leu	Lys	Leu	Arg	Met	Val	Glu		
	2375					2380					2385					
atg	agc	cgg	gct	cag	gcc	cgc	gcg	gag	gag	gac	gcc	cag	cgc	ttc	7209	
Met	Ser	Arg	Ala	Gln	Ala	Arg	Ala	Glu	Glu	Asp	Ala	Gln	Arg	Phe		
	2390					2395					2400					
cgg	aag	cag	gct	gaa	gag	atc	ggc	gag	aag	ctg	cac	cgc	act	gaa	7254	
Arg	Lys	Gln	Ala	Glu	Glu	Ile	Gly	Glu	Lys	Leu	His	Arg	Thr	Glu		
	2405					2410					2415					
ctt	gcg	aca	cag	gag	aag	gtg	acg	ttg	gtg	cag	acg	ctg	gag	atc	7299	
Leu	Ala	Thr	Gln	Glu	Lys	Val	Thr	Leu	Val	Gln	Thr	Leu	Glu	Ile		
	2420					2425					2430					
cag	cga	cag	cag	agt	gac	cac	gat	gcc	gag	cgt	ctg	agg	gag	gcc	7344	
Gln	Arg	Gln	Gln	Ser	Asp	His	Asp	Ala	Glu	Arg	Leu	Arg	Glu	Ala		
	2435					2440					2445					
att	gcg	gag	ctg	gag	cgt	gag	aag	gag	aag	ctc	aag	cag	gag	gcg	7389	
Ile	Ala	Glu	Leu	Glu	Arg	Glu	Lys	Glu	Lys	Leu	Lys	Gln	Glu	Ala		
	2450					2455					2460					
aag	tta	ctg	cag	ctc	aag	tcg	gag	gag	atg	cag	act	gtg	cag	cag	7434	
Lys	Leu	Leu	Gln	Leu	Lys	Ser	Glu	Glu	Met	Gln	Thr	Val	Gln	Gln		
	2465					2470					2475					
gag	cag	ata	ctg	cag	gag	acc	cag	gcc	ctg	cag	aag	agc	ttc	ctc	7479	
Glu	Gln	Ile	Leu	Gln	Glu	Thr	Gln	Ala	Leu	Gln	Lys	Ser	Phe	Leu		
	2480					2485					2490					
tct	gag	aag	gac	agc	ctg	ctg	cag	cgc	gag	cgc	ttc	atc	gag	cag	7524	
Ser	Glu	Lys	Asp	Ser	Leu	Leu	Gln	Arg	Glu	Arg	Phe	Ile	Glu	Gln		
	2495					2500					2505					
gag	aag	gcc	aag	ctg	gag	cag	ctc	ttc	cag	gac	gag	gtg	gct	aaa	7569	
Glu	Lys	Ala	Lys	Leu	Glu	Gln	Leu	Phe	Gln	Asp	Glu	Val	Ala	Lys		
	2510					2515					2520					
gca	aag	cag	ctg	cgt	gag	gag	cag	cag	cgg	cag	cag	cag	cag	atg	7614	
Ala	Lys	Gln	Leu	Arg	Glu	Glu	Gln	Gln	Arg	Gln	Gln	Gln	Gln	Met		
	2525					2530					2535					
gaa	cag	gaa	aag	cag	gag	ctg	atg	gcc	agc	atg	gag	gag	gcc	agg	7659	
Glu	Gln	Glu	Lys	Gln	Glu	Leu	Met	Ala	Ser	Met	Glu	Glu	Ala	Arg		

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	2540					2545					2550					
agg Arg	cgg Arg 2555	cag Gln	cgc Arg	gag Glu	gct Ala	gag Glu 2560	gag Glu	ggc Gly	gtg Val	agg Arg	cgc Arg 2565	aag Lys	caa Gln	gag Glu	7704	
gaa Glu	ctg Leu 2570	cag Gln	cat His	ctg Leu	gag Glu	cag Gln 2575	cag Gln	cgg Arg	cag Gln	cag Gln	cag Gln 2580	gag Glu	aag Lys	ctc Leu	7749	
ctg Leu	gcg Ala 2585	gag Glu	gaa Glu	aac Asn	cag Gln	cgg Arg 2590	ctg Leu	cga Arg	gag Glu	cgg Arg	ctg Leu 2595	cag Gln	cgc Arg	ctg Leu	7794	
gag Glu	gaa Glu 2600	gag Glu	cac His	cgc Arg	gct Ala	gcc Ala 2605	ttg Leu	gct Ala	cac His	tct Ser	gag Glu 2610	atc Ile	gcc Ala	acc Thr	7839	
acc Thr	cag Gln 2615	gcc Ala	gct Ala	tcc Ser	acg Thr	aag Lys 2620	gca Ala	ctg Leu	ccc Pro	aac Asn	ggc Gly 2625	cgg Arg	gat Asp	gca Ala	7884	
ccc Pro	gat Asp 2630	ggc Gly	ccg Pro	tcc Ser	gtg Val	gag Glu 2635	gct Ala	gaa Glu	ccc Pro	gag Glu	tac Tyr 2640	acc Thr	ttt Phe	gag Glu	7929	
gga Gly	cta Leu 2645	cgt Arg	cag Gln	aag Lys	gtg Val	ccg Pro 2650	gcc Ala	cag Gln	cag Gln	cta Leu	cag Gln 2655	gaa Glu	gca Ala	ggc Gly	7974	
atc Ile	ctg Leu 2660	agc Ser	cag Gln	gag Glu	gaa Glu	ctg Leu 2665	cag Gln	cgt Arg	ttg Leu	gca Ala	cag Gln 2670	ggc Gly	cac His	acc Thr	8019	
acg Thr	gtg Val 2675	gct Ala	gag Glu	ctc Leu	acg Thr	cag Gln 2680	cgg Arg	gaa Glu	gat Asp	gtg Val	tac Tyr 2685	cgg Arg	tac Tyr	ctg Leu	8064	
aag Lys	ggc Gly 2690	cgc Arg	agc Ser	agc Ser	att Ile	gca Ala 2695	gga Gly	ctg Leu	tta Leu	ctg Leu	aag Lys 2700	ccc Pro	acc Thr	aat Asn	8109	
gag Glu	aaa Lys 2705	ctg Leu	agt Ser	gtc Val	tac Tyr	aca Thr 2710	gcc Ala	cta Leu	cag Gln	cgg Arg	cag Gln 2715	ctg Leu	ctc Leu	agc Ser	8154	
ccc Pro	gga Gly 2720	aca Thr	gct Ala	ctg Leu	atc Ile	ttg Leu 2725	ctg Leu	gag Glu	gcc Ala	cag Gln	gca Ala 2730	gcc Ala	tcg Ser	ggc Gly	8199	
ttc Phe	ctg Leu 2735	ctg Leu	gat Asp	cct Pro	gtg Val	cgg Arg 2740	aat Asn	cgg Arg	cgg Arg	ctg Leu	aca Thr 2745	gtc Val	aat Asn	gag Glu	8244	
gct Ala	gtg Val 2750	aag Lys	gag Glu	ggc Gly	gtc Val	gtg Val 2755	ggc Gly	cct Pro	gag Glu	ctg Leu	cac His 2760	cac His	aaa Lys	ctg Leu	8289	
ctg Leu	tca Ser 2765	gct Ala	gag Glu	cgt Arg	gcc Ala	gtc Val 2770	acc Thr	ggc Gly	tac Tyr	aag Lys	gac Asp 2775	ccc Pro	tat Tyr	aca Thr	8334	
ggg Gly	gaa Glu 2780	cag Gln	atc Ile	tcg Ser	ctc Leu	ttc Phe 2785	cag Gln	gcc Ala	atg Met	aag Lys	aag Lys 2790	gac Asp	ctt Leu	att Ile	8379	
gtc Val	agg Arg 2795	gac Asp	cat His	ggc Gly	gtc Val	cgc Arg 2800	ctg Leu	ctg Leu	gag Glu	gcc Ala	cag Gln 2805	atc Ile	gcc Ala	acc Thr	8424	

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ggt Gly	ggc Gly 2810	atc Ile	att Ile	gat Asp	cct Pro	gtg Val 2815	cac His	agc Ser	cac His	cgt Arg	gtg Val 2820	cct Pro	gtg Val	gac Asp	8469
gtg Val	gcc Ala 2825	tac Tyr	aaa Lys	cgt Arg	ggc Gly	tac Tyr 2830	ttc Phe	gat Asp	gaa Glu	gag Glu	atg Met 2835	aac Asn	cgc Arg	atc Ile	8514
ttg Leu	tct Ser 2840	gac Asp	cca Pro	agc Ser	gat Asp	gac Asp 2845	acc Thr	aag Lys	ggc Gly	ttc Phe	ttc Phe 2850	gac Asp	ccc Pro	aac Asn	8559
acc Thr	cac His 2855	gag Glu	aac Asn	ctc Leu	act Thr	tac Tyr 2860	ctg Leu	cag Gln	ctg Leu	ctg Leu	gag Glu 2865	cgc Arg	tgt Cys	gtg Val	8604
gag Glu	gac Asp 2870	ccc Pro	gag Glu	acc Thr	ggc Gly	ctg Leu 2875	cgc Arg	ctc Leu	ctg Leu	cca Pro	ctc Leu 2880	aca Thr	gat Asp	aag Lys	8649
gct Ala	gcc Ala 2885	aag Lys	ggt Gly	ggc Gly	gag Glu	ctg Leu 2890	gtg Val	tac Tyr	acc Thr	gat Asp	acg Thr 2895	gag Glu	gcc Ala	cgt Arg	8694
gac Asp	gtc Val 2900	ttc Phe	gaa Glu	aag Lys	gcc Ala	acc Thr 2905	gtg Val	tct Ser	gca Ala	ccg Pro	ttt Phe 2910	ggc Gly	aag Lys	ttc Phe	8739
cag Gln	ggc Gly 2915	agg Arg	acc Thr	gtg Val	acc Thr	atc Ile 2920	tgg Trp	gag Glu	atc Ile	atc Ile	aac Asn 2925	tcg Ser	gag Glu	tac Tyr	8784
ttc Phe	acg Thr 2930	gcg Ala	gaa Glu	cag Gln	cga Arg	cgg Arg 2935	gac Asp	ctg Leu	ctg Leu	cag Gln	cag Gln 2940	ttc Phe	cgc Arg	acg Thr	8829
ggc Gly	cac His 2945	atc Ile	acg Thr	gtg Val	gag Glu	aaa Lys 2950	atc Ile	atc Ile	aaa Lys	atc Ile	gtc Val 2955	atc Ile	aca Thr	gtg Val	8874
gtg Val	gag Glu 2960	gaa Glu	cac His	gag Glu	cgg Arg	aag Lys 2965	ggc Gly	cag Gln	ctc Leu	tgc Cys	ttt Phe 2970	gag Glu	ggc Gly	ctc Leu	8919
cgt Arg	gcc Ala 2975	ctc Leu	gtg Val	ccc Pro	gcc Ala	gca Ala 2980	gag Glu	ctg Leu	ctg Leu	gac Asp	agt Ser 2985	ggg Gly	gtc Val	atc Ile	8964
agc Ser	cac His 2990	gaa Glu	ctc Leu	tac Tyr	cag Gln	cag Gln 2995	ctg Leu	cag Gln	cgg Arg	ggt Gly	gag Glu 3000	cgt Arg	tct Ser	gtg Val	9009
cgg Arg	gaa Glu 3005	gtg Val	gcc Ala	gag Glu	gcg Ala	gac Asp 3010	agc Ser	gtg Val	agg Arg	cag Gln	gcc Ala 3015	ctg Leu	cgg Arg	ggt Gly	9054
acc Thr	aat Asn 3020	gtc Val	atc Ile	gcc Ala	ggt Gly	gtg Val 3025	tgg Trp	ctg Leu	gaa Glu	gaa Glu	gca Ala 3030	ggg Gly	cag Gln	aag Lys	9099
ctg Leu	agc Ser 3035	atc Ile	tat Tyr	gag Glu	gcc Ala	ctg Leu 3040	aag Lys	aaa Lys	gac Asp	ttg Leu	ctg Leu 3045	cag Gln	cca Pro	gag Glu	9144
gtg Val	gct Ala 3050	gtg Val	gcc Ala	ttg Leu	ctg Leu	gag Glu 3055	gcc Ala	cag Gln	gct Ala	ggc Gly	act Thr 3060	ggg Gly	cat His	atc Ile	9189

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atc Ile	gac Asp 3065	cct Pro	gcc Ala	acc Thr	agc Ser	gcc Ala 3070	agg Arg	ctg Leu	act Thr	gtg Val	gac Asp 3075	gag Glu	gcg Ala	gtg Val	9234
cgt Arg	gct Ala 3080	ggc Gly	ctg Leu	gtg Val	ggg Gly	cct Pro 3085	gag Glu	ctg Leu	cac His	gag Glu	aag Lys 3090	ctg Leu	ctg Leu	tca Ser	9279
gcc Ala	gag Glu 3095	aag Lys	gcc Ala	gtg Val	aca Thr	ggc Gly 3100	tac Tyr	agg Arg	gat Asp	ccc Pro	tac Tyr 3105	tca Ser	gga Gly	cag Gln	9324
agt Ser	gtc Val 3110	tca Ser	ctg Leu	ttc Phe	cag Gln	gcc Ala 3115	ttg Leu	aag Lys	aag Lys	ggg Gly	ctc Leu 3120	atc Ile	ccc Pro	cga Arg	9369
gaa Glu	cag Gln 3125	ggc Gly	ctg Leu	cgc Arg	ctg Leu	ctg Leu 3130	gat Asp	gcc Ala	cag Gln	tta Leu	tcc Ser 3135	act Thr	ggg Gly	ggc Gly	9414
att Ile	gta Val 3140	gac Asp	ccc Pro	agc Ser	aaa Lys	agc Ser 3145	cac His	cgt Arg	gtg Val	ccc Pro	ctg Leu 3150	gat Asp	gtt Val	gcc Ala	9459
tat Tyr	gcc Ala 3155	cgg Arg	ggc Gly	tac Tyr	ctg Leu	gac Asp 3160	aaa Lys	gag Glu	act Thr	aac Asn	agg Arg 3165	gcc Ala	ctg Leu	acg Thr	9504
tca Ser	ccc Pro 3170	aga Arg	gat Asp	gat Asp	gcc Ala	aga Arg 3175	gtc Val	tac Tyr	cat His	gac Asp	ccc Pro 3180	agc Ser	acc Thr	cag Gln	9549
gag Glu	cca Pro 3185	gtc Val	acc Thr	tac Tyr	agc Ser	cag Gln 3190	ctc Leu	caa Gln	cag Gln	cgg Arg	tgc Cys 3195	cgg Arg	tct Ser	gac Asp	9594
cag Gln	ctg Leu 3200	acc Thr	ggc Gly	ttg Leu	agc Ser	cta Leu 3205	ctg Leu	cca Pro	ctc Leu	tca Ser	gag Glu 3210	aag Lys	gcc Ala	gtc Val	9639
cgg Arg	gcc Ala 3215	cgg Arg	cag Gln	gag Glu	gag Glu	gtc Val 3220	tac Tyr	tct Ser	gag Glu	ctc Leu	cag Gln 3225	gcc Ala	cgg Arg	gag Glu	9684
aca Thr	ctg Leu 3230	gag Glu	cag Gln	gcc Ala	aag Lys	gtt Val 3235	gag Glu	gtt Val	cct Pro	gtg Val	ggc Gly 3240	agc Ser	ttt Phe	aag Lys	9729
ggc Gly	agg Arg 3245	gcg Ala	atg Met	act Thr	gtg Val	tgg Trp 3250	gag Glu	ctc Leu	atc Ile	agc Ser	tct Ser 3255	gaa Glu	tac Tyr	ttt Phe	9774
act Thr	gag Glu 3260	gag Glu	cag Gln	cgg Arg	cag Gln	gag Glu 3265	ttg Leu	ctg Leu	cgg Arg	cag Gln	ttc Phe 3270	cgc Arg	aca Thr	ggc Gly	9819
aag Lys	gtc Val 3275	acc Thr	gtg Val	gag Glu	aag Lys	gtc Val 3280	atc Ile	aag Lys	att Ile	gtc Val	atc Ile 3285	acc Thr	atc Ile	gtg Val	9864
gag Glu	gag Glu 3290	gtg Val	gag Glu	act Thr	cgg Arg	cgg Arg 3295	cag Gln	gag Glu	aga Arg	ctg Leu	tcc Ser 3300	ttt Phe	agt Ser	ggc Gly	9909
ctc Leu	cgt Arg 3305	gcc Ala	cct Pro	gtg Val	ccg Pro	gcc Ala 3310	agt Ser	gag Glu	ctc Leu	ctg Leu	gac Asp 3315	gcc Ala	aag Lys	atc Ile	9954
ctc Leu	agc Leu	aga Pro	gct Thr	cag Thr	ttt Pro	gac Leu	cag Leu	ctc Leu	aag Thr	gat Thr	ggc Leu	aag Thr	aca Thr	tca Thr	9999



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Leu	Ser	Arg	Ala	Gln	Phe	Asp	Gln	Leu	Lys	Asp	Gly	Lys	Thr	Ser	
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gtc	aaa	gag	ctg	tcc	gag	gtg	ggc	tcc	gtg	cgg	act	ctg	ctg	cag	10044
Val	Lys	Glu	Leu	Ser	Glu	Val	Gly	Ser	Val	Arg	Thr	Leu	Leu	Gln	
	3335					3340					3345				
ggc	agc	ggc	tgc	ctg	gcc	ggc	atc	tat	ctg	gag	gac	tcg	aag	gag	10089
Gly	Ser	Gly	Cys	Leu	Ala	Gly	Ile	Tyr	Leu	Glu	Asp	Ser	Lys	Glu	
	3350					3355					3360				
aaa	gta	acc	atc	tat	gag	gcc	atg	cgc	cgg	ggc	ctc	ctc	aga	ccc	10134
Lys	Val	Thr	Ile	Tyr	Glu	Ala	Met	Arg	Arg	Gly	Leu	Leu	Arg	Pro	
	3365					3370					3375				
agc	aca	gcc	acg	ctc	ctg	ctg	gag	gcc	cag	gca	gcc	act	ggg	ttc	10179
Ser	Thr	Ala	Thr	Leu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	
	3380					3385					3390				
ctg	gtg	gac	cct	gtg	cgg	aac	caa	cgt	ctg	tat	gtc	cat	gag	gct	10224
Leu	Val	Asp	Pro	Val	Arg	Asn	Gln	Arg	Leu	Tyr	Val	His	Glu	Ala	
	3395					3400					3405				
gtc	aag	gcg	ggc	gta	gtg	ggc	cct	gaa	ctc	cat	gag	aag	ctg	ctg	10269
Val	Lys	Ala	Gly	Val	Val	Gly	Pro	Glu	Leu	His	Glu	Lys	Leu	Leu	
	3410					3415					3420				
tcg	gcc	gag	aag	gcc	gtc	act	ggc	tac	aag	gat	ccc	tac	tcg	ggc	10314
Ser	Ala	Glu	Lys	Ala	Val	Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	
	3425					3430					3435				
aac	acc	atc	tcg	ctg	ttc	cag	gcc	atg	aaa	aag	ggc	ctg	gtc	ctc	10359
Asn	Thr	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	Val	Leu	
	3440					3445					3450				
agg	gac	cat	gcc	atc	cgc	ctg	ctg	gag	gcc	cag	gtc	gcc	acg	ggg	10404
Arg	Asp	His	Ala	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Val	Ala	Thr	Gly	
	3455					3460					3465				
ggc	atc	atc	gac	ccg	gtg	cac	agc	cac	cgc	ctg	cct	gtg	gac	gtg	10449
Gly	Ile	Ile	Asp	Pro	Val	His	Ser	His	Arg	Leu	Pro	Val	Asp	Val	
	3470					3475					3480				
gcc	tac	cag	cgt	ggc	tac	ttc	gat	gag	gag	atg	aac	cgt	gtg	ctg	10494
Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Asn	Arg	Val	Leu	
	3485					3490					3495				
gca	gat	cca	agt	gat	gac	acc	aag	ggc	ttc	ttt	gac	ccc	aac	acc	10539
Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	
	3500					3505					3510				
cac	gag	aac	ctc	acc	tac	ctg	cag	ctg	ctg	gag	cgc	tgt	gtg	gag	10584
His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Glu	
	3515					3520					3525				
gac	ccc	gag	acc	ggc	ctg	cgc	ctc	ctg	cca	ctc	aaa	ggg	gca	gag	10629
Asp	Pro	Glu	Thr	Gly	Leu	Arg	Leu	Leu	Pro	Leu	Lys	Gly	Ala	Glu	
	3530					3535					3540				
aag	acc	gag	gtg	gta	gaa	acc	aca	cag	gtg	tat	act	gag	gag	gag	10674
Lys	Thr	Glu	Val	Val	Glu	Thr	Thr	Gln	Val	Tyr	Thr	Glu	Glu	Glu	
	3545					3550					3555				
act	cgg	agg	gcg	ttc	gag	gag	acg	cag	att	gac	atc	ccg	ggg	ggg	10719
Thr	Arg	Arg	Ala	Phe	Glu	Glu	Thr	Gln	Ile	Asp	Ile	Pro	Gly	Gly	
	3560					3565					3570				
ggc	agc	cac	ggg	ggc	tcc	tcc	atg	tct	ctg	tgg	gag	gtg	atg	cag	10764
Gly	Ser	His	Gly	Gly	Ser	Ser	Met	Ser	Leu	Trp	Glu	Val	Met	Gln	

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3575		3580		3585	
tca aac atg atc ccg gag gat cag cgt gcc cgg ctc atg gct gac					10809
Ser Asn Met Ile Pro Glu Asp Gln Arg Ala Arg Leu Met Ala Asp					
3590		3595		3600	
ttt cag gct ggg agg gta acc aag gaa cgc atg atc att atc atc					10854
Phe Gln Ala Gly Arg Val Thr Lys Glu Arg Met Ile Ile Ile Ile					
3605		3610		3615	
atc gaa atc atc gag aag acc gag atc atc cgc cag cag aac ctg					10899
Ile Glu Ile Ile Glu Lys Thr Glu Ile Ile Arg Gln Gln Asn Leu					
3620		3625		3630	
gcc tcc tat gac tac gtg cgc cgc cgc ctc act gcc gaa gac ctg					10944
Ala Ser Tyr Asp Tyr Val Arg Arg Arg Leu Thr Ala Glu Asp Leu					
3635		3640		3645	
tac gag gcc cgg atc atc tcc ctt gag acc tac aac ctc ttc cgg					10989
Tyr Glu Ala Arg Ile Ile Ser Leu Glu Thr Tyr Asn Leu Phe Arg					
3650		3655		3660	
gaa ggc acc aag aac ctc cgt gaa gtg ctg gag atg gaa tct gcc					11034
Glu Gly Thr Lys Asn Leu Arg Glu Val Leu Glu Met Glu Ser Ala					
3665		3670		3675	
tgg cgc tac ctt tac ggc aca ggc gcg gtg gcc ggt gtc tac ctg					11079
Trp Arg Tyr Leu Tyr Gly Thr Gly Ala Val Ala Gly Val Tyr Leu					
3680		3685		3690	
cct ggc tcc agg cag acg cta acc atc tac cag gcc ctt aag aag					11124
Pro Gly Ser Arg Gln Thr Leu Thr Ile Tyr Gln Ala Leu Lys Lys					
3695		3700		3705	
ggg ttg ctg agt gcc gag gtg gcc cgc tta ttg ctg gaa gca cag					11169
Gly Leu Leu Ser Ala Glu Val Ala Arg Leu Leu Leu Glu Ala Gln					
3710		3715		3720	
gca gcc acg ggc ttc ctg ctg gac cca gtg aag ggg gag cgg ctg					11214
Ala Ala Thr Gly Phe Leu Leu Asp Pro Val Lys Gly Glu Arg Leu					
3725		3730		3735	
acc gtg gat gag gct gtg cgg aag ggc ctg gta ggc ccc gag ctg					11259
Thr Val Asp Glu Ala Val Arg Lys Gly Leu Val Gly Pro Glu Leu					
3740		3745		3750	
cat gac cgc ctc ctc tct gcc gag cga gct gta act ggt tac cga					11304
His Asp Arg Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Arg					
3755		3760		3765	
gac ccc tac acg gaa cag acc atc tca ctc ttc cag gcc atg aag					11349
Asp Pro Tyr Thr Glu Gln Thr Ile Ser Leu Phe Gln Ala Met Lys					
3770		3775		3780	
aag gag ctg atc cct gct gag gag gcg ctg agg ctg ctg gat gcg					11394
Lys Glu Leu Ile Pro Ala Glu Glu Glu Ala Leu Arg Leu Leu Asp Ala					
3785		3790		3795	
cag cta gcc aca gga ggc att gtg gac ccc cgc ctg ggt ttc cac					11439
Gln Leu Ala Thr Gly Gly Ile Val Asp Pro Arg Leu Gly Phe His					
3800		3805		3810	
ctc cct ctg gag gtg gct tac caa cgc ggc tac ctc aat aag gac					11484
Leu Pro Leu Glu Val Ala Tyr Gln Arg Gly Tyr Leu Asn Lys Asp					
3815		3820		3825	
acg cac gac cag ctg tcg gag ccc agc gag gtg cgc agc tac gtg					11529
Thr His Asp Gln Leu Ser Glu Pro Ser Glu Val Arg Ser Tyr Val					
3830		3835		3840	

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gac Asp	ccc Pro 3845	tcc Ser	acg Thr	gat Asp	gag Glu	cgg Arg 3850	ctc Leu	agc Ser	tac Tyr	aca Thr	cag Gln 3855	ctg Leu	ctc Leu	aag Lys	11574
cgt Arg	tgc Cys 3860	cgc Arg	cgt Arg	gat Asp	gac Asp	ccc Pro 3865	agc Ser	ggc Gly	cag Gln	atg Met	ctg Leu 3870	ctg Leu	ctg Leu	ctc Leu	11619
tct Ser	gat Asp 3875	gcc Ala	cgc Arg	aag Lys	ctg Leu	acc Thr 3880	ttc Phe	cgc Arg	ggt Gly	ctc Leu	cgc Arg 3885	aag Lys	cag Gln	atc Ile	11664
act Thr	gtg Val 3890	gag Glu	gag Glu	ctg Leu	gta Val	cgc Arg 3895	tct Ser	caa Gln	gtc Val	atg Met	gac Asp 3900	gag Glu	gcc Ala	aca Thr	11709
gcg Ala	cta Leu 3905	cag Gln	cta Leu	caa Gln	gaa Glu	ggc Gly 3910	ctg Leu	acc Thr	tcc Ser	atc Ile	gag Glu 3915	gag Glu	gtc Val	act Thr	11754
aag Lys	aac Asn 3920	ctg Leu	cag Gln	aag Lys	ttc Phe	ctc Leu 3925	gag Glu	ggt Gly	acc Thr	agc Ser	tgc Cys 3930	att Ile	gcc Ala	gga Gly	11799
gtc Val	ttt Phe 3935	gtt Val	gat Asp	gcc Ala	acc Thr	aag Lys 3940	gaa Glu	cgg Arg	ctc Leu	tgc Ser	gtg Val 3945	tac Tyr	cag Gln	gct Ala	11844
atg Met	aag Lys 3950	aag Lys	ggc Gly	atc Ile	atc Ile	cgc Arg 3955	ccc Pro	ggg Gly	aca Thr	gcc Ala	ttt Phe 3960	gag Glu	ctc Leu	ctg Leu	11889
gaa Glu	gca Ala 3965	cag Gln	gca Ala	gcc Ala	acc Thr	ggc Gly 3970	tat Tyr	gtc Val	att Ile	gac Asp	ccc Pro 3975	atc Ile	aag Lys	gga Gly	11934
ctc Leu	aag Lys 3980	ctg Leu	acg Thr	gtg Val	gaa Glu	gaa Glu 3985	gcc Ala	gtt Val	cgt Arg	atg Met	ggg Gly 3990	att Ile	gtg Val	ggc Gly	11979
ccc Pro	gag Glu 3995	ttc Phe	aag Lys	gac Asp	aag Lys	ctg Leu 4000	ctg Leu	tca Ser	gct Ala	gag Glu	cgt Arg 4005	gcc Ala	gtc Val	act Thr	12024
ggc Gly	tac Tyr 4010	aag Lys	gac Asp	ccc Pro	tac Tyr	tct Ser 4015	ggg Gly	aaa Lys	ctc Leu	atc Ile	tcc Ser 4020	ctc Leu	ttc Phe	cag Gln	12069
gcc Ala	atg Met 4025	aag Lys	aag Lys	ggc Gly	ctg Leu	atc Ile 4030	ctg Leu	aag Lys	gac Asp	cat His	ggc Gly 4035	atc Ile	cgt Arg	ctg Leu	12114
ctg Leu	gag Glu 4040	gct Ala	cag Gln	atc Ile	gcc Ala	act Thr 4045	ggg Gly	ggc Gly	atc Ile	att Ile	gac Asp 4050	ccc Pro	gag Glu	gag Glu	12159
agc Ser	cac His 4055	cgt Arg	ttg Leu	cct Pro	gtg Val	gaa Glu 4060	gtg Val	gcc Ala	tat Tyr	aag Lys	cgc Arg 4065	ggc Gly	ctc Leu	ttt Phe	12204
gat Asp	gag Glu 4070	gag Glu	atg Met	aac Asn	gag Glu	atc Ile 4075	ttg Leu	act Thr	gat Asp	ccc Pro	tca Ser 4080	gat Asp	gac Asp	acc Thr	12249
aag Lys	ggt Gly 4085	ttc Phe	ttt Phe	gac Asp	ccc Pro	aac Asn 4090	aca Thr	gag Glu	gag Glu	aac Asn	ctc Leu 4095	act Thr	tac Tyr	ctg Leu	12294

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cag Gln	ctg Leu 4100	atg Met	gag Glu	cgc Arg	tgc Cys	atc Ile 4105	act Thr	gac Asp	ccc Pro	cag Gln	acg Thr 4110	ggc Gly	ctg Leu	tgt Cys	12339
ctc Leu	ctg Leu 4115	ccc Pro	ctg Leu	aag Lys	gag Glu	aag Lys 4120	aag Lys	cgg Arg	gaa Glu	cgg Arg	aag Lys 4125	aca Thr	tcc Ser	tcc Ser	12384
aag Lys	tcc Ser 4130	tca Ser	gtg Val	cgc Arg	aag Lys	cgc Arg 4135	cgc Arg	gtg Val	gtg Val	att Ile	gtg Val 4140	gac Asp	cca Pro	gag Glu	12429
acg Thr	ggc Gly 4145	aag Lys	gag Glu	atg Met	tct Ser	gtg Val 4150	tac Tyr	gag Glu	gcc Ala	tac Tyr	cgc Arg 4155	aag Lys	ggg Gly	ctc Leu	12474
att Ile	gac Asp 4160	cac His	cag Gln	acg Thr	tac Tyr	ctg Leu 4165	gag Glu	ttg Leu	tcg Ser	gag Glu	cag Gln 4170	gag Glu	tgt Cys	gag Glu	12519
tgg Trp	gaa Glu 4175	gag Glu	atc Ile	acc Thr	atc Ile	tcc Ser 4180	tcc Ser	tca Ser	gat Asp	ggc Gly	gtc Val 4185	gtc Val	aag Lys	tct Ser	12564
atg Met	atc Ile 4190	atc Ile	gac Asp	cgc Arg	cgc Arg	tct Ser 4195	ggg Gly	cgc Arg	cag Gln	tat Tyr	gac Asp 4200	atc Ile	gac Asp	gac Asp	12609
gcc Ala	atc Ile 4205	acc Thr	aag Lys	aac Asn	ctc Leu	att Ile 4210	gac Asp	cgc Arg	tca Ser	gca Ala	ctg Leu 4215	gac Asp	cag Gln	tac Tyr	12654
cgc Arg	gct Ala 4220	ggg Gly	acg Thr	ctt Leu	tcg Ser	atc Ile 4225	act Thr	gag Glu	ttt Phe	gct Ala	gac Asp 4230	atg Met	ctc Leu	tca Ser	12699
ggc Gly	aat Asn 4235	gcc Ala	ggg Gly	ggc Gly	ttc Phe	cgt Arg 4240	tcc Ser	cgc Arg	tcc Ser	tcc Ser	tct Ser 4245	gtg Val	ggc Gly	tca Ser	12744
tct Ser	tcc Ser 4250	tcc Ser	tac Tyr	ccc Pro	atc Ile	agt Ser 4255	tct Ser	gct Ala	ggc Gly	ccc Pro	agg Arg 4260	acc Thr	cag Gln	cta Leu	12789
gcc Ala	tcc Ser 4265	tgg Trp	tct Ser	gat Asp	ccg Pro	act Thr 4270	gag Glu	gag Glu	act Thr	ggc Gly	ccc Pro 4275	gtg Val	gcc Ala	ggc Gly	12834
atc Ile	ctg Leu 4280	gac Asp	aca Thr	gag Glu	act Thr	ctg Leu 4285	gag Glu	aag Lys	gtg Val	tcc Ser	atc Ile 4290	acg Thr	gag Glu	gcc Ala	12879
atg Met	cac His 4295	cgc Arg	aac Asn	ctg Leu	gta Val	gac Asp 4300	aac Asn	atc Ile	acc Thr	ggc Gly	cag Gln 4305	cgg Arg	ctg Leu	ctg Leu	12924
gag Glu	gcc Ala 4310	caa Gln	gcc Ala	tgc Cys	acc Thr	ggg Gly 4315	ggc Gly	atc Ile	att Ile	gac Asp	ccc Pro 4320	agc Ser	act Thr	ggg Gly	12969
gag Glu	cgc Arg 4325	ttc Phe	ccg Pro	gtc Val	act Thr	gaa Glu 4330	gct Ala	gtc Val	aac Asn	aag Lys	ggc Gly 4335	ctg Leu	gtg Val	gac Asp	13014
aag Lys	atc Ile 4340	atg Met	gta Val	gac Asp	cgt Arg	atc Ile 4345	aat Asn	ctg Leu	gcc Ala	cag Gln	aag Lys 4350	gcc Ala	ttc Phe	tgt Cys	13059
ggg	ttt	gag	gac	cca	cgc	acc	aag	acc	aag	atg	tca	gct	gcc	cag	13104

Gly Phe Glu Asp Pro Arg Thr Lys Thr Lys Met Ser Ala Ala Gln  
4355 4360 4365

<210> 74  
<211> 4543  
<212> PRT  
<213> Mus musculus

Met Ser Gln His Arg Leu Arg Val Pro Glu Pro Glu Gly Leu Gly Ser  
1 5 10 15

Lys Arg Thr Ser Ser Glu Asp Asn Leu Tyr Leu Ala Val Leu Arg Ala  
20 25 30

Ser Glu Gly Lys Lys Asp Glu Arg Asp Arg Val Gln Lys Lys Thr Phe  
35 40 45

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Thr Lys Trp Val Asn Lys His Leu Ile Lys Ala Gln Arg His Ile Ser  
 50 55 60  
 Asp Leu Tyr Glu Asp Leu Arg Asp Gly His Asn Leu Ile Ser Leu Leu  
 65 70 75 80  
 Glu Val Leu Ser Gly Asp Ser Leu Pro Arg Glu Lys Gly Arg Met Arg  
 85 90 95  
 Phe His Lys Leu Gln Asn Val Gln Ile Ala Leu Asp Tyr Leu Arg His  
 100 105 110  
 Arg Gln Val Lys Leu Val Asn Ile Arg Asn Asp Asp Ile Ala Asp Gly  
 115 120 125  
 Asn Pro Lys Leu Thr Leu Gly Leu Ile Trp Thr Ile Ile Leu His Phe  
 130 135 140  
 Gln Ile Ser Asp Ile Gln Val Ser Gly Gln Ser Glu Asp Met Thr Ala  
 145 150 155 160  
 Lys Glu Lys Leu Leu Leu Trp Ser Gln Arg Met Val Glu Gly Tyr Gln  
 165 170 175  
 Gly Leu Arg Cys Asp Asn Phe Thr Thr Ser Trp Arg Asp Gly Arg Leu  
 180 185 190  
 Phe Asn Ala Ile Ile His Arg His Lys Pro Met Leu Ile Asp Met Asn  
 195 200 205  
 Lys Val Tyr Arg Gln Thr Asn Leu Glu Asn Leu Asp Gln Ala Phe Ser  
 210 215 220  
 Val Ala Glu Arg Asp Leu Gly Val Thr Arg Leu Leu Asp Pro Glu Asp  
 225 230 235 240  
 Val Asp Val Pro Gln Pro Asp Glu Lys Ser Ile Ile Thr Tyr Val Ser  
 245 250 255  
 Ser Leu Tyr Asp Ala Met Pro Arg Val Pro Gly Ala Gln Asp Gly Val  
 260 265 270  
 Arg Ala Asn Glu Leu Gln Leu Arg Trp Gln Glu Tyr Arg Glu Leu Val  
 275 280 285  
 Leu Leu Leu Leu Gln Trp Ile Arg His His Thr Ala Ala Phe Glu Glu  
 290 295 300  
 Arg Lys Phe Pro Ser Ser Phe Glu Glu Ile Glu Ile Leu Trp Cys Gln  
 305 310 315 320

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Phe Leu Lys Phe Lys<sub>325</sub> Glu Thr Glu Leu Pro<sub>330</sub> Ala Lys Glu Ala Asp<sub>335</sub> Lys  
 Asn Arg Ser Lys<sub>340</sub> Val Ile Tyr Gln Ser<sub>345</sub> Leu Glu Gly Ala Val<sub>350</sub> Gln Ala  
 Gly Gln Leu<sub>355</sub> Lys Ile Pro Pro Gly<sub>360</sub> Tyr His Pro Leu Asp<sub>365</sub> Val Glu Lys  
 Glu Trp<sub>370</sub> Gly Lys Leu His Val<sub>375</sub> Ala Ile Leu Glu Arg<sub>380</sub> Glu Lys Gln Leu  
 Arg<sub>385</sub> Ser Glu Phe Glu Arg<sub>390</sub> Leu Glu Cys Leu Gln<sub>395</sub> Arg Ile Val Ser Lys<sub>400</sub>  
 Leu Gln Met Glu Ala<sub>405</sub> Gly Leu Cys Glu Glu<sub>410</sub> Gln Leu Asn Gln Ala<sub>415</sub> Asp  
 Ala Leu Leu Gln<sub>420</sub> Ser Asp Ile Arg Leu<sub>425</sub> Leu Ala Ser Gly Lys<sub>430</sub> Val Ala  
 Gln Arg Ala<sub>435</sub> Gly Glu Val Glu Arg<sub>440</sub> Asp Leu Asp Lys Ala<sub>445</sub> Asp Gly Met  
 Ile Arg<sub>450</sub> Leu Leu Phe Asn Asp<sub>455</sub> Val Gln Thr Leu Lys<sub>460</sub> Asp Gly Arg His  
 Pro Gln Gly Glu Gln Met<sub>470</sub> Tyr Arg Arg Val Tyr<sub>475</sub> Arg Leu His Glu Arg<sub>480</sub>  
 Leu Val Ala Ile Arg<sub>485</sub> Thr Glu Tyr Asn Leu<sub>490</sub> Arg Leu Lys Ala Gly<sub>495</sub> Val  
 Gly Ala Pro Val<sub>500</sub> Thr Gln Val Thr Leu<sub>505</sub> Gln Ser Thr Gln Arg<sub>510</sub> Arg Pro  
 Glu Leu Glu<sub>515</sub> Asp Ser Thr Leu Arg<sub>520</sub> Tyr Leu Gln Asp Leu<sub>525</sub> Leu Ala Trp  
 Val Glu Glu Asn Gln Arg Arg<sub>535</sub> Ile Asp Ser Ala Glu<sub>540</sub> Trp Gly Val Asp  
 Leu Pro Ser Val Glu Ala<sub>550</sub> Gln Leu Gly Ser His<sub>555</sub> Arg Gly Met His Gln<sub>560</sub>  
 Ser Ile Glu Glu Phe<sub>565</sub> Arg Ala Lys Ile Glu<sub>570</sub> Arg Ala Arg Asn Asp<sub>575</sub> Glu  
 Ser Gln Leu Ser<sub>580</sub> Pro Ala Thr Arg Gly<sub>585</sub> Ala Tyr Arg Asp Cys<sub>590</sub> Leu Gly

Arg Leu Asp Leu Gln Tyr Ala Lys Leu Leu Asn Ser Ser Lys Ala Arg  
595 600 605

Leu Arg Ser Leu Glu Ser Leu His Gly Phe Val Ala Ala Ala Thr Lys  
610 615 620

Glu Leu Met Trp Leu Asn Glu Lys Glu Glu Glu Glu Val Gly Phe Asp  
625 630 635 640

Trp Ser Asp Arg Asn Thr Asn Met Ala Ala Lys Lys Glu Ser Tyr Ser  
645 650 655

Ala Leu Met Arg Glu Leu Glu Met Lys Glu Lys Lys Ile Lys Glu Ile  
660 665 670

Gln Asn Thr Gly Asp Arg Leu Leu Arg Glu Asp His Pro Ala Arg Pro  
675 680 685

Thr Val Glu Ser Phe Gln Ala Ala Leu Gln Thr Gln Trp Ser Trp Met  
690 695 700

Leu Gln Leu Cys Cys Cys Ile Glu Ala His Leu Lys Glu Asn Thr Ala  
705 710 715 720

Tyr Phe Gln Phe Phe Ser Asp Val Arg Glu Ala Glu Glu Gln Leu Gln  
725 730 735

Lys Leu Gln Glu Thr Leu Arg Arg Lys Tyr Ser Cys Asp Arg Thr Ile  
740 745 750

Thr Val Thr Arg Leu Glu Asp Leu Leu Gln Asp Ala Gln Asp Glu Lys  
755 760 765

Glu Gln Leu Asn Glu Tyr Lys Gly His Leu Ser Gly Leu Ala Lys Arg  
770 775 780

Ala Lys Ala Ile Val Gln Leu Lys Pro Arg Asn Pro Ala His Pro Val  
785 790 795 800

Arg Gly His Val Pro Leu Ile Ala Val Cys Asp Tyr Lys Gln Val Glu  
805 810 815

Val Thr Val His Lys Gly Asp Gln Cys Gln Leu Val Gly Pro Ala Gln  
820 825 830

Pro Ser His Trp Lys Val Leu Ser Gly Ser Ser Ser Glu Ala Ala Val  
835 840 845

Pro Ser Val Cys Phe Leu Val Pro Pro Pro Asn Gln Glu Ala Gln Glu  
850 855 860

Ala Val Ala Arg Leu Glu Ala Gln His Gln Ala Leu Val Thr Leu Trp  
Seite 348



865 870 875 880  
 His Gln Leu His Val Asp Met Lys Ser Leu Leu Ala Trp Gln Ser Leu  
 885 890 895  
 Ser Arg Asp Ile Gln Leu Ile Arg Ser Trp Ser Leu Val Thr Phe Arg  
 900 905 910  
 Thr Leu Lys Pro Glu Glu Gln Arg Gln Ala Leu Arg Asn Leu Glu Leu  
 915 920 925  
 His Tyr Gln Ala Phe Leu Arg Asp Ser Gln Asp Ala Gly Gly Phe Gly  
 930 935 940  
 Pro Glu Asp Arg Leu Val Ala Glu Arg Glu Tyr Gly Ser Cys Ser Arg  
 945 950 955 960  
 His Tyr Gln Gln Leu Leu Gln Ser Leu Glu Gln Gly Glu Gln Glu Glu  
 965 970 975  
 Ser Arg Cys Gln Arg Cys Ile Ser Glu Leu Lys Asp Ile Arg Leu Gln  
 980 985 990  
 Leu Glu Ala Cys Glu Thr Arg Thr Val His Arg Leu Arg Leu Pro Leu  
 995 1000 1005  
 Asp Lys Asp Pro Ala Arg Glu Cys Ala Gln Arg Ile Ala Glu Gln  
 1010 1015 1020  
 Gln Lys Ala Gln Ala Glu Val Glu Gly Leu Gly Lys Gly Val Ala  
 1025 1030 1035  
 Arg Leu Ser Ala Glu Ala Glu Lys Val Leu Ala Leu Pro Glu Pro  
 1040 1045 1050  
 Ser Pro Ala Ala Pro Thr Leu Arg Ser Glu Leu Glu Leu Thr Leu  
 1055 1060 1065  
 Gly Lys Leu Glu Gln Val Arg Ser Leu Ser Ala Ile Tyr Leu Glu  
 1070 1075 1080  
 Lys Leu Lys Thr Ile Ser Leu Val Ile Arg Ser Thr Gln Gly Ala  
 1085 1090 1095  
 Glu Glu Val Leu Lys Thr His Glu Glu Gln Leu Lys Glu Ala Gln  
 1100 1105 1110  
 Ala Val Pro Ala Thr Leu Gln Glu Leu Glu Ala Thr Lys Ala Ser  
 1115 1120 1125  
 Leu Lys Lys Leu Arg Ala Gln Ala Glu Ala Gln Gln Pro Val Phe  
 1130 1135 1140

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Asn	Thr	Leu	Arg	Asp	Glu	Leu	Arg	Gly	Ala	Gln	Glu	Val	Gly	Glu
	1145					1150					1155			
Arg	Leu	Gln	Gln	Arg	His	Gly	Glu	Arg	Asp	Val	Glu	Val	Glu	Arg
	1160					1165					1170			
Trp	Arg	Glu	Arg	Val	Thr	Gln	Leu	Leu	Glu	Arg	Trp	Gln	Ala	Val
	1175					1180					1185			
Leu	Ala	Gln	Thr	Asp	Val	Arg	Gln	Arg	Glu	Leu	Glu	Gln	Leu	Gly
	1190					1195					1200			
Arg	Gln	Leu	Arg	Tyr	Tyr	Arg	Glu	Ser	Ala	Asp	Pro	Leu	Ser	Ala
	1205					1210					1215			
Trp	Leu	Gln	Asp	Ala	Lys	Arg	Arg	Gln	Glu	Gln	Ile	Gln	Ala	Val
	1220					1225					1230			
Pro	Ile	Ala	Asn	Cys	Gln	Ala	Ala	Arg	Glu	Gln	Leu	Arg	Gln	Glu
	1235					1240					1245			
Lys	Ala	Leu	Leu	Glu	Glu	Ile	Glu	Arg	His	Gly	Glu	Lys	Val	Glu
	1250					1255					1260			
Glu	Cys	Gln	Lys	Phe	Ala	Lys	Gln	Tyr	Ile	Asn	Ala	Ile	Lys	Asp
	1265					1270					1275			
Tyr	Glu	Leu	Gln	Leu	Ile	Thr	Tyr	Lys	Ala	Gln	Leu	Glu	Pro	Val
	1280					1285					1290			
Ala	Ser	Pro	Ala	Lys	Lys	Pro	Lys	Val	Gln	Ser	Gly	Ser	Glu	Ser
	1295					1300					1305			
Val	Ile	Gln	Glu	Tyr	Val	Asp	Leu	Arg	Thr	Arg	Tyr	Ser	Glu	Leu
	1310					1315					1320			
Thr	Thr	Leu	Thr	Ser	Gln	Tyr	Ile	Lys	Phe	Ile	Ser	Glu	Thr	Leu
	1325					1330					1335			
Arg	Arg	Met	Glu	Glu	Glu	Glu	Arg	Leu	Ala	Glu	Gln	Gln	Arg	Ala
	1340					1345					1350			
Glu	Glu	Arg	Glu	Arg	Leu	Ala	Glu	Val	Glu	Ala	Ala	Leu	Glu	Lys
	1355					1360					1365			
Gln	Arg	Gln	Leu	Ala	Glu	Ala	His	Ala	Gln	Ala	Lys	Ala	Gln	Ala
	1370					1375					1380			
Glu	Leu	Glu	Ala	Gln	Glu	Leu	Gln	Arg	Arg	Met	Gln	Glu	Glu	Val
	1385					1390					1395			

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Ala	Arg	Arg	Glu	Glu	Ala	Ala	Val	Asp	Ala	Gln	Gln	Gln	Lys	Arg
	1400					1405					1410			
Ser	Ile	Gln	Glu	Glu	Leu	Gln	His	Leu	Arg	Gln	Ser	Ser	Glu	Ala
	1415					1420					1425			
Glu	Ile	Gln	Ala	Lys	Ala	Gln	Gln	Val	Glu	Ala	Ala	Glu	Arg	Ser
	1430					1435					1440			
Arg	Met	Arg	Ile	Glu	Glu	Glu	Ile	Arg	Val	Val	Arg	Leu	Gln	Leu
	1445					1450					1455			
Glu	Thr	Thr	Glu	Arg	Gln	Arg	Gly	Gly	Ala	Glu	Gly	Glu	Leu	Gln
	1460					1465					1470			
Ala	Leu	Arg	Ala	Arg	Ala	Glu	Glu	Ala	Glu	Ala	Gln	Lys	Arg	Gln
	1475					1480					1485			
Ala	Gln	Glu	Glu	Ala	Glu	Arg	Leu	Arg	Arg	Gln	Val	Gln	Asp	Glu
	1490					1495					1500			
Ser	Gln	Arg	Lys	Arg	Gln	Ala	Glu	Ala	Glu	Leu	Ala	Leu	Arg	Val
	1505					1510					1515			
Lys	Ala	Glu	Ala	Glu	Ala	Ala	Arg	Glu	Lys	Gln	Arg	Ala	Leu	Gln
	1520					1525					1530			
Ala	Leu	Asp	Glu	Leu	Arg	Leu	Gln	Ala	Glu	Glu	Ala	Glu	Arg	Arg
	1535					1540					1545			
Leu	Arg	Gln	Ala	Glu	Ala	Glu	Arg	Ala	Arg	Gln	Val	Gln	Val	Ala
	1550					1555					1560			
Leu	Glu	Thr	Ala	Gln	Arg	Ser	Ala	Glu	Val	Glu	Leu	Gln	Ser	Lys
	1565					1570					1575			
Arg	Ala	Ser	Phe	Ala	Glu	Lys	Thr	Ala	Gln	Leu	Glu	Arg	Thr	Leu
	1580					1585					1590			
Gln	Glu	Glu	His	Val	Thr	Val	Ala	Gln	Leu	Arg	Glu	Glu	Ala	Glu
	1595					1600					1605			
Arg	Arg	Ala	Gln	Gln	Gln	Ala	Glu	Ala	Glu	Arg	Ala	Arg	Glu	Glu
	1610					1615					1620			
Ala	Glu	Arg	Glu	Leu	Glu	Arg	Trp	Gln	Leu	Lys	Ala	Asn	Glu	Ala
	1625					1630					1635			
Leu	Arg	Leu	Arg	Leu	Gln	Ala	Glu	Glu	Val	Ala	Gln	Gln	Lys	Ser
	1640					1645					1650			

Leu Ala Gln Ala Asp Ala Glu Lys Gln Lys Glu Glu Ala Glu Arg  
 1655 1660 1665  
 Glu Ala Arg Arg Arg Gly Lys Ala Glu Glu Gln Ala Val Arg Gln  
 1670 1675 1680  
 Arg Glu Leu Ala Glu Gln Glu Leu Glu Lys Gln Arg Gln Leu Ala  
 1685 1690 1695  
 Glu Gly Thr Ala Gln Gln Arg Leu Ala Ala Glu Gln Glu Leu Ile  
 1700 1705 1710  
 Arg Leu Arg Ala Glu Thr Glu Gln Gly Glu Gln Gln Arg Gln Leu  
 1715 1720 1725  
 Leu Glu Glu Glu Leu Ala Arg Leu Gln His Glu Ala Thr Ala Ala  
 1730 1735 1740  
 Thr Gln Lys Arg Gln Glu Leu Glu Ala Glu Leu Ala Lys Val Arg  
 1745 1750 1755  
 Ala Glu Met Glu Val Leu Leu Ala Ser Lys Ala Arg Ala Glu Glu  
 1760 1765 1770  
 Glu Ser Arg Ser Thr Ser Glu Lys Ser Lys Gln Arg Leu Glu Ala  
 1775 1780 1785  
 Glu Ala Gly Arg Phe Arg Glu Leu Ala Glu Glu Ala Ala Arg Leu  
 1790 1795 1800  
 Arg Ala Leu Ala Glu Glu Ala Lys Arg Gln Arg Gln Leu Ala Glu  
 1805 1810 1815  
 Glu Asp Ala Ala Arg Gln Arg Ala Glu Ala Glu Arg Val Leu Thr  
 1820 1825 1830  
 Glu Lys Leu Ala Ala Ile Ser Glu Ala Thr Arg Leu Lys Thr Glu  
 1835 1840 1845  
 Ala Glu Ile Ala Leu Lys Glu Lys Glu Ala Glu Asn Glu Arg Leu  
 1850 1855 1860  
 Arg Arg Leu Ala Glu Asp Glu Ala Phe Gln Arg Arg Arg Leu Glu  
 1865 1870 1875  
 Glu Gln Ala Ala Leu His Lys Ala Asp Ile Glu Glu Arg Leu Ala  
 1880 1885 1890  
 Gln Leu Arg Lys Ala Ser Glu Ser Glu Leu Glu Arg Gln Lys Gly  
 1895 1900 1905  
 Leu Val Glu Asp Thr Leu Arg Gln Arg Arg Gln Val Glu Glu Glu  
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1910														
Ile	Met	Ala	Leu	Lys	Val	Ser	Phe	Glu	Lys	Ala	Ala	Ala	Gly	Lys
	1925					1930					1935			
Ala	Glu	Leu	Glu	Leu	Glu	Leu	Gly	Arg	Ile	Arg	Ser	Asn	Ala	Glu
	1940					1945					1950			
Asp	Thr	Met	Arg	Ser	Lys	Glu	Gln	Ala	Glu	Leu	Glu	Ala	Ala	Arg
	1955					1960					1965			
Gln	Arg	Gln	Leu	Ala	Ala	Glu	Glu	Glu	Gln	Arg	Arg	Arg	Glu	Ala
	1970					1975					1980			
Glu	Glu	Arg	Val	Gln	Arg	Ser	Leu	Ala	Ala	Glu	Glu	Glu	Ala	Ala
	1985					1990					1995			
Arg	Gln	Arg	Lys	Val	Ala	Leu	Glu	Glu	Val	Glu	Arg	Leu	Lys	Ala
	2000					2005					2010			
Lys	Val	Glu	Glu	Ala	Arg	Arg	Leu	Arg	Glu	Arg	Ala	Glu	Gln	Glu
	2015					2020					2025			
Ser	Ala	Arg	Gln	Leu	Gln	Leu	Ala	Gln	Glu	Ala	Ala	Gln	Lys	Arg
	2030					2035					2040			
Leu	Gln	Ala	Glu	Glu	Lys	Ala	His	Ala	Phe	Val	Val	Gln	Gln	Arg
	2045					2050					2055			
Glu	Glu	Glu	Leu	Gln	Gln	Thr	Leu	Gln	Gln	Glu	Gln	Asn	Met	Leu
	2060					2065					2070			
Asp	Arg	Leu	Arg	Ser	Glu	Ala	Glu	Ala	Ala	Arg	Arg	Ala	Ala	Glu
	2075					2080					2085			
Glu	Ala	Glu	Glu	Ala	Arg	Glu	Gln	Ala	Glu	Arg	Glu	Ala	Ala	Gln
	2090					2095					2100			
Ser	Arg	Lys	Gln	Val	Glu	Glu	Ala	Glu	Arg	Leu	Lys	Gln	Ser	Ala
	2105					2110					2115			
Glu	Glu	Gln	Ala	Gln	Ala	Gln	Ala	Gln	Ala	Gln	Ala	Ala	Ala	Glu
	2120					2125					2130			
Lys	Leu	Arg	Lys	Glu	Ala	Glu	Gln	Glu	Ala	Ala	Arg	Arg	Ala	Gln
	2135					2140					2145			
Ala	Glu	Gln	Ala	Ala	Leu	Lys	Gln	Lys	Gln	Ala	Ala	Asp	Ala	Glu
	2150					2155					2160			
Met	Glu	Lys	His	Lys	Lys	Phe	Ala	Glu	Gln	Thr	Leu	Arg	Gln	Lys
	2165					2170					2175			

Ala	Gln	Val	Glu	Gln	Glu	Leu	Thr	Thr	Leu	Arg	Leu	Gln	Leu	Glu
	2180					2185					2190			
Glu	Thr	Asp	His	Gln	Lys	Ser	Ile	Leu	Asp	Glu	Glu	Leu	Gln	Arg
	2195					2200					2205			
Leu	Lys	Ala	Glu	Val	Thr	Glu	Ala	Ala	Arg	Gln	Arg	Ser	Gln	Val
	2210					2215					2220			
Glu	Glu	Glu	Leu	Phe	Ser	Val	Arg	Val	Gln	Met	Glu	Glu	Leu	Gly
	2225					2230					2235			
Lys	Leu	Lys	Ala	Arg	Ile	Glu	Ala	Glu	Asn	Arg	Ala	Leu	Ile	Leu
	2240					2245					2250			
Arg	Asp	Lys	Asp	Asn	Thr	Gln	Arg	Phe	Leu	Glu	Glu	Glu	Ala	Glu
	2255					2260					2265			
Lys	Met	Lys	Gln	Val	Ala	Glu	Glu	Ala	Ala	Arg	Leu	Ser	Val	Ala
	2270					2275					2280			
Ala	Gln	Glu	Ala	Ala	Arg	Leu	Arg	Gln	Leu	Ala	Glu	Glu	Asp	Leu
	2285					2290					2295			
Ala	Gln	Gln	Arg	Ala	Leu	Ala	Glu	Lys	Met	Leu	Lys	Glu	Lys	Met
	2300					2305					2310			
Gln	Ala	Val	Gln	Glu	Ala	Thr	Arg	Leu	Lys	Ala	Glu	Ala	Glu	Leu
	2315					2320					2325			
Leu	Gln	Gln	Gln	Lys	Glu	Leu	Ala	Gln	Glu	Gln	Ala	Arg	Arg	Leu
	2330					2335					2340			
Gln	Glu	Asp	Lys	Glu	Gln	Met	Ala	Gln	Gln	Leu	Val	Glu	Glu	Thr
	2345					2350					2355			
Gln	Gly	Phe	Gln	Arg	Thr	Leu	Glu	Ala	Glu	Arg	Gln	Arg	Gln	Leu
	2360					2365					2370			
Glu	Met	Ser	Ala	Glu	Ala	Glu	Arg	Leu	Lys	Leu	Arg	Met	Val	Glu
	2375					2380					2385			
Met	Ser	Arg	Ala	Gln	Ala	Arg	Ala	Glu	Glu	Asp	Ala	Gln	Arg	Phe
	2390					2395					2400			
Arg	Lys	Gln	Ala	Glu	Glu	Ile	Gly	Glu	Lys	Leu	His	Arg	Thr	Glu
	2405					2410					2415			
Leu	Ala	Thr	Gln	Glu	Lys	Val	Thr	Leu	Val	Gln	Thr	Leu	Glu	Ile
	2420					2425					2430			

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Gln	Arg	Gln	Gln	Ser	Asp	His	Asp	Ala	Glu	Arg	Leu	Arg	Glu	Ala
	2435					2440					2445			
Ile	Ala	Glu	Leu	Glu	Arg	Glu	Lys	Glu	Lys	Leu	Lys	Gln	Glu	Ala
	2450					2455					2460			
Lys	Leu	Leu	Gln	Leu	Lys	Ser	Glu	Glu	Met	Gln	Thr	Val	Gln	Gln
	2465					2470					2475			
Glu	Gln	Ile	Leu	Gln	Glu	Thr	Gln	Ala	Leu	Gln	Lys	Ser	Phe	Leu
	2480					2485					2490			
Ser	Glu	Lys	Asp	Ser	Leu	Leu	Gln	Arg	Glu	Arg	Phe	Ile	Glu	Gln
	2495					2500					2505			
Glu	Lys	Ala	Lys	Leu	Glu	Gln	Leu	Phe	Gln	Asp	Glu	Val	Ala	Lys
	2510					2515					2520			
Ala	Lys	Gln	Leu	Arg	Glu	Glu	Gln	Gln	Arg	Gln	Gln	Gln	Gln	Met
	2525					2530					2535			
Glu	Gln	Glu	Lys	Gln	Glu	Leu	Met	Ala	Ser	Met	Glu	Glu	Ala	Arg
	2540					2545					2550			
Arg	Arg	Gln	Arg	Glu	Ala	Glu	Glu	Gly	Val	Arg	Arg	Lys	Gln	Glu
	2555					2560					2565			
Glu	Leu	Gln	His	Leu	Glu	Gln	Gln	Arg	Gln	Gln	Gln	Glu	Lys	Leu
	2570					2575					2580			
Leu	Ala	Glu	Glu	Asn	Gln	Arg	Leu	Arg	Glu	Arg	Leu	Gln	Arg	Leu
	2585					2590					2595			
Glu	Glu	Glu	His	Arg	Ala	Ala	Leu	Ala	His	Ser	Glu	Ile	Ala	Thr
	2600					2605					2610			
Thr	Gln	Ala	Ala	Ser	Thr	Lys	Ala	Leu	Pro	Asn	Gly	Arg	Asp	Ala
	2615					2620					2625			
Pro	Asp	Gly	Pro	Ser	Val	Glu	Ala	Glu	Pro	Glu	Tyr	Thr	Phe	Glu
	2630					2635					2640			
Gly	Leu	Arg	Gln	Lys	Val	Pro	Ala	Gln	Gln	Leu	Gln	Glu	Ala	Gly
	2645					2650					2655			
Ile	Leu	Ser	Gln	Glu	Glu	Leu	Gln	Arg	Leu	Ala	Gln	Gly	His	Thr
	2660					2665					2670			
Thr	Val	Ala	Glu	Leu	Thr	Gln	Arg	Glu	Asp	Val	Tyr	Arg	Tyr	Leu
	2675					2680					2685			

Lys Gly Arg Ser Ser Ile Ala Gly Leu Leu Leu Lys Pro Thr Asn  
 2690 2695 2700  
  
 Glu Lys Leu Ser Val Tyr Thr Ala Leu Gln Arg Gln Leu Leu Ser  
 2705 2710 2715  
  
 Pro Gly Thr Ala Leu Ile Leu Leu Glu Ala Gln Ala Ala Ser Gly  
 2720 2725 2730  
  
 Phe Leu Leu Asp Pro Val Arg Asn Arg Arg Leu Thr Val Asn Glu  
 2735 2740 2745  
  
 Ala Val Lys Glu Gly Val Val Gly Pro Glu Leu His His Lys Leu  
 2750 2755 2760  
  
 Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Lys Asp Pro Tyr Thr  
 2765 2770 2775  
  
 Gly Glu Gln Ile Ser Leu Phe Gln Ala Met Lys Lys Asp Leu Ile  
 2780 2785 2790  
  
 Val Arg Asp His Gly Val Arg Leu Leu Glu Ala Gln Ile Ala Thr  
 2795 2800 2805  
  
 Gly Gly Ile Ile Asp Pro Val His Ser His Arg Val Pro Val Asp  
 2810 2815 2820  
  
 Val Ala Tyr Lys Arg Gly Tyr Phe Asp Glu Glu Met Asn Arg Ile  
 2825 2830 2835  
  
 Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn  
 2840 2845 2850  
  
 Thr His Glu Asn Leu Thr Tyr Leu Gln Leu Leu Glu Arg Cys Val  
 2855 2860 2865  
  
 Glu Asp Pro Glu Thr Gly Leu Arg Leu Leu Pro Leu Thr Asp Lys  
 2870 2875 2880  
  
 Ala Ala Lys Gly Gly Glu Leu Val Tyr Thr Asp Thr Glu Ala Arg  
 2885 2890 2895  
  
 Asp Val Phe Glu Lys Ala Thr Val Ser Ala Pro Phe Gly Lys Phe  
 2900 2905 2910  
  
 Gln Gly Arg Thr Val Thr Ile Trp Glu Ile Ile Asn Ser Glu Tyr  
 2915 2920 2925  
  
 Phe Thr Ala Glu Gln Arg Arg Asp Leu Leu Gln Gln Phe Arg Thr  
 2930 2935 2940  
  
 Gly His Ile Thr Val Glu Lys Ile Ile Lys Ile Val Ile Thr Val  
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2945

2950

2955

Val Glu Glu His Glu Arg Lys Gly Gln Leu Cys Phe Glu Gly Leu  
2960 2965 2970

Arg Ala Leu Val Pro Ala Ala Glu Leu Leu Asp Ser Gly Val Ile  
2975 2980 2985

Ser His Glu Leu Tyr Gln Gln Leu Gln Arg Gly Glu Arg Ser Val  
2990 2995 3000

Arg Glu Val Ala Glu Ala Asp Ser Val Arg Gln Ala Leu Arg Gly  
3005 3010 3015

Thr Asn Val Ile Ala Gly Val Trp Leu Glu Glu Ala Gly Gln Lys  
3020 3025 3030

Leu Ser Ile Tyr Glu Ala Leu Lys Lys Asp Leu Leu Gln Pro Glu  
3035 3040 3045

Val Ala Val Ala Leu Leu Glu Ala Gln Ala Gly Thr Gly His Ile  
3050 3055 3060

Ile Asp Pro Ala Thr Ser Ala Arg Leu Thr Val Asp Glu Ala Val  
3065 3070 3075

Arg Ala Gly Leu Val Gly Pro Glu Leu His Glu Lys Leu Leu Ser  
3080 3085 3090

Ala Glu Lys Ala Val Thr Gly Tyr Arg Asp Pro Tyr Ser Gly Gln  
3095 3100 3105

Ser Val Ser Leu Phe Gln Ala Leu Lys Lys Gly Leu Ile Pro Arg  
3110 3115 3120

Glu Gln Gly Leu Arg Leu Leu Asp Ala Gln Leu Ser Thr Gly Gly  
3125 3130 3135

Ile Val Asp Pro Ser Lys Ser His Arg Val Pro Leu Asp Val Ala  
3140 3145 3150

Tyr Ala Arg Gly Tyr Leu Asp Lys Glu Thr Asn Arg Ala Leu Thr  
3155 3160 3165

Ser Pro Arg Asp Asp Ala Arg Val Tyr His Asp Pro Ser Thr Gln  
3170 3175 3180

Glu Pro Val Thr Tyr Ser Gln Leu Gln Gln Arg Cys Arg Ser Asp  
3185 3190 3195

Gln Leu Thr Gly Leu Ser Leu Leu Pro Leu Ser Glu Lys Ala Val  
3200 3205 3210

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Arg	Ala	Arg	Gln	Glu	Glu	Val	Tyr	Ser	Glu	Leu	Gln	Ala	Arg	Glu
	3215					3220					3225			
Thr	Leu	Glu	Gln	Ala	Lys	Val	Glu	Val	Pro	Val	Gly	Ser	Phe	Lys
	3230					3235					3240			
Gly	Arg	Ala	Met	Thr	Val	Trp	Glu	Leu	Ile	Ser	Ser	Glu	Tyr	Phe
	3245					3250					3255			
Thr	Glu	Glu	Gln	Arg	Gln	Glu	Leu	Leu	Arg	Gln	Phe	Arg	Thr	Gly
	3260					3265					3270			
Lys	Val	Thr	Val	Glu	Lys	Val	Ile	Lys	Ile	Val	Ile	Thr	Ile	Val
	3275					3280					3285			
Glu	Glu	Val	Glu	Thr	Arg	Arg	Gln	Glu	Arg	Leu	Ser	Phe	Ser	Gly
	3290					3295					3300			
Leu	Arg	Ala	Pro	Val	Pro	Ala	Ser	Glu	Leu	Leu	Asp	Ala	Lys	Ile
	3305					3310					3315			
Leu	Ser	Arg	Ala	Gln	Phe	Asp	Gln	Leu	Lys	Asp	Gly	Lys	Thr	Ser
	3320					3325					3330			
Val	Lys	Glu	Leu	Ser	Glu	Val	Gly	Ser	Val	Arg	Thr	Leu	Leu	Gln
	3335					3340					3345			
Gly	Ser	Gly	Cys	Leu	Ala	Gly	Ile	Tyr	Leu	Glu	Asp	Ser	Lys	Glu
	3350					3355					3360			
Lys	Val	Thr	Ile	Tyr	Glu	Ala	Met	Arg	Arg	Gly	Leu	Leu	Arg	Pro
	3365					3370					3375			
Ser	Thr	Ala	Thr	Leu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe
	3380					3385					3390			
Leu	Val	Asp	Pro	Val	Arg	Asn	Gln	Arg	Leu	Tyr	Val	His	Glu	Ala
	3395					3400					3405			
Val	Lys	Ala	Gly	Val	Val	Gly	Pro	Glu	Leu	His	Glu	Lys	Leu	Leu
	3410					3415					3420			
Ser	Ala	Glu	Lys	Ala	Val	Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	Gly
	3425					3430					3435			
Asn	Thr	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	Val	Leu
	3440					3445					3450			
Arg	Asp	His	Ala	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Val	Ala	Thr	Gly
	3455					3460					3465			

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Gly	Ile	Ile	Asp	Pro	Val	His	Ser	His	Arg	Leu	Pro	Val	Asp	Val
3470						3475					3480			
Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Asn	Arg	Val	Leu
3485						3490					3495			
Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr
3500						3505					3510			
His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Glu
3515						3520					3525			
Asp	Pro	Glu	Thr	Gly	Leu	Arg	Leu	Leu	Pro	Leu	Lys	Gly	Ala	Glu
3530						3535					3540			
Lys	Thr	Glu	Val	Val	Glu	Thr	Thr	Gln	Val	Tyr	Thr	Glu	Glu	Glu
3545						3550					3555			
Thr	Arg	Arg	Ala	Phe	Glu	Glu	Thr	Gln	Ile	Asp	Ile	Pro	Gly	Gly
3560						3565					3570			
Gly	Ser	His	Gly	Gly	Ser	Ser	Met	Ser	Leu	Trp	Glu	Val	Met	Gln
3575						3580					3585			
Ser	Asn	Met	Ile	Pro	Glu	Asp	Gln	Arg	Ala	Arg	Leu	Met	Ala	Asp
3590						3595					3600			
Phe	Gln	Ala	Gly	Arg	Val	Thr	Lys	Glu	Arg	Met	Ile	Ile	Ile	Ile
3605						3610					3615			
Ile	Glu	Ile	Ile	Glu	Lys	Thr	Glu	Ile	Ile	Arg	Gln	Gln	Asn	Leu
3620						3625					3630			
Ala	Ser	Tyr	Asp	Tyr	Val	Arg	Arg	Arg	Leu	Thr	Ala	Glu	Asp	Leu
3635						3640					3645			
Tyr	Glu	Ala	Arg	Ile	Ile	Ser	Leu	Glu	Thr	Tyr	Asn	Leu	Phe	Arg
3650						3655					3660			
Glu	Gly	Thr	Lys	Asn	Leu	Arg	Glu	Val	Leu	Glu	Met	Glu	Ser	Ala
3665						3670					3675			
Trp	Arg	Tyr	Leu	Tyr	Gly	Thr	Gly	Ala	Val	Ala	Gly	Val	Tyr	Leu
3680						3685					3690			
Pro	Gly	Ser	Arg	Gln	Thr	Leu	Thr	Ile	Tyr	Gln	Ala	Leu	Lys	Lys
3695						3700					3705			
Gly	Leu	Leu	Ser	Ala	Glu	Val	Ala	Arg	Leu	Leu	Leu	Glu	Ala	Gln
3710						3715					3720			

Ala	Ala	Thr	Gly	Phe	Leu	Leu	Asp	Pro	Val	Lys	Gly	Glu	Arg	Leu
	3725					3730					3735			
Thr	Val	Asp	Glu	Ala	Val	Arg	Lys	Gly	Leu	Val	Gly	Pro	Glu	Leu
	3740					3745					3750			
His	Asp	Arg	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Arg
	3755					3760					3765			
Asp	Pro	Tyr	Thr	Glu	Gln	Thr	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys
	3770					3775					3780			
Lys	Glu	Leu	Ile	Pro	Ala	Glu	Glu	Ala	Leu	Arg	Leu	Leu	Asp	Ala
	3785					3790					3795			
Gln	Leu	Ala	Thr	Gly	Gly	Ile	Val	Asp	Pro	Arg	Leu	Gly	Phe	His
	3800					3805					3810			
Leu	Pro	Leu	Glu	Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Leu	Asn	Lys	Asp
	3815					3820					3825			
Thr	His	Asp	Gln	Leu	Ser	Glu	Pro	Ser	Glu	Val	Arg	Ser	Tyr	Val
	3830					3835					3840			
Asp	Pro	Ser	Thr	Asp	Glu	Arg	Leu	Ser	Tyr	Thr	Gln	Leu	Leu	Lys
	3845					3850					3855			
Arg	Cys	Arg	Arg	Asp	Asp	Pro	Ser	Gly	Gln	Met	Leu	Leu	Leu	Leu
	3860					3865					3870			
Ser	Asp	Ala	Arg	Lys	Leu	Thr	Phe	Arg	Gly	Leu	Arg	Lys	Gln	Ile
	3875					3880					3885			
Thr	Val	Glu	Glu	Leu	Val	Arg	Ser	Gln	Val	Met	Asp	Glu	Ala	Thr
	3890					3895					3900			
Ala	Leu	Gln	Leu	Gln	Glu	Gly	Leu	Thr	Ser	Ile	Glu	Glu	Val	Thr
	3905					3910					3915			
Lys	Asn	Leu	Gln	Lys	Phe	Leu	Glu	Gly	Thr	Ser	Cys	Ile	Ala	Gly
	3920					3925					3930			
Val	Phe	Val	Asp	Ala	Thr	Lys	Glu	Arg	Leu	Ser	Val	Tyr	Gln	Ala
	3935					3940					3945			
Met	Lys	Lys	Gly	Ile	Ile	Arg	Pro	Gly	Thr	Ala	Phe	Glu	Leu	Leu
	3950					3955					3960			
Glu	Ala	Gln	Ala	Ala	Thr	Gly	Tyr	Val	Ile	Asp	Pro	Ile	Lys	Gly
	3965					3970					3975			
Leu	Lys	Leu	Thr	Val	Glu	Glu	Ala	Val	Arg	Met	Gly	Ile	Val	Gly

3980

3985

3990

Pro Glu Phe Lys Asp Lys Leu Leu Ser Ala Glu Arg Ala Val Thr  
 3995 4000 4005  
 Gly Tyr Lys Asp Pro Tyr Ser Gly Lys Leu Ile Ser Leu Phe Gln  
 4010 4015 4020  
 Ala Met Lys Lys Gly Leu Ile Leu Lys Asp His Gly Ile Arg Leu  
 4025 4030 4035  
 Leu Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Glu Glu  
 4040 4045 4050  
 Ser His Arg Leu Pro Val Glu Val Ala Tyr Lys Arg Gly Leu Phe  
 4055 4060 4065  
 Asp Glu Glu Met Asn Glu Ile Leu Thr Asp Pro Ser Asp Asp Thr  
 4070 4075 4080  
 Lys Gly Phe Phe Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu  
 4085 4090 4095  
 Gln Leu Met Glu Arg Cys Ile Thr Asp Pro Gln Thr Gly Leu Cys  
 4100 4105 4110  
 Leu Leu Pro Leu Lys Glu Lys Lys Arg Glu Arg Lys Thr Ser Ser  
 4115 4120 4125  
 Lys Ser Ser Val Arg Lys Arg Arg Val Val Ile Val Asp Pro Glu  
 4130 4135 4140  
 Thr Gly Lys Glu Met Ser Val Tyr Glu Ala Tyr Arg Lys Gly Leu  
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 Ile Asp His Gln Thr Tyr Leu Glu Leu Ser Glu Gln Glu Cys Glu  
 4160 4165 4170  
 Trp Glu Glu Ile Thr Ile Ser Ser Ser Asp Gly Val Val Lys Ser  
 4175 4180 4185  
 Met Ile Ile Asp Arg Arg Ser Gly Arg Gln Tyr Asp Ile Asp Asp  
 4190 4195 4200  
 Ala Ile Thr Lys Asn Leu Ile Asp Arg Ser Ala Leu Asp Gln Tyr  
 4205 4210 4215  
 Arg Ala Gly Thr Leu Ser Ile Thr Glu Phe Ala Asp Met Leu Ser  
 4220 4225 4230  
 Gly Asn Ala Gly Gly Phe Arg Ser Arg Ser Ser Ser Val Gly Ser  
 4235 4240 4245

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Ser Ser Ser Tyr Pro Ile Ser Ser Ala Gly Pro Arg Thr Gln Leu  
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Ala Ser Trp Ser Asp Pro Thr Glu Glu Thr Gly Pro Val Ala Gly  
4265 4270 4275

Ile Leu Asp Thr Glu Thr Leu Glu Lys Val Ser Ile Thr Glu Ala  
4280 4285 4290

Met His Arg Asn Leu Val Asp Asn Ile Thr Gly Gln Arg Leu Leu  
4295 4300 4305

Glu Ala Gln Ala Cys Thr Gly Gly Ile Ile Asp Pro Ser Thr Gly  
4310 4315 4320

Glu Arg Phe Pro Val Thr Glu Ala Val Asn Lys Gly Leu Val Asp  
4325 4330 4335

Lys Ile Met Val Asp Arg Ile Asn Leu Ala Gln Lys Ala Phe Cys  
4340 4345 4350

Gly Phe Glu Asp Pro Arg Thr Lys Thr Lys Met Ser Ala Ala Gln  
4355 4360 4365

Ala Leu Lys Lys Gly Trp Leu Tyr Tyr Glu Ala Gly Gln Arg Phe  
4370 4375 4380

Leu Glu Val Gln Tyr Leu Thr Gly Gly Leu Ile Glu Pro Asp Thr  
4385 4390 4395

Pro Gly Arg Val Ser Leu Asp Glu Ala Leu Gln Arg Gly Thr Val  
4400 4405 4410

Asp Ala Arg Thr Ala Gln Lys Leu Arg Asp Val Ser Ala Tyr Ser  
4415 4420 4425

Lys Tyr Leu Thr Cys Pro Lys Thr Lys Leu Lys Ile Ser Tyr Lys  
4430 4435 4440

Asp Ala Leu Asp Arg Ser Met Val Glu Glu Gly Thr Gly Leu Arg  
4445 4450 4455

Leu Leu Glu Ala Ala Ala Gln Ser Ser Lys Gly Tyr Tyr Ser Pro  
4460 4465 4470

Tyr Ser Val Ser Gly Ser Gly Ser Thr Ala Gly Ser Arg Thr Gly  
4475 4480 4485

Ser Arg Thr Gly Ser Arg Ala Gly Ser Arg Arg Gly Ser Phe Asp  
4490 4495 4500

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Ala Thr Gly Ser Gly Phe Ser Met Thr Phe Ser Ser Ser Tyr  
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Ser Ser Ser Gly Tyr Gly Arg Arg Tyr Ala Ser Gly Pro Ser Ala  
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Ser Leu Gly Gly Pro Glu Ser Ala Val Ala  
4535 4540

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Leu Pro Thr Ser Ile Pro Asp Glu Leu Thr Leu Tyr Phe Glu Asn  
20 25 30  
cgc cga agc tct ggg ggt ggg cct gtg gcg agt tgg cag aga ctc ggc 144  
Arg Arg Ser Ser Gly Gly Gly Pro Val Ala Ser Trp Gln Arg Leu Gly  
35 40 45  
cgc ggg ggc atc ctc acc ttt gag gag cct gca gat gcc gcg agg gtc 192  
Arg Gly Gly Ile Leu Thr Phe Glu Glu Pro Ala Asp Ala Ala Arg Val  
50 55 60  
ctg gcc tgg ccg gag cac act ctg cag ggg gct cgg ctg agc ctg cgg 240  
Leu Ala Trp Pro Glu His Thr Leu Gln Gly Ala Arg Leu Ser Leu Arg  
65 70 75 80  
cca gcc cca cca cgc gcc tct gcg cgc ctg ctg ctc caa gga ttg cct 288  
Pro Ala Pro Pro Arg Ala Ser Ala Arg Leu Leu Leu Gln Gly Leu Pro  
85 90 95  
cct ggc acc aca ccc cag cta ctg gag cag tat gtc caa gct ctg ctt 336  
Pro Gly Thr Thr Pro Gln Leu Leu Glu Gln Tyr Val Gln Ala Leu Leu  
100 105 110  
tgt gcc acc ggg cac ccg gag cag cct tgc cac gcg ctg gcc agt ccc 384  
Cys Ala Thr Gly His Pro Glu Gln Pro Cys His Ala Leu Ala Ser Pro  
115 120 125  
cga cca gat cgc gcc ctg gtg caa ctg ccc aag ccc ctt tct gag gca 432  
Arg Pro Asp Arg Ala Leu Val Gln Leu Pro Lys Pro Leu Ser Glu Ala  
130 135 140  
gaa gct gga gtc ctg gag gtg cac tcc cgg gcc ctg ggc ctg gag ggg 480  
Glu Ala Gly Val Leu Glu Val His Ser Arg Ala Leu Gly Leu Glu Gly  
145 150 155 160  
gct gag gtc tcc ctg gcc tgg gtg ccc cag gcc cgg gca gtg cgt gtg 528  
Ala Glu Val Ser Leu Ala Trp Val Pro Gln Ala Arg Ala Val Arg Val  
165 170 175  
gta gga ggc gac ccc cct gca gac ctg ctg ctg ctg gag ctg tac ctg 576

Val	Gly	Gly	Asp	Pro	Pro	Ala	Asp	Leu	Leu	Leu	Leu	Glu	Leu	Tyr	Leu	
			180					185						190		
gag	aat	gag	cgc	cgc	agc	ggc	ggg	ggg	ccc	ctg	gag	ggc	atg	cac	agc	624
Glu	Asn	Glu	Arg	Arg	Ser	Gly	Gly	Gly	Pro	Leu	Glu	Gly	Met	His	Ser	
		195				200						205				
ctt	cca	ggg	cac	ctg	ggc	acc	gtg	gtc	tcc	ttc	cag	cac	tgg	cgt	gtg	672
Leu	Pro	Gly	His	Leu	Gly	Thr	Val	Val	Ser	Phe	Gln	His	Trp	Arg	Val	
	210					215					220					
gcc	gag	cgg	gtg	ctg	cag	cgg	gac	cac	cgg	ctg	cag	ggc	tca	gag	ctg	720
Ala	Glu	Arg	Val	Leu	Gln	Arg	Asp	His	Arg	Leu	Gln	Gly	Ser	Glu	Leu	
225					230					235					240	
aaa	ctt	gtc	cct	cac	tac	gat	gtc	ctg	gag	cct	gag	gag	ctt	gct	gag	768
Lys	Leu	Val	Pro	His	Tyr	Asp	Val	Leu	Glu	Pro	Glu	Glu	Leu	Ala	Glu	
				245					250					255		
gac	gct	ggt	gaa	gga	agc	tgc	ccg	ggc	gac	ctg	ggg	cct	ggg	gcc	ccc	816
Asp	Ala	Gly	Glu	Gly	Ser	Cys	Pro	Gly	Asp	Leu	Gly	Pro	Gly	Ala	Pro	
			260					265					270			
agg	cac	gtt	ctc	cag	gag	gca	gga	gga	cca	gca	agg	gaa	cag	cat	tat	864
Arg	His	Val	Leu	Gln	Glu	Ala	Gly	Gly	Pro	Ala	Arg	Glu	Gln	His	Tyr	
		275					280					285				
gct	ggg	gat	gtc	aca	ctg	ggc	tct	gag	gag	gcg	cca	ggg	cag	tca	gga	912
Ala	Gly	Asp	Val	Thr	Leu	Gly	Ser	Glu	Glu	Ala	Pro	Gly	Gln	Ser	Gly	
	290					295					300					
gcc	tct	ctg	agc	aca	ggc	cct	caa	tgg	gac	agc	tcg	tcg	ctg	gca	ccg	960
Ala	Ser	Leu	Ser	Thr	Gly	Pro	Gln	Trp	Asp	Ser	Ser	Ser	Leu	Ala	Pro	
305					310					315					320	
gct	ggg	cca	gtc	agc	tca	ggg	ccc	tgg	ggg	tct	tca	gaa	gag	gag	gga	1008
Ala	Gly	Pro	Val	Ser	Ser	Gly	Pro	Trp	Gly	Ser	Ser	Glu	Glu	Glu	Gly	
				325					330					335		
ctg	ggg	agc	cga	agg	act	gtg	ggg	tct	ccg	gac	cca	gtg	gag	atc	gcc	1056
Leu	Gly	Ser	Arg	Arg	Thr	Val	Gly	Ser	Pro	Asp	Pro	Val	Glu	Ile	Ala	
			340					345					350			
atg	cgc	tct	tca	gag	cag	gtg	gcg	tca	gtg	agc	cag	ggg	ccc	gcg	ggg	1104
Met	Arg	Ser	Ser	Glu	Gln	Val	Ala	Ser	Val	Ser	Gln	Gly	Pro	Ala	Gly	
		355					360					365				
tca	ccg	ggg	cag	cag	ggc	ctg	gtg	gag	atg	gtg	ctg	gca	atg	gag	ccg	1152
Ser	Pro	Gly	Gln	Gln	Gly	Leu	Val	Glu	Met	Val	Leu	Ala	Met	Glu	Pro	
	370					375					380					
gga	gca	atg	cgc	ttc	att	cag	ctc	tat	cat	gag	gac	ctt	ctc	acc	ggc	1200
Gly	Ala	Met	Arg	Phe	Ile	Gln	Leu	Tyr	His	Glu	Asp	Leu	Leu	Thr	Gly	
385					390					395					400	
ctg	gga	gat	gtg	gcc	ctc	ttc	cca	ctc	gag	ggc	tca	gat	acg	act	gga	1248
Leu	Gly	Asp	Val	Ala	Leu	Phe	Pro	Leu	Glu	Gly	Ser	Asp	Thr	Thr	Gly	
				405					410					415		
ttc	cgg	ctc	tgc	gga	gcc	ctg	gcc	cca	tgc	cgg	gca	gcc	aag	gag	ttt	1296
Phe	Arg	Leu	Cys	Gly	Ala	Leu	Ala	Pro	Cys	Arg	Ala	Ala	Lys	Glu	Phe	
			420					425					430			
ctg	caa	agt	ctg	ctg	ggc	agc	gtt	agc	tgt	cac	atg	ctg	agc	ctg	aag	1344
Leu	Gln	Ser	Leu	Leu	Gly	Ser	Val	Ser	Cys	His	Met	Leu	Ser	Leu	Lys	
		435					440					445				
cac	cca	ggc	agt	gcc	agg	ttc	ctg	ctg	agc	cca	gag	ggg	cag	cac	ctt	1392
His	Pro	Gly	Ser	Ala	Arg	Phe	Leu	Leu	Ser	Pro	Glu	Gly	Gln	His	Leu	



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450					455					460					465					
ctc Leu 465	cgg Arg	gag Glu	ctg Leu	gag Glu	gca Ala 470	cag Gln	ttc Phe	cag Gln	tgc Cys	gtc Val 475	ttc Phe	agg Arg	aca Thr	gag Glu	cat His 480	1440				
ctg Leu	gct Ala	ggg Gly	gcc Ala	gtc Val 485	ctg Leu	gac Asp	atg Met	gac Asp	ctg Leu 490	gaa Glu	gag Glu	gtg Val	ggc Gly	ccc Pro 495	act Thr	1488				
gag Glu	gcc Ala	ctg Leu	cag Gln 500	gcc Ala	ctc Leu	cct Pro	ggc Gly	ctc Leu 505	tcc Ser	tcc Ser	acc Thr	cct Pro	tgg Trp 510	cct Pro	cca Pro	1536				
gac Asp	gat Asp	ccg Pro 515	gac Asp	cgt Arg	gac Asp	cag Gln	gag Glu 520	aac Asn	tca Ser	ggc Gly	ctg Leu	gag Glu 525	gag Glu	gtc Val	cga Arg	1584				
gag Glu	ctg Leu 530	ctg Leu	gcc Ala	act Thr	ctg Leu	gag Glu 535	ggc Gly	ctg Leu	gat Asp	ggg Gly	gaa Glu 540	gac Asp	tgg Trp	ctg Leu	ccg Pro	1632				
ctg Leu 545	gag Glu	cta Leu	ggg Gly	gag Glu	gag Glu 550	gag Glu	cct Pro	gag Glu	ggg Gly	cag Gln 555	cca Pro	gag Glu	gag Glu	gag Glu	gtg Val 560	1680				
aca Thr	atc Ile	ccc Pro	aga Arg	tct Ser 565	ggg Gly	gag Glu	gag Glu	ccc Pro	ttg Leu 570	gcc Ala	ccc Pro	agc Ser	aca Thr	aga Arg 575	gag Glu	1728				
cct Pro	ggg Gly	tgg Trp	cta Leu 580	cag Gln	gag Glu	gaa Glu	gct Ala	gag Glu 585	cta Leu	cag Gln	ctg Leu	gcg Ala	ctc Leu 590	tac Tyr	cgg Arg	1776				
tcc Ser	ctg Leu	cag Gln 595	ccg Pro	cgg Arg	ggc Gly	cag Gln	gca Ala 600	gcc Ala	gag Glu	cag Gln	gag Glu	gag Glu 605	gcc Ala	gag Glu	ctg Leu	1824				
cag Gln	cag Gln 610	gcc Ala	ctg Leu	gcc Ala	ctc Leu	tcc Ser 615	ctg Leu	ctg Leu	gag Glu	ccg Pro	ccc Pro 620	ccc Pro	ctg Leu	agt Ser	ggg Gly	1872				
gag Glu 625	cag Gln	gag Glu	ctc Leu	ctc Leu	tgg Trp 630	ggc Gly	cag Gln	ggc Gly	cca Pro	ggt Gly 635	ggc Gly	tgg Trp	gcc Ala	cag Gln	ctg Leu 640	1920				
gag Glu	gtg Val	cac His	gcc Ala	tcc Ser 645	ttc Phe	gag Glu	cgg Arg	gat Asp	atg Met 650	gac Asp	gag Glu	ctg Leu	gac Asp	cgg Arg 655	gcc Ala	1968				
ttg Leu	gag Glu	gcc Ala	gcc Ala 660	ttg Leu	gag Glu	gtg Val	cac His	ctc Leu 665	agg Arg	gag Glu	gag Glu	ctg Leu	gtg Val 670	ggg Gly	gcc Ala	2016				
ccg Pro	ggc Gly	tgt Cys 675	gtg Val	ctg Leu	ccc Pro	gcc Ala	gag Glu 680	ctg Leu	tgc Cys	gcc Ala	cgc Arg	ctg Leu 685	gag Glu	cgg Arg	tgc Cys	2064				
cat His	ggc Gly 690	gtg Val	agt Ser	gtt Val	gcc Ala	ctg Leu 695	cac His	ggt Gly	ggc Gly	cac His	atc Ile 700	gtc Val	ctc Leu	cgt Arg	ggc Gly	2112				
ttt Phe 705	ggg Gly	gtc Val	cag Gln	cct Pro	acc Thr 710	cac His	gcg Ala	gcc Ala	cat His	cac His 715	ctg Leu	gcg Ala	gcg Ala	ctg Leu	ctg Leu 720	2160				
gct Ala	ggc Gly	ccc Pro	cgg Arg	gat Asp 725	cag Gln	agc Ser	tca Ser	gcc Ala	ttt Phe 730	ccc Pro	ttg Leu	gcg Ala	gct Ala	tcc Ser 735	tgc Cys	2208				

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tcc Ser	aca Thr	cgt Arg	gaa Glu 740	ggc Gly	ccg Pro	aag Lys	gag Glu	ccc Pro 745	ctg Leu	ggc Gly	agg Arg	ctg Leu	gag Glu 750	cgt Arg	ctc Leu	2256
gct Ala	gag Glu	agc Ser 755	agc Ser	agt Ser	gag Glu	ttc Phe	caa Gln 760	gcg Ala	gtg Val	gtg Val	cag Gln	gcc Ala 765	ttc Phe	tgt Cys	gac Asp	2304
aca Thr 770	ctg Leu	gac Asp	acg Thr	gcc Ala	cac His	ggc Gly 775	agg Arg	atc Ile	cac His	gtg Val	gtg Val 780	cgg Arg	gtg Val	gag Glu	cgc Arg	2352
gtg Val 785	cta Leu	cac His	ccg Pro	ctg Leu	ctg Leu 790	cag Gln	cag Gln	cag Gln	tac Tyr	gag Glu 795	ctg Leu	cac His	cgg Arg	gag Glu	cgc Arg 800	2400
ctg Leu	gag Glu	cag Gln	tgc Cys	tgt Cys 805	gag Glu	cgg Arg	ccg Pro	gcc Ala	gag Glu 810	cag Gln	gtc Val	ctg Leu	tac Tyr	cac His 815	ggc Gly	2448
aca Thr	gcg Ala	atg Met	ccc Pro 820	acc Thr	gtc Val	ccc Pro	gac Asp	atc Ile 825	tgc Cys	gcg Ala	cac His	ggc Gly	ttc Phe 830	aac Asn	cgc Arg	2496
agc Ser	ttc Phe	tgc Cys 835	ggc Gly	cgc Arg	aat Asn	gcc Ala	cag Gln 840	tcc Ser	ctc Leu	cag Gln	gac Asp	gga Gly 845	gcc Ala	ccg Pro	ttc Phe	2544
acc Thr 850	tcc Ser	tgc Cys	acg Thr	ccc Pro	gcg Ala	cgt Arg 855	ggg Gly	gcc Ala	cgg Arg	gcg Ala	ctg Leu 860	agg Arg	ggc Gly	gtg Val	cgc Arg	2592
gcg Ala 865	tcg Ser	gtg Val	ccg Pro	gag Glu	gcc Ala 870	atg Met	tcg Ser	ggc Gly	gag Glu	gac Asp 875	cag Gln	gag Glu	gtt Val	cgg Arg	gca Ala 880	2640
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cca Pro 945	tcc Ser	tgg Trp	agg Arg	agg Arg	aag Lys 950	ggg Gly	aag Lys	gtc Val	cgg Arg	ggc Gly 955	aag Lys	gac Asp	cct Pro	gac Asp	cgt Arg 960	2880
gtg Val	ggc Gly	tgg Trp	cag Gln	cag Gln 965	aca Thr	gcg Ala	gct Ala	gcg Ala	ccc Pro 970	tct Ser	ggg Gly	aac Asn	tcg Ser	gac Asp 975	ccc Pro	2928
ggc Gly	gct Ala	gac Asp	agc Ser 980	ccc Pro	ccc Pro	acc Thr	cca Pro	tcc Ser 985	ctc Leu	cgt Arg	gcc Ala	gtc Val	ccg Pro 990	cga Arg	gcc Ala	2976
ctg Leu	gaa Glu	gcc Ala 995	gcg Ala	ggc Gly	ttc Phe	tgg Trp	aca Thr 1000	cgg Arg	ggt Gly	gcg Ala	cag Gln	cgt Arg 1005	ttc Phe	cag Gln	ctg Leu	3024

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 1010 1015 1020

tgg gag atg ggg ctt gcc aat ctg atg ggt ggc aaa gac att gtc 3114  
 Trp Glu Met Gly Leu Ala Asn Leu Met Gly Gly Lys Asp Ile Val  
 1025 1030 1035

ttt taa 3120  
 Phe

<210> 76  
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 <212> PRT  
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<400> 76

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Leu Pro Thr Ser Ile Pro Asp Glu Leu Leu Thr Leu Tyr Phe Glu Asn  
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Arg Arg Ser Ser Gly Gly Gly Pro Val Ala Ser Trp Gln Arg Leu Gly  
 35 40 45

Arg Gly Gly Ile Leu Thr Phe Glu Glu Pro Ala Asp Ala Ala Arg Val  
 50 55 60

Leu Ala Trp Pro Glu His Thr Leu Gln Gly Ala Arg Leu Ser Leu Arg  
 65 70 75 80

Pro Ala Pro Pro Arg Ala Ser Ala Arg Leu Leu Leu Gln Gly Leu Pro  
 85 90 95

Pro Gly Thr Thr Pro Gln Leu Leu Glu Gln Tyr Val Gln Ala Leu Leu  
 100 105 110

Cys Ala Thr Gly His Pro Glu Gln Pro Cys His Ala Leu Ala Ser Pro  
 115 120 125

Arg Pro Asp Arg Ala Leu Val Gln Leu Pro Lys Pro Leu Ser Glu Ala  
 130 135 140

Glu Ala Gly Val Leu Glu Val His Ser Arg Ala Leu Gly Leu Glu Gly  
 145 150 155 160

Ala Glu Val Ser Leu Ala Trp Val Pro Gln Ala Arg Ala Val Arg Val  
 165 170 175

Val Gly Gly Asp Pro Pro Ala Asp Leu Leu Leu Leu Glu Leu Tyr Leu  
 180 185 190

Glu Asn Glu Arg Arg Ser Gly Gly Gly Pro Leu Glu Gly Met His Ser

195

200

205

Leu Pro Gly His Leu Gly Thr Val Val Ser Phe Gln His Trp Arg Val  
 210 215 220

Ala Glu Arg Val Leu Gln Arg Asp His Arg Leu Gln Gly Ser Glu Leu  
 225 230 235 240

Lys Leu Val Pro His Tyr Asp Val Leu Glu Pro Glu Glu Leu Ala Glu  
 245 250 255

Asp Ala Gly Glu Gly Ser Cys Pro Gly Asp Leu Gly Pro Gly Ala Pro  
 260 265 270

Arg His Val Leu Gln Glu Ala Gly Gly Pro Ala Arg Glu Gln His Tyr  
 275 280 285

Ala Gly Asp Val Thr Leu Gly Ser Glu Glu Ala Pro Gly Gln Ser Gly  
 290 295 300

Ala Ser Leu Ser Thr Gly Pro Gln Trp Asp Ser Ser Ser Leu Ala Pro  
 305 310 315 320

Ala Gly Pro Val Ser Ser Gly Pro Trp Gly Ser Ser Glu Glu Glu Gly  
 325 330 335

Leu Gly Ser Arg Arg Thr Val Gly Ser Pro Asp Pro Val Glu Ile Ala  
 340 345 350

Met Arg Ser Ser Glu Gln Val Ala Ser Val Ser Gln Gly Pro Ala Gly  
 355 360 365

Ser Pro Gly Gln Gln Gly Leu Val Glu Met Val Leu Ala Met Glu Pro  
 370 375 380

Gly Ala Met Arg Phe Ile Gln Leu Tyr His Glu Asp Leu Leu Thr Gly  
 385 390 395 400

Leu Gly Asp Val Ala Leu Phe Pro Leu Glu Gly Ser Asp Thr Thr Gly  
 405 410 415

Phe Arg Leu Cys Gly Ala Leu Ala Pro Cys Arg Ala Ala Lys Glu Phe  
 420 425 430

Leu Gln Ser Leu Leu Gly Ser Val Ser Cys His Met Leu Ser Leu Lys  
 435 440 445

His Pro Gly Ser Ala Arg Phe Leu Leu Ser Pro Glu Gly Gln His Leu  
 450 455 460

Leu Arg Glu Leu Glu Ala Gln Phe Gln Cys Val Phe Arg Thr Glu His  
 465 470 475 480

Leu Ala Gly Ala Val<sub>485</sub> Leu Asp Met Asp<sub>490</sub> Leu Glu Glu Val Gly<sub>495</sub> Pro Thr  
 Glu Ala Leu Gln<sub>500</sub> Ala Leu Pro Gly<sub>505</sub> Ser Ser Thr Pro Trp<sub>510</sub> Pro Pro  
 Asp Asp<sub>515</sub> Pro Asp Arg Asp Gln<sub>520</sub> Glu Asn Ser Gly Leu Glu<sub>525</sub> Glu Val Arg  
 Glu<sub>530</sub> Leu Leu Ala Thr Leu Glu<sub>535</sub> Gly Leu Asp Gly Glu<sub>540</sub> Asp Trp Leu Pro  
 Leu<sub>545</sub> Glu Leu Gly Glu<sub>550</sub> Glu Pro Glu Gly Gln<sub>555</sub> Pro Glu Glu Glu Val<sub>560</sub>  
 Thr Ile Pro Arg<sub>565</sub> Ser Gly Glu Glu Pro<sub>570</sub> Leu Ala Pro Ser Thr Arg<sub>575</sub> Glu  
 Pro Gly Trp<sub>580</sub> Leu Gln Glu Glu Ala<sub>585</sub> Glu Leu Gln Leu Ala<sub>590</sub> Leu Tyr Arg  
 Ser Leu<sub>595</sub> Gln Pro Arg Gly Gln<sub>600</sub> Ala Ala Glu Gln Glu<sub>605</sub> Glu Ala Glu Leu  
 Gln<sub>610</sub> Gln Ala Leu Ala Leu Ser<sub>615</sub> Leu Leu Glu Pro<sub>620</sub> Pro Pro Leu Ser Gly  
 Glu<sub>625</sub> Gln Glu Leu Leu Trp<sub>630</sub> Gly Gln Gly Pro<sub>635</sub> Gly Gly Trp Ala Gln Leu<sub>640</sub>  
 Glu Val His Ala<sub>645</sub> Ser Phe Glu Arg Asp<sub>650</sub> Met Asp Glu Leu Asp Arg<sub>655</sub> Ala  
 Leu Glu Ala<sub>660</sub> Ala Leu Glu Val His<sub>665</sub> Leu Arg Glu Glu Leu Val<sub>670</sub> Gly Ala  
 Pro Gly Cys<sub>675</sub> Val Leu Pro Ala<sub>680</sub> Glu Leu Cys Ala Arg<sub>685</sub> Leu Glu Arg Cys  
 His<sub>690</sub> Gly Val Ser Val Ala<sub>695</sub> Leu His Gly Gly His<sub>700</sub> Ile Val Leu Arg Gly  
 Phe<sub>705</sub> Gly Val Gln Pro Thr<sub>710</sub> His Ala Ala His<sub>715</sub> His Leu Ala Ala Leu<sub>720</sub> Leu  
 Ala Gly Pro Arg<sub>725</sub> Asp Gln Ser Ser Ala<sub>730</sub> Phe Pro Leu Ala Ala<sub>735</sub> Ser Cys  
 Ser Thr Arg<sub>740</sub> Glu Gly Pro Lys Glu<sub>745</sub> Pro Leu Gly Arg Leu<sub>750</sub> Glu Arg Leu

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Ala Glu Ser Ser Ser Glu Phe Gln Ala Val Val Gln Ala Phe Cys Asp  
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Thr Leu Asp Thr Ala His Gly Arg Ile His Val Val Arg Val Glu Arg  
770 775 780

Val Leu His Pro Leu Leu Gln Gln Gln Tyr Glu Leu His Arg Glu Arg  
785 790 795 800

Leu Glu Gln Cys Cys Glu Arg Pro Ala Glu Gln Val Leu Tyr His Gly  
805 810 815

Thr Ala Met Pro Thr Val Pro Asp Ile Cys Ala His Gly Phe Asn Arg  
820 825 830

Ser Phe Cys Gly Arg Asn Ala Gln Ser Leu Gln Asp Gly Ala Pro Phe  
835 840 845

Thr Ser Cys Thr Pro Ala Arg Gly Ala Arg Ala Leu Arg Gly Val Arg  
850 855 860

Ala Ser Val Pro Glu Ala Met Ser Gly Glu Asp Gln Glu Val Arg Ala  
865 870 875 880

Val Val Glu Asp Gly Ser Asn Gly Gly Ser Gly Ser Pro Ser Pro Gly  
885 890 895

Asp Thr Leu Pro Trp Asn Leu Glu Lys Thr Gln Arg Ser Arg Arg Gly  
900 905 910

Gly Gly Gly Pro Gly Gly Asn Gly Ser Val Leu Asp Pro Ala Glu Arg  
915 920 925

Ala Val Ile Arg Ile Ala Ala Lys Ile Leu Pro Gly Leu Gln Glu Leu  
930 935 940

Pro Ser Trp Arg Arg Lys Gly Lys Val Arg Gly Lys Asp Pro Asp Arg  
945 950 955 960

Val Gly Trp Gln Gln Thr Ala Ala Ala Pro Ser Gly Asn Ser Asp Pro  
965 970 975

Gly Ala Asp Ser Pro Pro Thr Pro Ser Leu Arg Ala Val Pro Arg Ala  
980 985 990

Leu Glu Ala Ala Gly Phe Trp Thr Arg Gly Ala Gln Arg Phe Gln Leu  
995 1000 1005

Glu Glu Arg Cys Arg Gly Val Pro Gly Glu Gly Val Ser Gln Pro  
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Trp Glu Met Gly Leu Ala Asn Leu Met Gly Gly Lys Asp Ile Val  
1025 1030 1035

Phe

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<211> 14058  
<212> DNA  
<213> Canis familiaris

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<400> 77  
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gag gtg ctc ttc cga gaa ggc gtc atg gtg gca aag aag gat cgg cgg 96  
Glu Val Leu Phe Arg Glu Gly Val Met Val Ala Lys Lys Asp Arg Arg  
20 25 30  
ccc cgc agc ctg cac cct cac gtc cct ggc gtc acc aac ctg cag gtc 144  
Pro Arg Ser Leu His Pro His Val Pro Gly Val Thr Asn Leu Gln Val  
35 40 45  
atg cgc gcc atg gcc tcc ctg cgg gcc cgg ggc ctg gtg cga gag acc 192  
Met Arg Ala Met Ala Ser Leu Arg Ala Arg Gly Leu Val Arg Glu Thr  
50 55 60  
ttc gcc tgg cgc cac ttc tac tgg tac ctc acc aat gag ggc atc gcc 240  
Phe Ala Trp Arg His Phe Tyr Trp Tyr Leu Thr Asn Glu Gly Ile Ala  
65 70 75 80  
cac cta cgc cag tac ctg cac ctg ccg ccg gag atc gtg cct gcc tct 288  
His Leu Arg Gln Tyr Leu His Leu Pro Pro Glu Ile Val Pro Ala Ser  
85 90 95  
ctg cag cgc gtg cgc cgc cct gtc gcc atg gtg atg ccc gcg cgc cgc 336  
Leu Gln Arg Val Arg Arg Pro Val Ala Met Val Met Pro Ala Arg Arg  
100 105 110  
atc ccc cac gtg cag tct gtg cag ggt cct ctg agc tgc ccg cca aag 384  
Ile Pro His Val Gln Ser Val Gln Gly Pro Leu Ser Cys Pro Pro Lys  
115 120 125  
tgg ggg ccg gtg cca act gag gac cct gcc cat gag gag cgg cgg gtc 432  
Trp Gly Pro Val Pro Thr Glu Asp Pro Ala His Glu Glu Arg Arg Val  
130 135 140  
tac cgt cgg aag gag cct gag gag gga gca tct gag ccc cct gtg gtg 480  
Tyr Arg Arg Lys Glu Pro Glu Glu Gly Ala Ser Glu Pro Pro Val Val  
145 150 155 160  
cct gct acc acc ccg ggg aac ctg gcg agg cct ggc ccg aag cct gcc 528  
Pro Ala Thr Thr Pro Gly Asn Leu Ala Arg Pro Gly Pro Lys Pro Ala  
165 170 175  
cca gcc aca gat gaa cgg gat cgt gtg cag aag aaa acc ttc acc aag 576  
Pro Ala Thr Asp Glu Arg Asp Arg Val Gln Lys Lys Thr Phe Thr Lys  
180 185 190  
tgg gtg aac aaa cac ctc atc aag gcc cag aga cac atc agt gac ctg 624  
Trp Val Asn Lys His Leu Ile Lys Ala Gln Arg His Ile Ser Asp Leu

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tat Tyr	gaa Glu 210	gac Asp	ctc Leu
ctc Leu 225	tcg Ser	ggg Gly	gac Asp
aag Lys	ctg Leu	cag Gln	aac Asn
gtg Val	aag Lys	ttg Leu	gtg Val 260
aag Lys	ctg Leu	acc Thr 275	ctt Leu
tcg Ser	gac Asp 290	atc Ile	cag Gln
aag Lys 305	ctc Leu	ctg Leu	ctg Leu
cg Arg	tgt Cys	gac Asp	aac Asn
gac Ala	atc Ile	att Ile	cac His 340
tat Tyr	cgt Arg	cag Gln 355	acc Thr
gag Glu 370	cg Arg	gac Asp	ctg Leu
gtc Val 385	cct Pro	cag Gln	cct Pro
tac Tyr	gac Asp	gag Val 410	cag Gln
aac Asn	gag Glu	ctg Leu	cg Arg
ctg Leu	ctg Leu	cag Gln	atg Met
ttc Phe 450	ccg Pro	tcc Ser	agc Ser
aaa Lys 465	ttt Phe	aag Lys	gag Glu



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				485					490					495		
ctc	aag	gtg	ccc	ccc	ggc	tac	cac	ccc	ctg	gat	gtg	gag	aag	gag	tgg	1536
Leu	Lys	Val	Pro	Pro	Gly	Tyr	His	Pro	Leu	Asp	Val	Glu	Lys	Glu	Trp	
			500					505					510			
ggc	aag	ctg	cat	gtg	gcc	atc	cta	gat	cgg	gag	aag	cag	ctc	cgg	agc	1584
Gly	Lys	Leu	His	Val	Ala	Ile	Leu	Asp	Arg	Glu	Lys	Gln	Leu	Arg	Ser	
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gaa	ttt	gag	agg	ctg	gag	tgt	ctt	cag	cgc	atc	gtg	agc	aaa	ctg	cag	1632
Glu	Phe	Glu	Arg	Leu	Glu	Cys	Leu	Gln	Arg	Ile	Val	Ser	Lys	Leu	Gln	
	530					535					540					
atg	gag	gct	ggg	ctg	tgt	gag	gag	cag	ctg	aac	cac	gcc	gac	gcc	ctg	1680
Met	Glu	Ala	Gly	Leu	Cys	Glu	Glu	Gln	Leu	Asn	His	Ala	Asp	Ala	Leu	
545					550					555					560	
ctt	cag	tcg	gac	gtg	cgg	ctg	ctg	gct	gca	agc	aag	gct	cca	cag	cgg	1728
Leu	Gln	Ser	Asp	Val	Arg	Leu	Leu	Ala	Ala	Ser	Lys	Ala	Pro	Gln	Arg	
				565					570					575		
gcg	gcc	gag	gtg	gag	cgg	gac	ctt	gac	aag	gca	gat	ggc	atg	atc	cgg	1776
Ala	Ala	Glu	Val	Glu	Arg	Asp	Leu	Asp	Lys	Ala	Asp	Gly	Met	Ile	Arg	
			580					585					590			
ctg	ctg	ttc	aac	gat	gtg	cag	acc	ctc	aag	gat	ggg	cgg	cac	ccg	cag	1824
Leu	Leu	Phe	Asn	Asp	Val	Gln	Thr	Leu	Lys	Asp	Gly	Arg	His	Pro	Gln	
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gga	gag	cag	atg	tac	cgc	aga	gtg	tac	cgc	ctg	cac	gag	cgc	ttg	gtg	1872
Gly	Glu	Gln	Met	Tyr	Arg	Arg	Val	Tyr	Arg	Leu	His	Glu	Arg	Leu	Val	
	610					615					620					
gcc	atc	cga	acc	gag	tac	aac	ctc	cgg	cta	aag	tcc	ggc	gta	gct	gcc	1920
Ala	Ile	Arg	Thr	Glu	Tyr	Asn	Leu	Arg	Leu	Lys	Ser	Gly	Val	Ala	Ala	
625					630					635					640	
ccc	gtg	acc	cag	gtg	act	atg	cag	acc	acg	cag	agg	cgc	cct	gag	ctc	1968
Pro	Val	Thr	Gln	Val	Thr	Met	Gln	Thr	Thr	Gln	Arg	Arg	Pro	Glu	Leu	
				645					650					655		
gag	gat	gcc	acg	ctg	cgc	tac	ctg	cag	gac	ctg	ctg	gcc	tgg	gtg	gag	2016
Glu	Asp	Ala	Thr	Leu	Arg	Tyr	Leu	Gln	Asp	Leu	Leu	Ala	Trp	Val	Glu	
			660					665					670			
gag	aac	cag	cgc	cgg	gtg	gac	agt	gcc	gag	tgg	ggc	ggg	gac	ctg	ccc	2064
Glu	Asn	Gln	Arg	Arg	Val	Asp	Ser	Ala	Glu	Trp	Gly	Gly	Asp	Leu	Pro	
		675				680						685				
agt	gtg	gaa	gcg	cag	ctg	ggc	agc	cac	cgt	ggc	ctg	cac	cag	tcc	att	2112
Ser	Val	Glu	Ala	Gln	Leu	Gly	Ser	His	Arg	Gly	Leu	His	Gln	Ser	Ile	
	690					695					700					
gac	gag	ttc	cgg	gcc	aag	att	gag	cgg	gcg	cgg	gct	gat	gag	ggc	cag	2160
Asp	Glu	Phe	Arg	Ala	Lys	Ile	Glu	Arg	Ala	Arg	Ala	Asp	Glu	Gly	Gln	
705					710					715					720	
ctc	tcc	cct	gcc	ccc	cgg	ggc	acc	tac	agg	gac	tgc	ctg	ggc	cgg	ctt	2208
Leu	Ser	Pro	Ala	Pro	Arg	Gly	Thr	Tyr	Arg	Asp	Cys	Leu	Gly	Arg	Leu	
				725					730					735		
gac	ctg	cag	tac	gcc	aag	ctg	ctg	aac	tcc	tct	aag	gcc	cgt	ctg	cgg	2256
Asp	Leu	Gln	Tyr	Ala	Lys	Leu	Leu	Asn	Ser	Ser	Lys	Ala	Arg	Leu	Arg	
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atg	tgg	ctc	agt	gag	aag	gag	gag	gag	gag	gtg	ggc	ttc	gac	tgg	ggg	2352
Met	Trp	Leu	Ser	Glu	Lys	Glu	Glu	Glu	Glu	Val	Gly	Phe	Asp	Trp	Gly	
	770					775					780					
gag	cac	aac	tct	aac	atg	gcc	gcc	aag	aag	gag	agc	tac	tcg	gct	ctg	2400
Glu	His	Asn	Ser	Asn	Met	Ala	Ala	Lys	Lys	Glu	Ser	Tyr	Ser	Ala	Leu	
					790					795					800	
atg	cgc	gag	ctg	gag	gtg	aag	gaa	aag	aag	atc	aag	gag	att	cag	agc	2448
Met	Arg	Glu	Leu	Glu	Val	Lys	Glu	Lys	Lys	Ile	Lys	Glu	Ile	Gln	Ser	
				805					810					815		
acc	ggg	gac	cgg	ctg	ctg	cgg	gag	ggg	cac	cct	gcc	cgg	cct	aca	gtg	2496
Thr	Gly	Asp	Arg	Leu	Leu	Arg	Glu	Gly	His	Pro	Ala	Arg	Pro	Thr	Val	
			820					825					830			
gag	tcc	ttc	cag	gcc	gcc	ctg	cag	acc	cag	tgg	agc	tgg	atg	ctt	cag	2544
Glu	Ser	Phe	Gln	Ala	Ala	Leu	Gln	Thr	Gln	Trp	Ser	Trp	Met	Leu	Gln	
		835					840					845				
ctg	tgc	tgc	tgc	atc	gag	gcg	cac	ctg	aaa	gag	aac	acc	gcc	tac	ttc	2592
Leu	Cys	Cys	Cys	Ile	Glu	Ala	His	Leu	Lys	Glu	Asn	Thr	Ala	Tyr	Phe	
	850					855					860					
cag	ttc	ttc	tcg	gac	gtg	cgg	gag	act	gag	gaa	cag	ctc	cgg	aag	ctg	2640
Gln	Phe	Phe	Ser	Asp	Val	Arg	Glu	Thr	Glu	Glu	Gln	Leu	Arg	Lys	Leu	
					870					875					880	
cag	gag	atg	ctg	cgc	agg	aag	tat	atc	tgt	gac	cgc	tcc	atc	acc	gtc	2688
Gln	Glu	Met	Leu	Arg	Arg	Lys	Tyr	Ile	Cys	Asp	Arg	Ser	Ile	Thr	Val	
				885					890					895		
acg	cgc	ctg	gag	gac	ctg	cta	cag	gat	gcc	cag	gat	gag	aag	gag	cag	2736
Thr	Arg	Leu	Glu	Asp	Leu	Leu	Gln	Asp	Ala	Gln	Asp	Glu	Lys	Glu	Gln	
			900					905					910			
ctg	aac	gag	tac	agg	gca	cac	ctg	tca	ggg	ctg	gcc	aag	cgg	gcc	aag	2784
Leu	Asn	Glu	Tyr	Arg	Ala	His	Leu	Ser	Gly	Leu	Ala	Lys	Arg	Ala	Lys	
		915					920					925				
gct	gtc	gtg	cag	ctg	aag	ccc	cga	gac	cag	gcc	cag	cct	gtg	cgg	ggt	2832
Ala	Val	Val	Gln	Leu	Lys	Pro	Arg	Asp	Gln	Ala	Gln	Pro	Val	Arg	Gly	
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ctc	gtg	ccg	ctg	cag	gct	gtg	tgt	gac	tac	aag	cag	gtg	gag	gtg	act	2880
Leu	Val	Pro	Leu	Gln	Ala	Val	Cys	Asp	Tyr	Lys	Gln	Val	Glu	Val	Thr	
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gtg	cac	aag	ggt	gac	cag	tac	cag	ctg	ctg	ggc	ccc	gca	cag	ccc	gcg	2928
Val	His	Lys	Gly	Asp	Gln	Tyr	Gln	Leu	Leu	Gly	Pro	Ala	Gln	Pro	Ala	
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cac	tgg	aag	gtg	ctc	agc	agc	tct	ggc	agt	gag	gcc	gcc	gtg	ccc	tct	2976
His	Trp	Lys	Val	Leu	Ser	Ser	Ser	Gly	Ser	Glu	Ala	Ala	Val	Pro	Ser	
			980					985					990			
gtg	tgt	ttc	ctc	gtg	cct	ccg	ccc	aac	cag	gag	gcc	cag	gag	gcc	gtc	3024
Val	Cys	Phe	Leu	Val	Pro	Pro	Pro	Asn	Gln	Glu	Ala	Gln	Glu	Ala	Val	
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Ser	Arg	Leu	Glu	Ala	Gln	His	Gln	Ala	Leu	Val	Ala	Leu	Trp	His		
	1010					1015					1020					
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Gln	Leu	His	Val	Asp	Met	Lys	Ser	Leu	Leu	Ala	Trp	Gln	Cys	Leu	
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Arg	Thr	Leu	Lys	Pro	Glu	Glu	Gln	Arg	Gln	Ala	Leu	Arg	Ser	Leu	
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gag	ctt	cac	tac	cag	gcc	ttc	ctg	cgg	gac	agc	cag	gat	gct	ggg	3249
Glu	Leu	His	Tyr	Gln	Ala	Phe	Leu	Arg	Asp	Ser	Gln	Asp	Ala	Gly	
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ggc	ttt	ggg	cct	gag	gac	cgg	ctg	cag	gcc	gag	cgc	gag	tac	ggc	3294
Gly	Phe	Gly	Pro	Glu	Asp	Arg	Leu	Gln	Ala	Glu	Arg	Glu	Tyr	Gly	
	1085					1090					1095				
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Ser	Cys	Ser	Arg	His	Tyr	Gln	Gln	Leu	Leu	Gln	Ser	Ala	Glu	Gln	
	1100					1105					1110				
ggt	gca	cag	gag	gag	tcc	cgc	tgc	cag	cgc	tgc	atc	tct	gag	ctc	3384
Gly	Ala	Gln	Glu	Glu	Ser	Arg	Cys	Gln	Arg	Cys	Ile	Ser	Glu	Leu	
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aag	gac	atc	cgg	ctg	cag	ctg	gag	gcc	tgc	gag	acc	cgc	acc	gtg	3429
Lys	Asp	Ile	Arg	Leu	Gln	Leu	Glu	Ala	Cys	Glu	Thr	Arg	Thr	Val	
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cac	cgc	ctg	cgg	ctg	ccg	ctg	gac	aaa	gag	ccc	gcg	cga	gag	tgt	3474
His	Arg	Leu	Arg	Leu	Pro	Leu	Asp	Lys	Glu	Pro	Ala	Arg	Glu	Cys	
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Ala	Gln	Arg	Ile	Ala	Glu	Gln	Gln	Lys	Ala	Gln	Ala	Glu	Val	Glu	
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gga	cta	ggc	aag	ggt	gtc	gcc	cgg	ctc	tct	gcg	gag	gcc	gag	aag	3564
Gly	Leu	Gly	Lys	Gly	Val	Ala	Arg	Leu	Ser	Ala	Glu	Ala	Glu	Lys	
	1175					1180					1185				
gtc	ctg	gcc	ctg	ccc	gag	ccg	tca	cct	gcc	gcc	ccc	acc	ctg	cgc	3609
Val	Leu	Ala	Leu	Pro	Glu	Pro	Ser	Pro	Ala	Ala	Pro	Thr	Leu	Arg	
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Ser	Glu	Leu	Glu	Leu	Thr	Leu	Gly	Lys	Leu	Glu	Gln	Val	Arg	Ser	
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Leu	Ser	Ala	Ile	Tyr	Leu	Glu	Lys	Leu	Lys	Thr	Ile	Ser	Leu	Val	
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Ile	Arg	Ser	Thr	Gln	Gly	Ala	Glu	Glu	Val	Leu	Arg	Ala	His	Glu	
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Glu	Gln	Leu	Lys	Glu	Ala	Gln	Ala	Val	Pro	Ala	Thr	Leu	Pro	Asp	
	1250					1255					1260				
ctt	gag	gcc	acc	aag	gct	gcg	ctg	aag	aag	ctg	cgg	gtc	cag	gcg	3834
Leu	Glu	Ala	Thr	Lys	Ala	Ala	Leu	Lys	Lys	Leu	Arg	Val	Gln	Ala	
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Glu	Ala	Gln	Gln	Pro	Val	Phe	Asp	Ala	Leu	Arg	Asp	Glu	Leu	Arg	

1280		1285		1290											
ggg Gly	gct Ala 1295	cag Gln	gag Glu	gtg Val	ggg Gly	gag Glu 1300	cgg Arg	ctg Leu	cag Gln	cgg Arg	cag Gln 1305	cac His	ggc Gly	gag Glu	3924
cgg Arg	gac Asp 1310	gtg Val	gag Glu	gtg Val	gag Glu	cgc Arg 1315	tgg Trp	cga Arg	gag Glu	cgg Arg	gtc Val 1320	gca Ala	ccc Pro	ctg Leu	3969
ctg Leu	gag Glu 1325	cgc Arg	tgg Trp	cag Gln	gct Ala	gca Ala 1330	ctg Leu	gcc Ala	cag Gln	acc Thr	gac Asp 1335	gtg Val	agg Arg	cag Gln	4014
cgc Arg	gag Glu 1340	ctc Leu	gag Glu	cag Gln	ctg Leu	ggc Gly 1345	cgc Arg	cag Gln	ctc Leu	cgc Arg	tac Tyr 1350	tac Tyr	cgc Arg	gag Glu	4059
agc Ser	gcg Ala 1355	gac Asp	ccg Pro	ctg Leu	ggc Gly	acc Thr 1360	tgg Trp	ctg Leu	cag Gln	gac Asp	gcc Ala 1365	aag Lys	cag Gln	cgg Arg	4104
cag Gln	gag Glu 1370	cgg Arg	atc Ile	cag Gln	gcc Ala	gtg Val 1375	ccg Pro	cta Leu	gcc Ala	aac Asn	agc Ser 1380	cag Gln	gcc Ala	gtg Val	4149
cgg Arg	gag Glu 1385	cag Gln	ctg Leu	cag Gln	cag Gln	gag Glu 1390	aag Lys	gag Glu	ctg Leu	ctg Leu	gag Glu 1395	gag Glu	atc Ile	gag Glu	4194
cgg Arg	tat Tyr 1400	ggc Gly	gag Glu	aag Lys	gtg Val	gat Asp 1405	gag Glu	tgc Cys	cag Gln	cag Gln	ctg Leu 1410	gcc Ala	aag Lys	cag Gln	4239
tac Tyr	att Ile 1415	aat Asn	gcc Ala	atc Ile	aag Lys	gac Asp 1420	tac Tyr	gag Glu	ctt Leu	caa Gln	ctg Leu 1425	gtc Val	acg Thr	tat Tyr	4284
aag Lys	gcg Ala 1430	cag Gln	ctg Leu	gag Glu	cca Pro	gtg Val 1435	gcc Ala	tcc Ser	cca Pro	gcc Ala	aag Lys 1440	aag Lys	ccc Pro	aag Lys	4329
gtc Val	cag Gln 1445	tcc Ser	ggg Gly	tct Ser	gag Glu	agc Ser 1450	gtc Val	atc Ile	cag Gln	gag Glu	tat Tyr 1455	gtg Val	gac Asp	ctg Leu	4374
cgc Arg	acg Thr 1460	agg Arg	tac Tyr	agc Ser	gag Glu	ctc Leu 1465	acc Thr	acg Thr	ctt Leu	aca Thr	agt Ser 1470	cag Gln	tac Tyr	atc Ile	4419
aag Lys	ttc Phe 1475	atc Ile	cgc Arg	gag Glu	acc Thr	ctg Leu 1480	cgg Arg	cgc Arg	atg Met	gag Glu	gag Glu 1485	gag Glu	gag Glu	agg Arg	4464
ctg Leu	gct Ala 1490	gag Glu	cag Gln	cag Gln	cgg Arg	gca Ala 1495	gag Glu	gag Glu	cgg Arg	gaa Glu	cgg Arg 1500	ctg Leu	gcc Ala	gag Glu	4509
gtg Val	gag Glu 1505	gcc Ala	gcg Ala	ctg Leu	gag Glu	aag Lys 1510	cag Gln	cgg Arg	cag Gln	ttg Leu	gcc Ala 1515	gag Glu	gcc Ala	cac His	4554
gcg Ala	cag Gln 1520	gcg Ala	aag Lys	gcg Ala	cag Gln	gcc Ala 1525	gag Glu	cgg Arg	gag Glu	gca Ala	gag Glu 1530	gag Glu	ctg Leu	cag Gln	4599
cgg Arg	cgc Arg 1535	atg Met	cag Gln	gag Glu	gag Glu	gtg Val 1540	gca Ala	cgg Arg	cgg Arg	gag Glu	gag Glu 1545	gcc Ala	gcg Ala	gtg Val	4644

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gac Asp	gca Ala 1550	cag Gln	cag Gln	cag Gln	aag Lys	cgg Arg 1555	agc Ser	att Ile	cag Gln	gag Glu	gag Glu 1560	ctg Leu	cag Gln	cac His	4689
ttg Leu	cgg Arg 1565	cag Gln	agc Ser	tcg Ser	gag Glu	gcc Ala 1570	gag Glu	atc Ile	cag Gln	gcc Ala	aag Lys 1575	gcc Ala	cgg Arg	cag Gln	4734
gtg Val	gag Glu 1580	gcc Ala	gca Ala	gaa Glu	cgc Arg	agc Ser 1585	cgg Arg	gtg Val	cgc Arg	atc Ile	gag Glu 1590	gag Glu	gag Glu	atc Ile	4779
cgc Arg	gtg Val 1595	gtc Val	cgc Arg	ctg Leu	cag Gln	ctg Leu 1600	gag Glu	gcc Ala	act Thr	gag Glu	cgc Arg 1605	cag Gln	cgg Arg	ggc Gly	4824
ggg Gly	gcc Ala 1610	gag Glu	ggc Gly	gag Glu	ctg Leu	cag Gln 1615	gcc Ala	cta Leu	cgt Arg	gcg Ala	cgg Arg 1620	gcg Ala	gaa Glu	gag Glu	4869
gcc Ala	gag Glu 1625	gcg Ala	cag Gln	aag Lys	cgg Arg	cag Gln 1630	gca Ala	cag Gln	gag Glu	gag Glu	gcg Ala 1635	gag Glu	cgc Arg	ttg Leu	4914
cgg Arg	cgg Arg 1640	cag Gln	gtg Val	cag Gln	gac Asp	gag Glu 1645	agc Ser	cag Gln	cgc Arg	aag Lys	cgg Arg 1650	cag Gln	gca Ala	gag Glu	4959
gcg Ala	gag Glu 1655	ctg Leu	gcc Ala	ctg Leu	cgc Arg	gtg Val 1660	aag Lys	gcc Ala	gag Glu	gcc Ala	gag Glu 1665	gcg Ala	gcc Ala	cga Arg	5004
gaa Glu	aag Lys 1670	cag Gln	cgg Arg	gcc Ala	ctg Leu	cag Gln 1675	gcg Ala	ctc Leu	gag Glu	gac Asp	gtg Val 1680	cgg Arg	ctc Leu	cag Gln	5049
gcc Ala	gag Glu 1685	gag Glu	gcg Ala	gag Glu	cgg Arg	cgc Arg 1690	ctg Leu	cgg Arg	cag Gln	gcg Ala	gag Glu 1695	gcc Ala	gac Asp	cgg Arg	5094
gcc Ala	cgc Arg 1700	cag Gln	gtg Val	cag Gln	gtg Val	gcc Ala 1705	ctg Leu	gag Glu	acg Thr	gcg Ala	cag Gln 1710	cgc Arg	agc Ser	gca Ala	5139
gag Glu	gtg Val 1715	gag Glu	ctg Leu	cag Gln	agc Ser	aag Lys 1720	cgc Arg	gcc Ala	tcc Ser	ttc Phe	gcc Ala 1725	gag Glu	aag Lys	act Thr	5184
gcg Ala	cag Gln 1730	ctg Leu	gag Glu	cgc Arg	acg Thr	ctg Leu 1735	cag Gln	gaa Glu	gag Glu	cac His	gtg Val 1740	gcc Ala	gtg Val	gca Ala	5229
cag Gln	ctg Leu 1745	cgc Arg	gag Glu	gag Glu	gcg Ala	gag Glu 1750	cgg Arg	cgg Arg	gct Ala	cag Gln	cag Gln 1755	cag Gln	gcg Ala	gag Glu	5274
gcc Ala	gag Glu 1760	cgc Arg	gcc Ala	cgg Arg	gag Glu	gag Glu 1765	gcg Ala	gag Glu	cag Gln	gag Glu	ctg Leu 1770	gag Glu	cgc Arg	tgg Trp	5319
cgg Arg	ctg Leu 1775	aag Lys	gcc Ala	aac Asn	gag Glu	gca Ala 1780	ctg Leu	cgc Arg	ctg Leu	cgg Arg	ctg Leu 1785	cag Gln	gcg Ala	gaa Glu	5364
gag Glu	gtg Val 1790	gcc Ala	cag Gln	cag Gln	aag Lys	agc Ser 1795	ctg Leu	gcg Ala	cag Gln	gct Ala	gag Glu 1800	gcc Ala	gag Glu	aag Lys	5409

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cag Gln	aag Lys 1805	gag Glu	gag Glu	gcg Ala	gag Glu	cgg Arg 1810	gag Glu	gcg Ala	cgg Arg	cgc Arg	cgg Arg 1815	ggc Gly	aag Lys	gcg Ala	5454
gag Glu	gag Glu 1820	cag Gln	gcc Ala	gtg Val	cgg Arg	cag Gln 1825	cgg Arg	gag Glu	ctg Leu	gcc Ala	gag Glu 1830	cag Gln	gag Glu	ctg Leu	5499
gag Glu	aag Lys 1835	cag Gln	cgg Arg	cag Gln	ctg Leu	gca Ala 1840	gag Glu	ggc Gly	acc Thr	gcg Ala	cag Gln 1845	cag Gln	cgc Arg	ctg Leu	5544
gtg Val	gcg Ala 1850	gag Glu	cag Gln	gag Glu	ctg Leu	atc Ile 1855	cgg Arg	ctg Leu	cgg Arg	gcc Ala	gag Glu 1860	acg Thr	gag Glu	cag Gln	5589
ggg Gly	gag Glu 1865	cag Gln	cag Gln	cgg Arg	cag Gln	ctg Leu 1870	ttg Leu	gag Glu	gag Glu	gag Glu	ctg Leu 1875	gcg Ala	cgc Arg	ctg Leu	5634
cag Gln	cgg Arg 1880	gag Glu	gcg Ala	gcc Ala	gca Ala	gcc Ala 1885	acg Thr	cac His	aag Lys	cgc Arg	cag Gln 1890	gag Glu	ctg Leu	gaa Glu	5679
gcc Ala	gag Glu 1895	ctg Leu	gcc Ala	aag Lys	gtg Val	cgg Arg 1900	gct Ala	gag Glu	atg Met	gag Glu	gtg Val 1905	ctg Leu	ctg Leu	gcc Ala	5724
agc Ser	aag Lys 1910	gcg Ala	cgc Arg	gca Ala	gag Glu	gag Glu 1915	gag Glu	tcc Ser	cgc Arg	tcc Ser	acc Thr 1920	agc Ser	gag Glu	aag Lys	5769
tcc Ser	aag Lys 1925	cag Gln	agg Arg	ctg Leu	gag Glu	gcc Ala 1930	gag Glu	gcc Ala	agc Ser	cgg Arg	ttc Phe 1935	cgc Arg	gag Glu	ctg Leu	5814
gcc Ala	gag Glu 1940	gag Glu	gcc Ala	gcc Ala	cgc Arg	ctg Leu 1945	cgt Arg	gcc Ala	ctg Leu	gct Ala	gag Glu 1950	gag Glu	acc Thr	aag Lys	5859
cgg Arg	cag Gln 1955	cgg Arg	cag Gln	ctg Leu	gcc Ala	gag Glu 1960	gag Glu	gat Asp	gcg Ala	gcc Ala	cgg Arg 1965	cag Gln	cgg Arg	gcg Ala	5904
gag Glu	gcg Ala 1970	gag Glu	agg Arg	gta Val	ctg Leu	gcc Ala 1975	gag Glu	aag Lys	ctg Leu	gcc Ala	gcc Ala 1980	atc Ile	agc Ser	gag Glu	5949
gcc Ala	acg Thr 1985	cgg Arg	ctc Leu	aag Lys	acc Thr	gag Glu 1990	gcc Ala	gag Glu	atc Ile	gcc Ala	ctc Leu 1995	aag Lys	gag Glu	aag Lys	5994
gag Glu	gcg Ala 2000	gag Glu	aat Asn	gag Glu	cgt Arg	ctg Leu 2005	cgg Arg	cgg Arg	ctg Leu	gcg Ala	gaa Glu 2010	gac Asp	gaa Glu	gcc Ala	6039
ttc Phe	cag Gln 2015	cgg Arg	cgg Arg	cgg Arg	ctg Leu	gag Glu 2020	gag Glu	cag Gln	gcc Ala	gcc Ala	cag Gln 2025	cac His	aag Lys	gcg Ala	6084
gac Asp	atc Ile 2030	gag Glu	gag Glu	cgg Arg	ctg Leu	gcg Ala 2035	cag Gln	ctg Leu	cgc Arg	aag Lys	gcg Ala 2040	tca Ser	gag Glu	aac Asn	6129
gag Glu	ctg Leu 2045	gag Glu	cgg Arg	cag Gln	aag Lys	ggg Gly 2050	ctg Leu	gtg Val	gag Glu	gac Asp	acg Thr 2055	ctg Leu	cgg Arg	cag Gln	6174
cgg Arg	cgg Arg	cag Gln	gtg Val	gag Glu	gag Glu	gag Glu	atc Ile	ctg Leu	gcc Ala	ctg Leu	aag Lys	gcg Ala	agc Ser	ttc Phe	6219

Arg	Arg	Gln	Val	Glu	Glu	Glu	Ile	Leu	Ala	Leu	Lys	Ala	Ser	Phe	
	2060					2065					2070				
gag	aag	gca	gct	gcc	ggc	aag	gcg	gag	ctg	gag	ctg	gag	ctc	ggg	6264
Glu	Lys	Ala	Ala	Ala	Gly	Lys	Ala	Glu	Leu	Glu	Leu	Glu	Leu	Gly	
	2075					2080					2085				
cgc	atc	cgc	agt	aac	gcc	gag	gac	aca	ctg	cgc	agc	aag	gag	cag	6309
Arg	Ile	Arg	Ser	Asn	Ala	Glu	Asp	Thr	Leu	Arg	Ser	Lys	Glu	Gln	
	2090					2095					2100				
gct	gag	ctg	gag	gcc	acg	cgg	cag	cgg	cag	ctg	gcg	gct	gag	gag	6354
Ala	Glu	Leu	Glu	Ala	Thr	Arg	Gln	Arg	Gln	Leu	Ala	Ala	Glu	Glu	
	2105					2110					2115				
gag	cag	cgg	cgc	cgc	gag	gcc	gag	gag	cgc	gtg	caa	aag	agc	ctg	6399
Glu	Gln	Arg	Arg	Arg	Glu	Ala	Glu	Glu	Arg	Val	Gln	Lys	Ser	Leu	
	2120					2125					2130				
gct	gct	gag	gag	gag	gcc	gcg	cgg	cag	cgc	aag	tct	gcc	ctg	gag	6444
Ala	Ala	Glu	Glu	Glu	Ala	Ala	Arg	Gln	Arg	Lys	Ser	Ala	Leu	Glu	
	2135					2140					2145				
gag	gtg	gag	cgg	ctc	aag	gcc	aag	gtg	gag	gag	gcc	cgg	cgc	ctg	6489
Glu	Val	Glu	Arg	Leu	Lys	Ala	Lys	Val	Glu	Glu	Ala	Arg	Arg	Leu	
	2150					2155					2160				
cgt	gag	cga	gcg	gag	cag	gag	tcg	gct	cgg	cag	cta	caa	ctg	gcc	6534
Arg	Glu	Arg	Ala	Glu	Gln	Glu	Ser	Ala	Arg	Gln	Leu	Gln	Leu	Ala	
	2165					2170					2175				
cag	gag	gcc	gcc	cag	aag	cgg	ctg	cag	gcc	gag	gag	aag	gcg	cac	6579
Gln	Glu	Ala	Ala	Gln	Lys	Arg	Leu	Gln	Ala	Glu	Glu	Lys	Ala	His	
	2180					2185					2190				
gcc	ttc	gcc	gtg	cag	cag	aag	gaa	cag	gag	ctg	cag	cag	aca	ctc	6624
Ala	Phe	Ala	Val	Gln	Gln	Lys	Glu	Gln	Glu	Leu	Gln	Gln	Thr	Leu	
	2195					2200					2205				
cag	cag	gag	cag	agc	atg	ctg	gag	cgg	ctg	cgg	gcc	gag	gcg	gag	6669
Gln	Gln	Glu	Gln	Ser	Met	Leu	Glu	Arg	Leu	Arg	Ala	Glu	Ala	Glu	
	2210					2215					2220				
gcg	gcg	cgg	cgg	gcg	gcc	gag	gag	gcg	gag	gag	gcg	cgg	gag	cgg	6714
Ala	Ala	Arg	Arg	Ala	Ala	Glu	Glu	Ala	Glu	Glu	Ala	Arg	Glu	Arg	
	2225					2230					2235				
gcc	gag	agg	gag	gca	gca	cag	tcc	cgg	cgg	cag	gtg	gag	gag	gcc	6759
Ala	Glu	Arg	Glu	Ala	Ala	Gln	Ser	Arg	Arg	Gln	Val	Glu	Glu	Ala	
	2240					2245					2250				
gag	agg	ctg	aag	cag	ctg	gcc	gag	gag	cag	gcg	cag	gcc	cag	gcg	6804
Glu	Arg	Leu	Lys	Gln	Leu	Ala	Glu	Glu	Gln	Ala	Gln	Ala	Gln	Ala	
	2255					2260					2265				
cag	gcg	cag	gcc	gcc	gcg	gag	aag	ctt	cgc	aag	gaa	gcg	gag	cag	6849
Gln	Ala	Gln	Ala	Ala	Ala	Glu	Lys	Leu	Arg	Lys	Glu	Ala	Glu	Gln	
	2270					2275					2280				
gag	gcg	gtg	cgg	cgg	gcg	cag	gca	gag	cag	gcc	gcc	ctg	aag	cag	6894
Glu	Ala	Val	Arg	Arg	Ala	Gln	Ala	Glu	Gln	Ala	Ala	Leu	Lys	Gln	
	2285					2290					2295				
aag	cag	gtg	gcc	gac	gcc	gag	atg	gag	aag	cac	aag	aag	ttt	gct	6939
Lys	Gln	Val	Ala	Asp	Ala	Glu	Met	Glu	Lys	His	Lys	Lys	Phe	Ala	
	2300					2305					2310				
gag	cag	act	ttg	cgg	cag	aag	gcg	cag	gtg	gag	cag	gag	ctg	acc	6984
Glu	Gln	Thr	Leu	Arg	Gln	Lys	Ala	Gln	Val	Glu	Gln	Glu	Leu	Thr	

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2315		2320		2325		
acg Thr	ctg Leu	agg Arg	ctg Leu	cag Gln	ctg Leu	gag Glu
	2330					2335
						gag Glu
						2340
						cag Gln
						2345
						aag Lys
						2350
						agc Ser
						2355
						gag Glu
						2360
						gag Glu
						2365
						gag Glu
						2370
						gag Glu
						2375
						gag Glu
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						2580
						gag Glu



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gcc Ala	gag Glu 2585	cgc Arg	cta Leu	cgg Arg	gcg Ala	gct Ala 2590	atc Ile	acc Thr	gag Glu	ctg Leu	gag Glu 2595	cgt Arg	gag Glu	aag Lys	7794
gag Glu	aag Lys 2600	ctc Leu	cag Gln	gag Glu	gag Glu	gcc Ala 2605	acg Thr	ttg Leu	ctg Leu	cag Gln	cag Gln 2610	aag Lys	tct Ser	gag Glu	7839
gag Glu	atg Met 2615	cag Gln	gtg Val	gtg Val	cag Gln	cag Gln 2620	gag Glu	cag Gln	ctg Leu	ctg Leu	cag Gln 2625	gag Glu	acg Thr	cgg Arg	7884
gcc Ala	ctg Leu 2630	cag Gln	gag Glu	agc Ser	ttc Phe	ctg Leu 2635	tca Ser	gag Glu	aag Lys	gac Asp	cgc Arg 2640	ctg Leu	ctg Leu	cag Gln	7929
cgg Arg	gag Glu 2645	cgc Arg	ttc Phe	atc Ile	gag Glu	cag Gln 2650	gag Glu	aag Lys	gcc Ala	aag Lys	ctg Leu 2655	gag Glu	cag Gln	ctc Leu	7974
ttc Phe	cgg Arg 2660	gac Asp	gag Glu	gtg Val	gcc Ala	aag Lys 2665	gcg Ala	cag Gln	aaa Lys	ttg Leu	cgt Arg 2670	gag Glu	gag Glu	cag Gln	8019
cag Gln	cgg Arg 2675	cag Gln	cag Gln	cag Gln	cag Gln	atg Met 2680	gag Glu	cag Gln	gag Glu	cgg Arg	gag Glu 2685	cag Gln	ctg Leu	gtg Val	8064
gcc Ala	agc Ser 2690	atg Met	gag Glu	gag Glu	gcc Ala	cgg Arg 2695	cag Gln	tgc Cys	cag Gln	cgt Arg	gag Glu 2700	gcc Ala	gag Glu	gag Glu	8109
ggc Gly	gtg Val 2705	cgc Arg	cgc Arg	aag Lys	cag Gln	gag Glu 2710	gag Glu	ctg Leu	cag Gln	ctt Leu	ctc Leu 2715	gag Glu	cag Gln	cag Gln	8154
cgg Arg	cag Gln 2720	cag Gln	cag Gln	gag Glu	cga Arg	ctg Leu 2725	ctg Leu	gcc Ala	gag Glu	gag Glu	aac Asn 2730	cag Gln	cgg Arg	ctg Leu	8199
cgc Arg	gag Glu 2735	cgg Arg	cta Leu	cag Gln	cgc Arg	ctg Leu 2740	gag Glu	gag Glu	gag Glu	cac His	cgg Arg 2745	gcc Ala	gcc Ala	ttg Leu	8244
gcg Ala	cat His 2750	tcg Ser	gag Glu	gag Glu	atc Ile	gcc Ala 2755	gcc Ala	tcg Ser	cag Gln	gcc Ala	gcg Ala 2760	gct Ala	gcc Ala	aaa Lys	8289
gcc Ala	ctg Leu 2765	ccc Pro	aac Asn	ggc Gly	cgg Arg	gat Asp 2770	gcg Ala	ccc Pro	gac Asp	ggc Gly	cca Pro 2775	gcc Ala	gtg Val	gag Glu	8334
gca Ala	gag Glu 2780	cct Pro	gag Glu	cac His	atg Met	ttc Phe 2785	gat Asp	ggc Gly	ctt Leu	cgg Arg	cgg Arg 2790	aag Lys	gtg Val	cca Pro	8379
gcc Ala	cag Gln 2795	cgg Arg	ctg Leu	cag Gln	gag Glu	gtg Val 2800	ggc Gly	atc Ile	ctg Leu	agc Ser	gca Ala 2805	gag Glu	gag Glu	ctg Leu	8424
cag Gln	cgg Arg 2810	ctg Leu	gcc Ala	cag Gln	ggc Gly	cgc Arg 2815	acg Thr	aca Thr	gtg Val	gcc Ala	gag Glu 2820	ctt Leu	gct Ala	cag Gln	8469
cgg Arg	gag Glu 2825	gac Asp	gtg Val	tgc Cys	cag Gln	tac Tyr 2830	ctg Leu	cag Gln	ggc Gly	cgc Arg	ggt Gly 2835	ggc Gly	atc Ile	gcc Ala	8514

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ggg Gly	ctg Leu 2840	ctg Leu	ctc Leu	aaa Lys	ccg Pro	gcc Ala 2845	aac Asn	gag Glu	aag Lys	ctg Leu	agt Ser 2850	atc Ile	tac Tyr	gcg Ala	8559
gcc Ala	ctc Leu 2855	cgg Arg	agg Arg	cag Gln	ctg Leu	ctg Leu 2860	agc Ser	cca Pro	ggc Gly	acg Thr	gcg Ala 2865	ctc Leu	atc Ile	ctg Leu	8604
ctg Leu	gag Glu 2870	gca Ala	cag Gln	gcg Ala	gcc Ala	act Thr 2875	ggc Gly	ttc Phe	ctc Leu	ctg Leu	gac Asp 2880	ccc Pro	gtg Val	cag Gln	8649
aac Asn	cga Arg 2885	cgg Arg	ctg Leu	act Thr	gtc Val	aac Asn 2890	gag Glu	gct Ala	gtg Val	aag Lys	gaa Glu 2895	ggc Gly	gtg Val	gtg Val	8694
ggg Gly	ccc Pro 2900	gag Glu	ctg Leu	cac His	cac His	aag Lys 2905	ctg Leu	ctg Leu	tcg Ser	gcc Ala	gag Glu 2910	cgc Arg	gcc Ala	gtc Val	8739
acc Thr	ggc Gly 2915	tac Tyr	aag Lys	gac Asp	ccc Pro	tac Tyr 2920	acc Thr	ggt Gly	gag Glu	cag Gln	atc Ile 2925	tcg Ser	ctc Leu	ttc Phe	8784
cag Gln	gcc Ala 2930	atg Met	cag Gln	aag Lys	gag Glu	ctc Leu 2935	atc Ile	gtg Val	cgc Arg	gac Asp	cac His 2940	ggc Gly	atc Ile	cgc Arg	8829
ctg Leu	ctg Leu 2945	gag Glu	gcc Ala	cag Gln	atc Ile	gcc Ala 2950	acg Thr	ggc Gly	ggc Gly	atc Ile	atc Ile 2955	gac Asp	ccg Pro	gta Val	8874
cac His	agc Ser 2960	cac His	cgg Arg	ctg Leu	ccc Pro	gtg Val 2965	gac Asp	gtg Val	gcc Ala	tac Tyr	cag Gln 2970	cgc Arg	ggc Gly	tac Tyr	8919
ttc Phe	gac Asp 2975	gag Glu	gag Glu	atg Met	aac Asn	cgc Arg 2980	gtg Val	ctg Leu	gcc Ala	gac Asp	ccg Pro 2985	agc Ser	gac Asp	gac Asp	8964
acc Thr	aag Lys 2990	ggc Gly	ttc Phe	ttc Phe	gac Asp	ccc Pro 2995	aac Asn	acg Thr	cac His	gag Glu	aac Asn 3000	ctc Leu	acg Thr	tat Tyr	9009
ctg Leu	cag Gln 3005	ctg Leu	ctg Leu	gag Glu	cgc Arg	tgc Cys 3010	gtg Val	ctc Leu	gac Asp	ccc Pro	gag Glu 3015	aca Thr	ggc Gly	ctg Leu	9054
cgc Arg	ctg Leu 3020	ctg Leu	ccc Pro	ctc Leu	acg Thr	gac Asp 3025	cag Gln	gcc Ala	gcc Ala	agg Arg	ggc Gly 3030	ggg Gly	gag Glu	ctg Leu	9099
gtc Val	tac Tyr 3035	acc Thr	gac Asp	tcc Ser	gag Glu	gcc Ala 3040	cgg Arg	gac Asp	gtg Val	ttc Phe	gag Glu 3045	aaa Lys	gcc Ala	act Thr	9144
gtg Val	tct Ser 3050	gca Ala	ccg Pro	ttc Phe	ggg Gly	aag Lys 3055	ttc Phe	cag Gln	ggc Gly	agg Arg	acg Thr 3060	gtg Val	acc Thr	atc Ile	9189
tgg Trp	gag Glu 3065	ctc Leu	atc Ile	aac Asn	tcc Ser	gag Glu 3070	tac Tyr	ttc Phe	acg Thr	acg Thr	gag Glu 3075	cag Gln	cgg Arg	cgg Arg	9234
gat Asp	ctg Leu 3080	ctg Leu	agg Arg	cag Gln	ttc Phe	cgc Arg 3085	atg Met	ggc Gly	aag Lys	gtc Val	acc Thr 3090	gtg Val	gag Glu	aag Lys	9279
atc atc	aag atc	gtc atc	atc atc	acg gtg	gtg gtg	gag gag	gaa cac	gag cag	aaa aaa						9324

Ile	Ile	Lys	Ile	Val	Ile	Thr	Val	Val	Glu	Glu	His	Glu	Gln	Lys	
3095						3100					3105				
ggc	cag	ctc	tgc	ttc	gag	ggc	ctg	cgc	gcc	ctc	gta	ccc	gcc	gcc	9369
Gly	Gln	Leu	Cys	Phe	Glu	Gly	Leu	Arg	Ala	Leu	Val	Pro	Ala	Ala	
3110						3115					3120				
gag	ctg	ctc	gag	agc	ggg	gtc	ata	gac	cac	aac	ctc	tac	cgc	cag	9414
Glu	Leu	Leu	Glu	Ser	Gly	Val	Ile	Asp	His	Asn	Leu	Tyr	Arg	Gln	
3125						3130					3135				
ctg	cag	cgg	ggc	gag	cgc	tct	gtg	cga	gag	gtg	gcc	gag	gtg	gac	9459
Leu	Gln	Arg	Gly	Glu	Arg	Ser	Val	Arg	Glu	Val	Ala	Glu	Val	Asp	
3140						3145					3150				
gcc	gtg	cgg	cgg	gcc	ctg	cgg	ggc	acc	agc	gtc	att	gca	ggg	gtg	9504
Ala	Val	Arg	Arg	Ala	Leu	Arg	Gly	Thr	Ser	Val	Ile	Ala	Gly	Val	
3155						3160					3165				
tgg	ctg	gag	gag	aca	gga	cag	agg	ctg	agc	atc	tac	gaa	gcc	ctg	9549
Trp	Leu	Glu	Glu	Thr	Gly	Gln	Arg	Leu	Ser	Ile	Tyr	Glu	Ala	Leu	
3170						3175					3180				
aag	aag	gat	ctc	ctg	cct	cca	gag	gta	gca	gtg	gct	ctc	ctg	gag	9594
Lys	Lys	Asp	Leu	Leu	Pro	Pro	Glu	Val	Ala	Val	Ala	Leu	Leu	Glu	
3185						3190					3195				
gcc	cag	gcc	ggc	act	ggc	cac	atc	att	gac	ccc	gcc	acg	agc	gcc	9639
Ala	Gln	Ala	Gly	Thr	Gly	His	Ile	Ile	Asp	Pro	Ala	Thr	Ser	Ala	
3200						3205					3210				
cgg	ctc	acc	gtg	gac	gag	gcg	gtg	cgt	gct	ggc	ctg	gtg	ggg	ccc	9684
Arg	Leu	Thr	Val	Asp	Glu	Ala	Val	Arg	Ala	Gly	Leu	Val	Gly	Pro	
3215						3220					3225				
gag	ctg	cat	gag	aag	ctg	ctg	tcg	gcc	gag	aag	gcc	gtg	acg	ggc	9729
Glu	Leu	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Lys	Ala	Val	Thr	Gly	
3230						3235					3240				
tac	aag	gac	ccg	tac	tcg	ggg	cag	agt	gtt	tct	ctc	ttc	cag	gcc	9774
Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	Gln	Ser	Val	Ser	Leu	Phe	Gln	Ala	
3245						3250					3255				
ctg	aag	aag	ggc	ctc	atc	ccc	agg	gag	cag	ggc	ctg	cgt	ctg	ctt	9819
Leu	Lys	Lys	Gly	Leu	Ile	Pro	Arg	Glu	Gln	Gly	Leu	Arg	Leu	Leu	
3260						3265					3270				
gat	gcc	cag	ttg	tcc	acg	ggc	ggc	atc	gtt	gac	cca	agc	aag	agc	9864
Asp	Ala	Gln	Leu	Ser	Thr	Gly	Gly	Ile	Val	Asp	Pro	Ser	Lys	Ser	
3275						3280					3285				
cac	cgc	gtg	ccc	atg	gac	gtg	gcc	tac	gcc	cgg	ggc	tac	ctg	gac	9909
His	Arg	Val	Pro	Met	Asp	Val	Ala	Tyr	Ala	Arg	Gly	Tyr	Leu	Asp	
3290						3295					3300				
cag	gag	acc	agc	cga	gcc	ctg	tcg	gcg	ccc	caa	gac	gaa	gcc	aag	9954
Gln	Glu	Thr	Ser	Arg	Ala	Leu	Ser	Ala	Pro	Gln	Asp	Glu	Ala	Lys	
3305						3310					3315				
acc	tac	cac	gac	ccc	agc	acg	cag	gag	ccc	gtc	acc	tac	ggc	cag	9999
Thr	Tyr	His	Asp	Pro	Ser	Thr	Gln	Glu	Pro	Val	Thr	Tyr	Gly	Gln	
3320						3325					3330				
ctc	cag	cag	caa	tgc	cgg	ccc	gac	ccg	ctg	acg	ggg	ctg	agc	ctg	10044
Leu	Gln	Gln	Gln	Cys	Arg	Pro	Asp	Pro	Leu	Thr	Gly	Leu	Ser	Leu	
3335						3340					3345				
ctg	ccg	ctc	tcg	gaa	cag	gcc	gct	cag	gcc	cgg	cgg	gag	ggg	ctc	10089
Leu	Pro	Leu	Ser	Glu	Gln	Ala	Ala	Gln	Ala	Arg	Arg	Glu	Gly	Leu	

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3350		3355		3360											
tac	tcc	gag	ctg	cag	gcc	cgt	gag	acc	ttt	cag	aag	acc	ccc	gtg	10134
Tyr	Ser	Glu	Leu	Gln	Ala	Arg	Glu	Thr	Phe	Gln	Lys	Thr	Pro	Val	
	3365					3370					3375				
gag	gtc	ccc	gtg	ggc	agc	ttc	aag	ggc	agg	acg	gtg	acg	gtg	tgg	10179
Glu	Val	Pro	Val	Gly	Ser	Phe	Lys	Gly	Arg	Thr	Val	Thr	Val	Trp	
	3380					3385					3390				
gag	ctc	ctg	agc	tcc	gag	tac	ttc	acg	act	gag	cag	aga	cag	gag	10224
Glu	Leu	Leu	Ser	Ser	Glu	Tyr	Phe	Thr	Thr	Glu	Gln	Arg	Gln	Glu	
	3395					3400					3405				
ctg	ctg	cgg	cag	ttc	cgc	acg	ggt	acc	gtc	acc	gtg	gag	aag	atc	10269
Leu	Leu	Arg	Gln	Phe	Arg	Thr	Gly	Thr	Val	Thr	Val	Glu	Lys	Ile	
	3410					3415					3420				
atc	aag	atc	gtc	atc	acc	att	gtg	gag	gag	gtg	gag	act	gtg	cgg	10314
Ile	Lys	Ile	Val	Ile	Thr	Ile	Val	Glu	Glu	Val	Glu	Thr	Val	Arg	
	3425					3430					3435				
caa	gag	agg	ctg	tcg	ttc	agt	ggc	ctc	cgt	gcc	ccg	gtg	cca	gcc	10359
Gln	Glu	Arg	Leu	Ser	Phe	Ser	Gly	Leu	Arg	Ala	Pro	Val	Pro	Ala	
	3440					3445					3450				
agc	gag	ctc	ctg	gcc	tct	ggg	gtc	ctc	agc	agg	acc	caa	ttc	gag	10404
Ser	Glu	Leu	Leu	Ala	Ser	Gly	Val	Leu	Ser	Arg	Thr	Gln	Phe	Glu	
	3455					3460					3465				
cag	ctc	aag	gat	ggc	aag	acg	tcg	gtg	aaa	gac	cta	tca	gag	ctg	10449
Gln	Leu	Lys	Asp	Gly	Lys	Thr	Ser	Val	Lys	Asp	Leu	Ser	Glu	Leu	
	3470					3475					3480				
agc	tcc	gtg	cgg	acg	ctg	ctc	cag	ggc	agc	ggc	tgc	ctg	gcc	ggc	10494
Ser	Ser	Val	Arg	Thr	Leu	Leu	Gln	Gly	Ser	Gly	Cys	Leu	Ala	Gly	
	3485					3490					3495				
atc	tac	ctg	gag	gaa	tcc	aag	gag	aag	gtg	acc	atc	tac	gag	gcc	10539
Ile	Tyr	Leu	Glu	Glu	Ser	Lys	Glu	Lys	Val	Thr	Ile	Tyr	Glu	Ala	
	3500					3505					3510				
atg	cgg	cgg	ggc	ctg	ctc	agg	ccc	agc	acg	gcc	act	ctc	ctg	ctc	10584
Met	Arg	Arg	Gly	Leu	Leu	Arg	Pro	Ser	Thr	Ala	Thr	Leu	Leu	Leu	
	3515					3520					3525				
gag	gcg	cag	gcg	gcc	acg	ggc	ttc	ctc	atc	gac	ccc	gtg	cgc	aac	10629
Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Leu	Ile	Asp	Pro	Val	Arg	Asn	
	3530					3535					3540				
cag	cgc	ttg	tac	gtc	cat	gag	gct	gtg	aag	gcg	ggt	gtg	gtg	ggg	10674
Gln	Arg	Leu	Tyr	Val	His	Glu	Ala	Val	Lys	Ala	Gly	Val	Val	Gly	
	3545					3550					3555				
ccc	gag	ctg	cac	gag	aag	ctg	ctg	tcg	gcc	gag	aag	gcc	gtg	acc	10719
Pro	Glu	Leu	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Lys	Ala	Val	Thr	
	3560					3565					3570				
ggc	tac	aag	gac	ccg	tat	tcg	ggc	agc	acc	atc	tcg	ctc	ttc	cag	10764
Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	Ser	Thr	Ile	Ser	Leu	Phe	Gln	
	3575					3580					3585				
gcc	atg	aag	aag	ggc	ctg	gtc	ctt	cgg	gag	cat	ggc	atc	cgc	ctg	10809
Ala	Met	Lys	Lys	Gly	Leu	Val	Leu	Arg	Glu	His	Gly	Ile	Arg	Leu	
	3590					3595					3600				
ctg	gag	gcc	cag	atc	gcc	acg	ggt	ggc	atc	atc	gac	ccg	gtg	cac	10854
Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Val	His	
	3605					3610					3615				

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agc Ser	cac His 3620	cgg Arg	ctg Leu	ccc Pro	gtg Val	gac Asp 3625	gtg Val	gcc Ala	tac Tyr	cag Gln	cgc Arg 3630	ggc Gly	tac Tyr	ttc Phe	10899
gac Asp	gag Glu 3635	gag Glu	atg Met	aac Asn	cgc Arg	gtg Val 3640	ctg Leu	gcc Ala	gac Asp	ccg Pro	agc Ser 3645	gac Asp	gac Asp	acc Thr	10944
aag Lys	ggc Gly 3650	ttc Phe	ttc Phe	gac Asp	ccc Pro	aac Asn 3655	acg Thr	cat His	gag Glu	aac Asn	ctc Leu 3660	acg Thr	tac Tyr	ctg Leu	10989
cag Gln	ctg Leu 3665	ctg Leu	gag Glu	cgc Arg	tgt Cys	gtg Val 3670	gag Glu	gac Asp	ccc Pro	gag Glu	acg Thr 3675	ggc Gly	ctt Leu	cgc Arg	11034
ctg Leu	ctg Leu 3680	ccc Pro	ctg Leu	aaa Lys	ggc Gly	gcc Ala 3685	gag Glu	aag Lys	acg Thr	gag Glu	gtg Val 3690	gtg Val	gag Glu	tcc Ser	11079
acg Thr	cag Gln 3695	gtg Val	tac Tyr	acg Thr	gag Glu	gag Glu 3700	gag Glu	acc Thr	cgc Arg	agg Arg	gca Ala 3705	ttc Phe	gag Glu	gag Glu	11124
acg Thr	cag Gln 3710	atc Ile	gac Asp	atc Ile	cct Pro	ggc Gly 3715	agc Ser	gcc Ala	ggc Gly	cgc Arg	agc Ser 3720	ggc Gly	tcc Ser	act Thr	11169
atg Met	tcc Ser 3725	ctg Leu	tgg Trp	gag Glu	gtg Val	atg Met 3730	cag Gln	tcg Ser	gac Asp	ctg Leu	atc Ile 3735	ccg Pro	gag Glu	gag Glu	11214
cag Gln	cgg Arg 3740	acc Thr	cgg Arg	ctc Leu	atg Met	gcg Ala 3745	gac Asp	ttc Phe	cag Gln	gcc Ala	ggc Gly 3750	cgc Arg	gtg Val	act Thr	11259
aag Lys	gag Glu 3755	cgc Arg	atg Met	atc Ile	atc Ile	atc Ile 3760	atc Ile	atc Ile	gag Glu	atc Ile	atc Ile 3765	gag Glu	aag Lys	acc Thr	11304
gag Glu	atc Ile 3770	gtg Val	cgc Arg	cag Gln	cag Gln	aac Asn 3775	ctg Leu	gcc Ala	tcc Ser	tat Tyr	gac Asp 3780	tac Tyr	gtc Val	cgg Arg	11349
cgt Arg	cgt Arg 3785	ctc Leu	act Thr	gcc Ala	gag Glu	gac Asp 3790	ctg Leu	tac Tyr	gag Glu	gcc Ala	cgg Arg 3795	atc Ile	atc Ile	tcc Ser	11394
cgc Arg	gag Glu 3800	acc Thr	tac Tyr	agc Ser	ttc Phe	ctc Leu 3805	cgg Arg	gag Glu	ggg Gly	acc Thr	aag Lys 3810	agc Ser	ctc Leu	cga Arg	11439
cag Gln	gtg Val 3815	ctt Leu	gag Glu	gag Glu	gaa Glu	gag Glu 3820	gcc Ala	tca Ser	cgc Arg	tac Tyr	ctc Leu 3825	tac Tyr	ggc Gly	acg Thr	11484
ggc Gly	tgc Cys 3830	gtg Val	gcc Ala	ggc Gly	gtc Val	tac Tyr 3835	ctg Leu	ccg Pro	ggc Gly	tcc Ser	agg Arg 3840	cag Gln	aca Thr	ctc Leu	11529
acc Thr	atc Ile 3845	tac Tyr	cag Gln	gcc Ala	ctc Leu	aag Lys 3850	aag Lys	ggg Gly	ctg Leu	ctg Leu	aac Asn 3855	gcc Ala	gag Glu	gtg Val	11574
gcc Ala	cgc Arg 3860	ttc Phe	ctg Leu	ctg Leu	gag Glu	gcg Ala 3865	cag Gln	gcg Ala	gcc Ala	acg Thr	ggc Gly 3870	ttc Phe	ctc Leu	ctg Leu	11619

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gag Glu	ccc Pro 3875	gtg Val	aag Lys	ggc Gly	gag Glu	cgg Arg 3880	ctg Leu	act Thr	gtg Val	gac Asp	gag Glu 3885	gcc Ala	gtg Val	cgc Arg	11664
aaa Lys	ggc Gly 3890	ctg Leu	gtg Val	ggc Gly	ccc Pro	gag Glu 3895	ctg Leu	cat His	gac Asp	cgg Arg	ctg Leu 3900	ctc Leu	tca Ser	gcg Ala	11709
gag Glu	cgg Arg 3905	gcc Ala	gtg Val	acc Thr	ggc Gly	tac Tyr 3910	cgc Arg	gac Asp	ccc Pro	tac Tyr	acc Thr 3915	gag Glu	cag Gln	acc Thr	11754
atc Ile	tcc Ser 3920	ctc Leu	ttc Phe	cag Gln	gcc Ala	atg Met 3925	aag Lys	aag Lys	gac Asp	ctg Leu	atc Ile 3930	ccc Pro	acc Thr	gac Asp	11799
gag Glu	gcc Ala 3935	ctg Leu	cgg Arg	ctg Leu	cta Leu	gat Asp 3940	gcc Ala	cag Gln	ctg Leu	gcc Ala	acg Thr 3945	ggc Gly	ggc Gly	atc Ile	11844
gtg Val	gac Asp 3950	cca Pro	cac His	ctg Leu	ggc Gly	ttc Phe 3955	cac His	ctc Leu	ccc Pro	ttg Leu	gag Glu 3960	gtg Val	gcc Ala	tac Tyr	11889
cag Gln	cgt Arg 3965	ggc Gly	tac Tyr	ctc Leu	aac Asn	aaa Lys 3970	gac Asp	acg Thr	cac His	gac Asp	cag Gln 3975	ctc Leu	tcc Ser	gag Glu	11934
ccc Pro	agc Ser 3980	gag Glu	gtg Val	cgc Arg	agc Ser	tac Tyr 3985	ctg Leu	gat Asp	ccg Pro	tcc Ser	acg Thr 3990	gac Asp	gag Glu	cgc Arg	11979
ctc Leu	agc Ser 3995	tac Tyr	acg Thr	cag Gln	ctg Leu	ctc Leu 4000	cgg Arg	cgg Arg	tgc Cys	cgc Arg	cgc Arg 4005	cac His	gag Glu	acc Thr	12024
agc Ser	ggc Gly 4010	cag Gln	atg Met	ctc Leu	ctg Leu	cct Pro 4015	ctc Leu	tcg Ser	gac Asp	gcc Ala	cgc Arg 4020	aag Lys	ctg Leu	acc Thr	12069
ttc Phe	cgc Arg 4025	ggg Gly	ctg Leu	cgc Arg	aag Lys	cag Gln 4030	atc Ile	acg Thr	gtg Val	gag Glu	gag Glu 4035	ctg Leu	gtg Val	cgt Arg	12114
tcg Ser	cag Gln 4040	gtc Val	ctg Leu	gac Asp	gag Glu	gcc Ala 4045	acc Thr	gcg Ala	ctg Leu	cag Gln	ctg Leu 4050	cag Gln	gag Glu	ggc Gly	12159
ctg Leu	acg Thr 4055	tcg Ser	gtg Val	gag Glu	gag Glu	gtc Val 4060	acc Thr	aag Lys	aac Asn	ctg Leu	cag Gln 4065	aag Lys	ttc Phe	ctc Leu	12204
gag Glu	ggc Gly 4070	acg Thr	agc Ser	tgc Cys	att Ile	gcg Ala 4075	ggc Gly	gtc Val	ttc Phe	gtg Val	gat Asp 4080	gcc Ala	acc Thr	aag Lys	12249
gag Glu	cgg Arg 4085	ctg Leu	tcg Ser	gtg Val	tac Tyr	cag Gln 4090	gcc Ala	atg Met	aag Lys	aag Lys	ggc Gly 4095	atc Ile	atc Ile	cgc Arg	12294
cct Pro	ggc Gly 4100	acg Thr	gcc Ala	ttc Phe	gag Glu	ctc Leu 4105	ctg Leu	gag Glu	gcg Ala	cag Gln	gcg Ala 4110	gcc Ala	act Thr	ggc Gly	12339
tac Tyr	gtc Val 4115	atc Ile	gac Asp	ccc Pro	atc Ile	aag Lys 4120	ggg Gly	ctg Leu	aag Lys	ctg Leu	acc Thr 4125	gtg Val	gag Glu	gag Glu	12384
gcc	gtg	cgc	atg	ggc	atc	gtg	ggc	ccc	gag	ttc	aag	gac	aag	ctg	12429

Ala	Val	Arg	Met	Gly	Ile	Val	Gly	Pro	Glu	Phe	Lys	Asp	Lys	Leu	
	4130					4135					4140				
ctg	tcg	gcc	gag	cgc	gcc	gtc	att	ggc	tac	aag	gac	ccc	tac	tct	12474
Leu	Ser	Ala	Glu	Arg	Ala	Val	Ile	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	
	4145					4150					4155				
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Gly	Lys	Leu	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	Ile	
	4160					4165					4170				
ctg	aag	gac	cac	ggc	atc	cgc	ctc	ttg	gag	gcc	cag	att	gcc	acg	12564
Leu	Lys	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	
	4175					4180					4185				
ggc	ggc	atc	atc	gac	ccc	gag	gag	agc	cac	cgg	ttg	cct	gtg	gag	12609
Gly	Gly	Ile	Ile	Asp	Pro	Glu	Glu	Ser	His	Arg	Leu	Pro	Val	Glu	
	4190					4195					4200				
gtg	gcc	tac	aag	cgc	ggc	ctc	ttt	gat	gag	gag	atg	aac	gag	atc	12654
Val	Ala	Tyr	Lys	Arg	Gly	Leu	Phe	Asp	Glu	Glu	Met	Asn	Glu	Ile	
	4205					4210					4215				
ctg	act	gac	ccg	agc	gat	gac	acc	aag	ggc	ttc	ttc	gac	ccc	aac	12699
Leu	Thr	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	
	4220					4225					4230				
acg	gag	gag	aac	ctc	acg	tac	ctg	cag	ctg	atg	gag	cgc	tgc	atc	12744
Thr	Glu	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Met	Glu	Arg	Cys	Ile	
	4235					4240					4245				
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Thr	Asp	Pro	Gln	Thr	Gly	Leu	Cys	Leu	Leu	Pro	Leu	Lys	Glu	Lys	
	4250					4255					4260				
aag	cgg	gag	cgg	aag	acg	tcc	tcc	aag	tca	tcg	gtg	cgc	aag	cgc	12834
Lys	Arg	Glu	Arg	Lys	Thr	Ser	Ser	Lys	Ser	Ser	Val	Arg	Lys	Arg	
	4265					4270					4275				
cgc	gtg	gtg	atc	gtg	gat	ccc	gag	aca	ggc	aag	gag	atg	tcc	gtg	12879
Arg	Val	Val	Ile	Val	Asp	Pro	Glu	Thr	Gly	Lys	Glu	Met	Ser	Val	
	4280					4285					4290				
tac	gag	gcg	tac	cgc	aag	ggc	ctc	atc	gac	cac	cag	acg	tac	ctg	12924
Tyr	Glu	Ala	Tyr	Arg	Lys	Gly	Leu	Ile	Asp	His	Gln	Thr	Tyr	Leu	
	4295					4300					4305				
gag	cta	tcc	gag	cag	gag	tgc	gag	tgg	gaa	gag	atc	acc	atc	tcg	12969
Glu	Leu	Ser	Glu	Gln	Glu	Cys	Glu	Trp	Glu	Glu	Ile	Thr	Ile	Ser	
	4310					4315					4320				
tcc	tcg	gac	ggc	gtg	gtc	aag	tcc	atg	atc	atc	gac	cgc	cgc	tca	13014
Ser	Ser	Asp	Gly	Val	Val	Lys	Ser	Met	Ile	Ile	Asp	Arg	Arg	Ser	
	4325					4330					4335				
ggc	cgc	cag	tac	gac	atc	gac	gag	gcc	atc	gcc	agg	aac	ctc	atc	13059
Gly	Arg	Gln	Tyr	Asp	Ile	Asp	Glu	Ala	Ile	Ala	Arg	Asn	Leu	Ile	
	4340					4345					4350				
gac	cgc	tca	gca	ctg	gac	cag	tac	cgc	gcg	ggc	acg	ctc	tcc	atc	13104
Asp	Arg	Ser	Ala	Leu	Asp	Gln	Tyr	Arg	Ala	Gly	Thr	Leu	Ser	Ile	
	4355					4360					4365				
acg	gag	ttc	gcg	gac	atg	ctg	tca	ggc	aac	gct	ggc	ggc	ttc	cgc	13149
Thr	Glu	Phe	Ala	Asp	Met	Leu	Ser	Gly	Asn	Ala	Gly	Gly	Phe	Arg	
	4370					4375					4380				
tcc	cgt	tcc	tct	tcc	gtg	ggc	tcc	tcc	tcc	tcc	tac	ccc	atc	agc	13194
Ser	Arg	Ser	Ser	Ser	Val	Gly	Ser	Ser	Ser	Ser	Tyr	Pro	Ile	Ser	

## 4395

ccc Pro	gcc Ala 4400	acc Thr	tcc Ser	agg Arg	acc Thr	cag Gln 4405	gcg Ala	gcc Ala	tcc Ser	tgg Trp	tca Ser 4410	gac Asp	ccc Pro	acc Thr	13239
gag Glu	gag Glu 4415	acg Thr	ggc Gly	ccc Pro	gtg Val	gcc Ala 4420	ggc Gly	atc Ile	ctg Leu	gac Asp	acg Thr 4425	gaa Glu	acg Thr	ctg Leu	13284
gag Glu	aag Lys 4430	gtg Val	tcc Ser	atc Ile	acg Thr	gag Glu 4435	gcc Ala	atg Met	cgc Arg	cgc Arg	aac Asn 4440	ctg Leu	gtg Val	gac Asp	13329
aac Asn	atc Ile 4445	acc Thr	ggg Gly	cag Gln	cgg Arg	ctg Leu 4450	ctg Leu	gag Glu	gcc Ala	cag Gln	gcc Ala 4455	tgc Cys	acg Thr	ggc Gly	13374
ggc Gly	atc Ile 4460	atc Ile	gac Asp	ccc Pro	agc Ser	agc Ser 4465	ggt Gly	gaa Glu	cgc Arg	ttc Phe	ccc Pro 4470	gtc Val	acg Thr	gac Asp	13419
ccc Ala	gtc Val 4475	agc Ser	cgg Arg	ggc Gly	ttg Leu	gtg Val 4480	gac Asp	aag Lys	atc Ile	atg Met	gtg Val 4485	gac Asp	cgc Arg	atc Ile	13464
aac Asn	ctg Leu 4490	gcg Ala	cag Gln	aag Lys	gcc Ala	ttc Phe 4495	tgc Cys	ggc Gly	ttc Phe	gag Glu	gac Asp 4500	ccg Pro	cgc Arg	acc Thr	13509
aag Lys	acc Thr 4505	aag Lys	atg Met	tcg Ser	gct Ala	gca Ala 4510	cag Gln	gcc Ala	ctg Leu	aag Lys	aag Lys 4515	ggc Gly	tgg Trp	ctg Leu	13554
tac Tyr	tat Tyr 4520	gag Glu	gcg Ala	ggc Gly	cag Gln	cgc Arg 4525	ttc Phe	ctg Leu	gag Glu	gcg Ala	cag Gln 4530	tac Tyr	ctg Leu	acg Thr	13599
ggc Gly	ggc Gly 4535	ctc Leu	atc Ile	gag Glu	ccc Pro	gac Asp 4540	gtg Val	ccg Pro	ggc Gly	cgc Arg	gtg Val 4545	ccc Pro	ctc Leu	gac Asp	13644
gag Glu	gcc Ala 4550	ctg Leu	cag Gln	cgg Arg	ggc Gly	atg Met 4555	gtg Val	gac Asp	gcc Ala	cgc Arg	aca Thr 4560	gcc Ala	cag Gln	aag Lys	13689
ctg Leu	cgg Arg 4565	gac Asp	gtc Val	ggc Gly	gcc Ala	tac Tyr 4570	tcc Ser	aag Lys	tac Tyr	ctc Leu	acc Thr 4575	tgc Cys	ccc Pro	aag Lys	13734
acc Thr	aag Lys 4580	ctc Leu	aag Lys	atc Ile	tcg Ser	tac Tyr 4585	aag Lys	gac Asp	gcg Ala	ctg Leu	gac Asp 4590	cgc Arg	agc Ser	atg Met	13779
gtg Val	gag Glu 4595	gag Glu	ggc Gly	acg Thr	ggg Gly	ctg Leu 4600	cgg Arg	ctg Leu	ctg Leu	gag Glu	gcc Ala 4605	gcc Ala	gcc Ala	cag Gln	13824
tcc Ser	agc Ser 4610	aag Lys	ggc Gly	tac Tyr	tac Tyr	agc Ser 4615	ccc Pro	tac Tyr	agc Ser	gtc Val	agc Ser 4620	ggc Gly	tcc Ser	ggc Gly	13869
tcg Ser	gcc Ala 4625	gcc Ala	ggc Gly	tcg Ser	cgc Arg	tcc Ser 4630	ggc Gly	tcg Ser	cgc Arg	acg Thr	ggc Gly 4635	tcc Ser	cgg Arg	gct Ala	13914
ggc Gly	tcc Ser 4640	cgc Arg	cgg Arg	ggc Gly	agc Ser	ttc Phe 4645	gac Asp	gcc Ala	acc Thr	ggc Gly	tcc Ser 4650	ggt Gly	ttc Phe	tcc Ser	13959



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atg acc ttc tcc tcg tcc tcc tac tct tcc tca ggc tac ggc cgc 14004  
Met Thr Phe Ser Ser Ser Ser Tyr Ser Ser Ser Gly Tyr Gly Arg  
4655 4660 4665

cgc tac gcc tca ggg ccc gtg tcc tcc ctg ggg ggc ccc gag tcc 14049  
Arg Tyr Ala Ser Gly Pro Val Ser Ser Leu Gly Gly Pro Glu Ser  
4670 4675 4680

gcg gcg gcc 14058  
Ala Ala Ala  
4685

<210> 78  
<211> 4686  
<212> PRT  
<213> Canis familiaris

<400> 78

Met Val Ala Gly Met Leu Met Pro Arg Asp Gln Leu Arg Ala Val Tyr  
1 5 10 15

Glu Val Leu Phe Arg Glu Gly Val Met Val Ala Lys Lys Asp Arg Arg  
20 25 30

Pro Arg Ser Leu His Pro His Val Pro Gly Val Thr Asn Leu Gln Val  
35 40 45

Met Arg Ala Met Ala Ser Leu Arg Ala Arg Gly Leu Val Arg Glu Thr  
50 55 60

Phe Ala Trp Arg His Phe Tyr Trp Tyr Leu Thr Asn Glu Gly Ile Ala  
65 70 75 80

His Leu Arg Gln Tyr Leu His Leu Pro Pro Glu Ile Val Pro Ala Ser  
85 90 95

Leu Gln Arg Val Arg Arg Pro Val Ala Met Val Met Pro Ala Arg Arg  
100 105 110

Ile Pro His Val Gln Ser Val Gln Gly Pro Leu Ser Cys Pro Pro Lys  
115 120 125

Trp Gly Pro Val Pro Thr Glu Asp Pro Ala His Glu Glu Arg Arg Val  
130 135 140

Tyr Arg Arg Lys Glu Pro Glu Glu Gly Ala Ser Glu Pro Pro Val Val  
145 150 155 160

Pro Ala Thr Thr Pro Gly Asn Leu Ala Arg Pro Gly Pro Lys Pro Ala  
165 170 175

Pro Ala Thr Asp Glu Arg Asp Arg Val Gln Lys Lys Thr Phe Thr Lys  
180 185 190

Trp Val Asn Lys His Leu Ile Lys Ala Gln Arg His Ile Ser Asp Leu  
195 200 205

Tyr Glu Asp Leu Arg Asp Gly His Asn Leu Ile Ser Leu Leu Glu Val  
210 215 220

Leu Ser Gly Asp Ser Leu Pro Arg Glu Lys Gly Arg Met Arg Phe His  
225 230 235 240

Lys Leu Gln Asn Val Gln Ile Ala Leu Asp Tyr Leu Arg His Arg Gln  
245 250 255

Val Lys Leu Val Asn Ile Arg Asn Asp Asp Ile Ala Asp Gly Asn Pro  
260 265 270

Lys Leu Thr Leu Gly Leu Ile Trp Thr Ile Ile Leu His Phe Gln Ile  
275 280 285

Ser Asp Ile Gln Val Ser Gly Gln Ser Glu Asp Met Thr Ala Lys Glu  
290 295 300

Lys Leu Leu Leu Trp Ser Gln Arg Met Val Glu Gly Tyr Gln Gly Leu  
305 310 315 320

Arg Cys Asp Asn Phe Thr Ser Ser Trp Arg Asp Gly Arg Leu Phe Asn  
325 330 335

Ala Ile Ile His Arg His Arg Pro Met Leu Ile Asp Met Ser Lys Val  
340 345 350

Tyr Arg Gln Thr Asn Leu Glu Asn Leu Asp Gln Ala Phe Ser Val Ala  
355 360 365

Glu Arg Asp Leu Gly Val Thr Arg Leu Leu Asp Pro Glu Asp Val Asp  
370 375 380

Val Pro Gln Pro Asp Glu Lys Ser Ile Ile Thr Tyr Val Ser Ser Leu  
385 390 395 400

Tyr Asp Ala Met Pro Arg Val Pro Asp Val Gln Asp Gly Val Lys Ala  
405 410 415

Asn Glu Leu Gln Leu Arg Trp Gln Glu Tyr Arg Glu Leu Val Val Leu  
420 425 430

Leu Leu Gln Trp Met Arg His His Thr Ala Ala Phe Glu Glu His Arg  
435 440 445

Phe Pro Ser Ser Phe Glu Glu Ile Glu Ile Leu Trp Cys Gln Phe Leu  
450 455 460

Lys Phe Lys Glu Thr Glu Leu Pro Ala Lys Glu Ala Asp Lys Asn Arg  
Seite 390

465 470 475 480  
 Ser Lys Gly Ile Tyr Gln Ser Leu Glu Gly Ala Val Gln Ala Gly Gln  
 485 490 495  
 Leu Lys Val Pro Pro Gly Tyr His Pro Leu Asp Val Glu Lys Glu Trp  
 500 505 510  
 Gly Lys Leu His Val Ala Ile Leu Asp Arg Glu Lys Gln Leu Arg Ser  
 515 520 525  
 Glu Phe Glu Arg Leu Glu Cys Leu Gln Arg Ile Val Ser Lys Leu Gln  
 530 535 540  
 Met Glu Ala Gly Leu Cys Glu Glu Gln Leu Asn His Ala Asp Ala Leu  
 545 550 555 560  
 Leu Gln Ser Asp Val Arg Leu Leu Ala Ala Ser Lys Ala Pro Gln Arg  
 565 570 575  
 Ala Ala Glu Val Glu Arg Asp Leu Asp Lys Ala Asp Gly Met Ile Arg  
 580 585 590  
 Leu Leu Phe Asn Asp Val Gln Thr Leu Lys Asp Gly Arg His Pro Gln  
 595 600 605  
 Gly Glu Gln Met Tyr Arg Arg Val Tyr Arg Leu His Glu Arg Leu Val  
 610 615 620  
 Ala Ile Arg Thr Glu Tyr Asn Leu Arg Leu Lys Ser Gly Val Ala Ala  
 625 630 635 640  
 Pro Val Thr Gln Val Thr Met Gln Thr Thr Gln Arg Arg Pro Glu Leu  
 645 650 655  
 Glu Asp Ala Thr Leu Arg Tyr Leu Gln Asp Leu Leu Ala Trp Val Glu  
 660 665 670  
 Glu Asn Gln Arg Arg Val Asp Ser Ala Glu Trp Gly Gly Asp Leu Pro  
 675 680 685  
 Ser Val Glu Ala Gln Leu Gly Ser His Arg Gly Leu His Gln Ser Ile  
 690 695 700  
 Asp Glu Phe Arg Ala Lys Ile Glu Arg Ala Arg Ala Asp Glu Gly Gln  
 705 710 715 720  
 Leu Ser Pro Ala Pro Arg Gly Thr Tyr Arg Asp Cys Leu Gly Arg Leu  
 725 730 735  
 Asp Leu Gln Tyr Ala Lys Leu Leu Asn Ser Ser Lys Ala Arg Leu Arg  
 740 745 750

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Ser Leu Glu Ser Leu His Gly Phe Val Ala Ala Ala Thr Lys Glu Leu  
755 760 765

Met Trp Leu Ser Glu Lys Glu Glu Glu Glu Val Gly Phe Asp Trp Gly  
770 775 780

Glu His Asn Ser Asn Met Ala Ala Lys Lys Glu Ser Tyr Ser Ala Leu  
785 790 795 800

Met Arg Glu Leu Glu Val Lys Glu Lys Lys Ile Lys Glu Ile Gln Ser  
805 810 815

Thr Gly Asp Arg Leu Leu Arg Glu Gly His Pro Ala Arg Pro Thr Val  
820 825 830

Glu Ser Phe Gln Ala Ala Leu Gln Thr Gln Trp Ser Trp Met Leu Gln  
835 840 845

Leu Cys Cys Cys Ile Glu Ala His Leu Lys Glu Asn Thr Ala Tyr Phe  
850 855 860

Gln Phe Phe Ser Asp Val Arg Glu Thr Glu Glu Gln Leu Arg Lys Leu  
865 870 875 880

Gln Glu Met Leu Arg Arg Lys Tyr Ile Cys Asp Arg Ser Ile Thr Val  
885 890 895

Thr Arg Leu Glu Asp Leu Leu Gln Asp Ala Gln Asp Glu Lys Glu Gln  
900 905 910

Leu Asn Glu Tyr Arg Ala His Leu Ser Gly Leu Ala Lys Arg Ala Lys  
915 920 925

Ala Val Val Gln Leu Lys Pro Arg Asp Gln Ala Gln Pro Val Arg Gly  
930 935 940

Leu Val Pro Leu Gln Ala Val Cys Asp Tyr Lys Gln Val Glu Val Thr  
945 950 955 960

Val His Lys Gly Asp Gln Tyr Gln Leu Leu Gly Pro Ala Gln Pro Ala  
965 970 975

His Trp Lys Val Leu Ser Ser Ser Gly Ser Glu Ala Ala Val Pro Ser  
980 985 990

Val Cys Phe Leu Val Pro Pro Pro Asn Gln Glu Ala Gln Glu Ala Val  
995 1000 1005

Ser Arg Leu Glu Ala Gln His Gln Ala Leu Val Ala Leu Trp His  
1010 1015 1020

PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Gln Leu His Val Asp Met Lys Ser Leu Leu Ala Trp Gln Cys Leu  
1025 1030 1035

Ser Arg Asp Val Gln Leu Ile Arg Ser Trp Ser Leu Val Thr Phe  
1040 1045 1050

Arg Thr Leu Lys Pro Glu Glu Gln Arg Gln Ala Leu Arg Ser Leu  
1055 1060 1065

Glu Leu His Tyr Gln Ala Phe Leu Arg Asp Ser Gln Asp Ala Gly  
1070 1075 1080

Gly Phe Gly Pro Glu Asp Arg Leu Gln Ala Glu Arg Glu Tyr Gly  
1085 1090 1095

Ser Cys Ser Arg His Tyr Gln Gln Leu Leu Gln Ser Ala Glu Gln  
1100 1105 1110

Gly Ala Gln Glu Glu Ser Arg Cys Gln Arg Cys Ile Ser Glu Leu  
1115 1120 1125

Lys Asp Ile Arg Leu Gln Leu Glu Ala Cys Glu Thr Arg Thr Val  
1130 1135 1140

His Arg Leu Arg Leu Pro Leu Asp Lys Glu Pro Ala Arg Glu Cys  
1145 1150 1155

Ala Gln Arg Ile Ala Glu Gln Gln Lys Ala Gln Ala Glu Val Glu  
1160 1165 1170

Gly Leu Gly Lys Gly Val Ala Arg Leu Ser Ala Glu Ala Glu Lys  
1175 1180 1185

Val Leu Ala Leu Pro Glu Pro Ser Pro Ala Ala Pro Thr Leu Arg  
1190 1195 1200

Ser Glu Leu Glu Leu Thr Leu Gly Lys Leu Glu Gln Val Arg Ser  
1205 1210 1215

Leu Ser Ala Ile Tyr Leu Glu Lys Leu Lys Thr Ile Ser Leu Val  
1220 1225 1230

Ile Arg Ser Thr Gln Gly Ala Glu Glu Val Leu Arg Ala His Glu  
1235 1240 1245

Glu Gln Leu Lys Glu Ala Gln Ala Val Pro Ala Thr Leu Pro Asp  
1250 1255 1260

Leu Glu Ala Thr Lys Ala Ala Leu Lys Lys Leu Arg Val Gln Ala  
1265 1270 1275

Glu Ala Gln Gln Pro Val Phe Asp Ala Leu Arg Asp Glu Leu Arg  
 1280 1285 1290  
  
 Gly Ala Gln Glu Val Gly Glu Arg Leu Gln Arg Gln His Gly Glu  
 1295 1300 1305  
  
 Arg Asp Val Glu Val Glu Arg Trp Arg Glu Arg Val Ala Pro Leu  
 1310 1315 1320  
  
 Leu Glu Arg Trp Gln Ala Ala Leu Ala Gln Thr Asp Val Arg Gln  
 1325 1330 1335  
  
 Arg Glu Leu Glu Gln Leu Gly Arg Gln Leu Arg Tyr Tyr Arg Glu  
 1340 1345 1350  
  
 Ser Ala Asp Pro Leu Gly Thr Trp Leu Gln Asp Ala Lys Gln Arg  
 1355 1360 1365  
  
 Gln Glu Arg Ile Gln Ala Val Pro Leu Ala Asn Ser Gln Ala Val  
 1370 1375 1380  
  
 Arg Glu Gln Leu Gln Gln Glu Lys Glu Leu Leu Glu Glu Ile Glu  
 1385 1390 1395  
  
 Arg Tyr Gly Glu Lys Val Asp Glu Cys Gln Gln Leu Ala Lys Gln  
 1400 1405 1410  
  
 Tyr Ile Asn Ala Ile Lys Asp Tyr Glu Leu Gln Leu Val Thr Tyr  
 1415 1420 1425  
  
 Lys Ala Gln Leu Glu Pro Val Ala Ser Pro Ala Lys Lys Pro Lys  
 1430 1435 1440  
  
 Val Gln Ser Gly Ser Glu Ser Val Ile Gln Glu Tyr Val Asp Leu  
 1445 1450 1455  
  
 Arg Thr Arg Tyr Ser Glu Leu Thr Thr Leu Thr Ser Gln Tyr Ile  
 1460 1465 1470  
  
 Lys Phe Ile Arg Glu Thr Leu Arg Arg Met Glu Glu Glu Glu Arg  
 1475 1480 1485  
  
 Leu Ala Glu Gln Gln Arg Ala Glu Glu Arg Glu Arg Leu Ala Glu  
 1490 1495 1500  
  
 Val Glu Ala Ala Leu Glu Lys Gln Arg Gln Leu Ala Glu Ala His  
 1505 1510 1515  
  
 Ala Gln Ala Lys Ala Gln Ala Glu Arg Glu Ala Glu Glu Leu Gln  
 1520 1525 1530  
  
 Arg Arg Met Gln Glu Glu Val Ala Arg Arg Glu Glu Ala Ala Val  
 1535 1540 1545

1535

1540

1545

Asp Ala Gln Gln Gln Lys Arg Ser Ile Gln Glu Glu Leu Gln His  
 1550 1555 1560

Leu Arg Gln Ser Ser Glu Ala Glu Ile Gln Ala Lys Ala Arg Gln  
 1565 1570 1575

Val Glu Ala Ala Glu Arg Ser Arg Val Arg Ile Glu Glu Glu Ile  
 1580 1585 1590

Arg Val Val Arg Leu Gln Leu Glu Ala Thr Glu Arg Gln Arg Gly  
 1595 1600 1605

Gly Ala Glu Gly Glu Leu Gln Ala Leu Arg Ala Arg Ala Glu Glu  
 1610 1615 1620

Ala Glu Ala Gln Lys Arg Gln Ala Gln Glu Glu Ala Glu Arg Leu  
 1625 1630 1635

Arg Arg Gln Val Gln Asp Glu Ser Gln Arg Lys Arg Gln Ala Glu  
 1640 1645 1650

Ala Glu Leu Ala Leu Arg Val Lys Ala Glu Ala Glu Ala Ala Arg  
 1655 1660 1665

Glu Lys Gln Arg Ala Leu Gln Ala Leu Glu Asp Val Arg Leu Gln  
 1670 1675 1680

Ala Glu Glu Ala Glu Arg Arg Leu Arg Gln Ala Glu Ala Asp Arg  
 1685 1690 1695

Ala Arg Gln Val Gln Val Ala Leu Glu Thr Ala Gln Arg Ser Ala  
 1700 1705 1710

Glu Val Glu Leu Gln Ser Lys Arg Ala Ser Phe Ala Glu Lys Thr  
 1715 1720 1725

Ala Gln Leu Glu Arg Thr Leu Gln Glu Glu His Val Ala Val Ala  
 1730 1735 1740

Gln Leu Arg Glu Glu Ala Glu Arg Arg Ala Gln Gln Gln Ala Glu  
 1745 1750 1755

Ala Glu Arg Ala Arg Glu Glu Ala Glu Gln Glu Leu Glu Arg Trp  
 1760 1765 1770

Arg Leu Lys Ala Asn Glu Ala Leu Arg Leu Arg Leu Gln Ala Glu  
 1775 1780 1785

Glu Val Ala Gln Gln Lys Ser Leu Ala Gln Ala Glu Ala Glu Lys  
 1790 1795 1800

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Gln	Lys	Glu	Glu	Ala	Glu	Arg	Glu	Ala	Arg	Arg	Arg	Gly	Lys	Ala
	1805					1810					1815			
Glu	Glu	Gln	Ala	Val	Arg	Gln	Arg	Glu	Leu	Ala	Glu	Gln	Glu	Leu
	1820					1825					1830			
Glu	Lys	Gln	Arg	Gln	Leu	Ala	Glu	Gly	Thr	Ala	Gln	Gln	Arg	Leu
	1835					1840					1845			
Val	Ala	Glu	Gln	Glu	Leu	Ile	Arg	Leu	Arg	Ala	Glu	Thr	Glu	Gln
	1850					1855					1860			
Gly	Glu	Gln	Gln	Arg	Gln	Leu	Leu	Glu	Glu	Glu	Leu	Ala	Arg	Leu
	1865					1870					1875			
Gln	Arg	Glu	Ala	Ala	Ala	Ala	Thr	His	Lys	Arg	Gln	Glu	Leu	Glu
	1880					1885					1890			
Ala	Glu	Leu	Ala	Lys	Val	Arg	Ala	Glu	Met	Glu	Val	Leu	Leu	Ala
	1895					1900					1905			
Ser	Lys	Ala	Arg	Ala	Glu	Glu	Glu	Ser	Arg	Ser	Thr	Ser	Glu	Lys
	1910					1915					1920			
Ser	Lys	Gln	Arg	Leu	Glu	Ala	Glu	Ala	Ser	Arg	Phe	Arg	Glu	Leu
	1925					1930					1935			
Ala	Glu	Glu	Ala	Ala	Arg	Leu	Arg	Ala	Leu	Ala	Glu	Glu	Thr	Lys
	1940					1945					1950			
Arg	Gln	Arg	Gln	Leu	Ala	Glu	Glu	Asp	Ala	Ala	Arg	Gln	Arg	Ala
	1955					1960					1965			
Glu	Ala	Glu	Arg	Val	Leu	Ala	Glu	Lys	Leu	Ala	Ala	Ile	Ser	Glu
	1970					1975					1980			
Ala	Thr	Arg	Leu	Lys	Thr	Glu	Ala	Glu	Ile	Ala	Leu	Lys	Glu	Lys
	1985					1990					1995			
Glu	Ala	Glu	Asn	Glu	Arg	Leu	Arg	Arg	Leu	Ala	Glu	Asp	Glu	Ala
	2000					2005					2010			
Phe	Gln	Arg	Arg	Arg	Leu	Glu	Glu	Gln	Ala	Ala	Gln	His	Lys	Ala
	2015					2020					2025			
Asp	Ile	Glu	Glu	Arg	Leu	Ala	Gln	Leu	Arg	Lys	Ala	Ser	Glu	Asn
	2030					2035					2040			
Glu	Leu	Glu	Arg	Gln	Lys	Gly	Leu	Val	Glu	Asp	Thr	Leu	Arg	Gln
	2045					2050					2055			



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Arg Arg Gln Val Glu Glu Glu Ile Leu Ala Leu Lys Ala Ser Phe  
2060 2065 2070

Glu Lys Ala Ala Ala Gly Lys Ala Glu Leu Glu Leu Glu Leu Gly  
2075 2080 2085

Arg Ile Arg Ser Asn Ala Glu Asp Thr Leu Arg Ser Lys Glu Gln  
2090 2095 2100

Ala Glu Leu Glu Ala Thr Arg Gln Arg Gln Leu Ala Ala Glu Glu  
2105 2110 2115

Glu Gln Arg Arg Arg Glu Ala Glu Glu Arg Val Gln Lys Ser Leu  
2120 2125 2130

Ala Ala Glu Glu Glu Ala Ala Arg Gln Arg Lys Ser Ala Leu Glu  
2135 2140 2145

Glu Val Glu Arg Leu Lys Ala Lys Val Glu Glu Ala Arg Arg Leu  
2150 2155 2160

Arg Glu Arg Ala Glu Gln Glu Ser Ala Arg Gln Leu Gln Leu Ala  
2165 2170 2175

Gln Glu Ala Ala Gln Lys Arg Leu Gln Ala Glu Glu Lys Ala His  
2180 2185 2190

Ala Phe Ala Val Gln Gln Lys Glu Gln Glu Leu Gln Gln Thr Leu  
2195 2200 2205

Gln Gln Glu Gln Ser Met Leu Glu Arg Leu Arg Ala Glu Ala Glu  
2210 2215 2220

Ala Ala Arg Arg Ala Ala Glu Glu Ala Glu Glu Ala Arg Glu Arg  
2225 2230 2235

Ala Glu Arg Glu Ala Ala Gln Ser Arg Arg Gln Val Glu Glu Ala  
2240 2245 2250

Glu Arg Leu Lys Gln Leu Ala Glu Glu Gln Ala Gln Ala Gln Ala  
2255 2260 2265

Gln Ala Gln Ala Ala Ala Glu Lys Leu Arg Lys Glu Ala Glu Gln  
2270 2275 2280

Glu Ala Val Arg Arg Ala Gln Ala Glu Gln Ala Ala Leu Lys Gln  
2285 2290 2295

Lys Gln Val Ala Asp Ala Glu Met Glu Lys His Lys Lys Phe Ala  
2300 2305 2310

Glu Gln Thr Leu Arg Gln Lys Ala Gln Val Glu Gln Glu Leu Thr  
2315 2320 2325

Thr Leu Arg Leu Gln Leu Glu Glu Thr Asp His Gln Lys Ser Ile  
2330 2335 2340

Leu Asp Glu Glu Leu Gln Arg Leu Lys Ala Glu Val Thr Glu Ala  
2345 2350 2355

Ala Arg Gln Arg Asn Gln Val Glu Glu Glu Leu Phe Ser Val Arg  
2360 2365 2370

Val Gln Met Glu Glu Leu Ser Lys Leu Lys Ala Arg Ile Glu Ala  
2375 2380 2385

Glu Asn Arg Ala Leu Ile Leu Arg Asp Lys Asp Asn Thr Gln Arg  
2390 2395 2400

Phe Leu Gln Glu Glu Ala Glu Lys Met Lys Gln Val Ala Glu Glu  
2405 2410 2415

Ala Ala Arg Leu Ser Val Ala Ala Gln Glu Ala Ala Arg Leu Arg  
2420 2425 2430

Gln Leu Ala Glu Glu Asp Leu Ala Gln Gln Arg Ala Leu Ala Glu  
2435 2440 2445

Lys Met Leu Lys Glu Lys Met Gln Ala Val Gln Glu Ala Thr Arg  
2450 2455 2460

Leu Lys Ala Glu Ala Glu Leu Leu Gln Gln Gln Lys Glu Leu Ala  
2465 2470 2475

Gln Glu Gln Ala Arg Gln Leu Gln Glu Asp Lys Glu Gln Met Ala  
2480 2485 2490

Gln Gln Leu Ala Gln Glu Thr Gln Gly Phe Gln Arg Thr Leu Glu  
2495 2500 2505

Ala Glu Arg Gln Arg Gln Leu Glu Met Ser Ala Glu Ala Glu Arg  
2510 2515 2520

Leu Lys Leu Arg Val Ala Glu Met Ser Arg Ala Gln Ala Arg Ala  
2525 2530 2535

Glu Glu Asp Ala Gln Arg Phe Arg Lys Gln Ala Glu Glu Ile Gly  
2540 2545 2550

Glu Lys Leu His Arg Thr Glu Leu Ala Thr Gln Glu Lys Val Thr  
2555 2560 2565

Leu Val His Thr Leu Glu Ile Gln Arg Gln Gln Ser Asp His Asp

2570

2575

2580

Ala Glu Arg Leu Arg Ala Ala Ile Thr Glu Leu Glu Arg Glu Lys  
 2585 2590 2595

Glu Lys Leu Gln Glu Glu Ala Thr Leu Leu Gln Gln Lys Ser Glu  
 2600 2605 2610

Glu Met Gln Val Val Gln Gln Glu Gln Leu Leu Gln Glu Thr Arg  
 2615 2620 2625

Ala Leu Gln Glu Ser Phe Leu Ser Glu Lys Asp Arg Leu Leu Gln  
 2630 2635 2640

Arg Glu Arg Phe Ile Glu Gln Glu Lys Ala Lys Leu Glu Gln Leu  
 2645 2650 2655

Phe Arg Asp Glu Val Ala Lys Ala Gln Lys Leu Arg Glu Glu Gln  
 2660 2665 2670

Gln Arg Gln Gln Gln Gln Met Glu Gln Glu Arg Glu Gln Leu Val  
 2675 2680 2685

Ala Ser Met Glu Glu Ala Arg Gln Cys Gln Arg Glu Ala Glu Glu  
 2690 2695 2700

Gly Val Arg Arg Lys Gln Glu Glu Leu Gln Leu Leu Glu Gln Gln  
 2705 2710 2715

Arg Gln Gln Gln Glu Arg Leu Leu Ala Glu Glu Asn Gln Arg Leu  
 2720 2725 2730

Arg Glu Arg Leu Gln Arg Leu Glu Glu Glu His Arg Ala Ala Leu  
 2735 2740 2745

Ala His Ser Glu Glu Ile Ala Ala Ser Gln Ala Ala Ala Ala Lys  
 2750 2755 2760

Ala Leu Pro Asn Gly Arg Asp Ala Pro Asp Gly Pro Ala Val Glu  
 2765 2770 2775

Ala Glu Pro Glu His Met Phe Asp Gly Leu Arg Arg Lys Val Pro  
 2780 2785 2790

Ala Gln Arg Leu Gln Glu Val Gly Ile Leu Ser Ala Glu Glu Leu  
 2795 2800 2805

Gln Arg Leu Ala Gln Gly Arg Thr Thr Val Ala Glu Leu Ala Gln  
 2810 2815 2820

Arg Glu Asp Val Cys Gln Tyr Leu Gln Gly Arg Gly Gly Ile Ala  
 2825 2830 2835

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Gly	Leu	Leu	Leu	Lys	Pro	Ala	Asn	Glu	Lys	Leu	Ser	Ile	Tyr	Ala
	2840					2845					2850			
Ala	Leu	Arg	Arg	Gln	Leu	Leu	Ser	Pro	Gly	Thr	Ala	Leu	Ile	Leu
	2855					2860					2865			
Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Leu	Leu	Asp	Pro	Val	Gln
	2870					2875					2880			
Asn	Arg	Arg	Leu	Thr	Val	Asn	Glu	Ala	Val	Lys	Glu	Gly	Val	Val
	2885					2890					2895			
Gly	Pro	Glu	Leu	His	His	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val
	2900					2905					2910			
Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Thr	Gly	Glu	Gln	Ile	Ser	Leu	Phe
	2915					2920					2925			
Gln	Ala	Met	Gln	Lys	Glu	Leu	Ile	Val	Arg	Asp	His	Gly	Ile	Arg
	2930					2935					2940			
Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Val
	2945					2950					2955			
His	Ser	His	Arg	Leu	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg	Gly	Tyr
	2960					2965					2970			
Phe	Asp	Glu	Glu	Met	Asn	Arg	Val	Leu	Ala	Asp	Pro	Ser	Asp	Asp
	2975					2980					2985			
Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr
	2990					2995					3000			
Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Leu	Asp	Pro	Glu	Thr	Gly	Leu
	3005					3010					3015			
Arg	Leu	Leu	Pro	Leu	Thr	Asp	Gln	Ala	Ala	Arg	Gly	Gly	Glu	Leu
	3020					3025					3030			
Val	Tyr	Thr	Asp	Ser	Glu	Ala	Arg	Asp	Val	Phe	Glu	Lys	Ala	Thr
	3035					3040					3045			
Val	Ser	Ala	Pro	Phe	Gly	Lys	Phe	Gln	Gly	Arg	Thr	Val	Thr	Ile
	3050					3055					3060			
Trp	Glu	Leu	Ile	Asn	Ser	Glu	Tyr	Phe	Thr	Thr	Glu	Gln	Arg	Arg
	3065					3070					3075			
Asp	Leu	Leu	Arg	Gln	Phe	Arg	Met	Gly	Lys	Val	Thr	Val	Glu	Lys
	3080					3085					3090			

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Ile	Ile	Lys	Ile	Val	Ile	Thr	Val	Val	Glu	Glu	His	Glu	Gln	Lys
	3095					3100					3105			
Gly	Gln	Leu	Cys	Phe	Glu	Gly	Leu	Arg	Ala	Leu	Val	Pro	Ala	Ala
	3110					3115					3120			
Glu	Leu	Leu	Glu	Ser	Gly	Val	Ile	Asp	His	Asn	Leu	Tyr	Arg	Gln
	3125					3130					3135			
Leu	Gln	Arg	Gly	Glu	Arg	Ser	Val	Arg	Glu	Val	Ala	Glu	Val	Asp
	3140					3145					3150			
Ala	Val	Arg	Arg	Ala	Leu	Arg	Gly	Thr	Ser	Val	Ile	Ala	Gly	Val
	3155					3160					3165			
Trp	Leu	Glu	Glu	Thr	Gly	Gln	Arg	Leu	Ser	Ile	Tyr	Glu	Ala	Leu
	3170					3175					3180			
Lys	Lys	Asp	Leu	Leu	Pro	Pro	Glu	Val	Ala	Val	Ala	Leu	Leu	Glu
	3185					3190					3195			
Ala	Gln	Ala	Gly	Thr	Gly	His	Ile	Ile	Asp	Pro	Ala	Thr	Ser	Ala
	3200					3205					3210			
Arg	Leu	Thr	Val	Asp	Glu	Ala	Val	Arg	Ala	Gly	Leu	Val	Gly	Pro
	3215					3220					3225			
Glu	Leu	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Lys	Ala	Val	Thr	Gly
	3230					3235					3240			
Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	Gln	Ser	Val	Ser	Leu	Phe	Gln	Ala
	3245					3250					3255			
Leu	Lys	Lys	Gly	Leu	Ile	Pro	Arg	Glu	Gln	Gly	Leu	Arg	Leu	Leu
	3260					3265					3270			
Asp	Ala	Gln	Leu	Ser	Thr	Gly	Gly	Ile	Val	Asp	Pro	Ser	Lys	Ser
	3275					3280					3285			
His	Arg	Val	Pro	Met	Asp	Val	Ala	Tyr	Ala	Arg	Gly	Tyr	Leu	Asp
	3290					3295					3300			
Gln	Glu	Thr	Ser	Arg	Ala	Leu	Ser	Ala	Pro	Gln	Asp	Glu	Ala	Lys
	3305					3310					3315			
Thr	Tyr	His	Asp	Pro	Ser	Thr	Gln	Glu	Pro	Val	Thr	Tyr	Gly	Gln
	3320					3325					3330			
Leu	Gln	Gln	Gln	Cys	Arg	Pro	Asp	Pro	Leu	Thr	Gly	Leu	Ser	Leu
	3335					3340					3345			

Leu Pro Leu Ser Glu Gln Ala Ala Gln Ala Arg Arg Glu Gly Leu  
3350 3355 3360

Tyr Ser Glu Leu Gln Ala Arg Glu Thr Phe Gln Lys Thr Pro Val  
3365 3370 3375

Glu Val Pro Val Gly Ser Phe Lys Gly Arg Thr Val Thr Val Trp  
3380 3385 3390

Glu Leu Leu Ser Ser Glu Tyr Phe Thr Thr Glu Gln Arg Gln Glu  
3395 3400 3405

Leu Leu Arg Gln Phe Arg Thr Gly Thr Val Thr Val Glu Lys Ile  
3410 3415 3420

Ile Lys Ile Val Ile Thr Ile Val Glu Glu Val Glu Thr Val Arg  
3425 3430 3435

Gln Glu Arg Leu Ser Phe Ser Gly Leu Arg Ala Pro Val Pro Ala  
3440 3445 3450

Ser Glu Leu Leu Ala Ser Gly Val Leu Ser Arg Thr Gln Phe Glu  
3455 3460 3465

Gln Leu Lys Asp Gly Lys Thr Ser Val Lys Asp Leu Ser Glu Leu  
3470 3475 3480

Ser Ser Val Arg Thr Leu Leu Gln Gly Ser Gly Cys Leu Ala Gly  
3485 3490 3495

Ile Tyr Leu Glu Glu Ser Lys Glu Lys Val Thr Ile Tyr Glu Ala  
3500 3505 3510

Met Arg Arg Gly Leu Leu Arg Pro Ser Thr Ala Thr Leu Leu Leu  
3515 3520 3525

Glu Ala Gln Ala Ala Thr Gly Phe Leu Ile Asp Pro Val Arg Asn  
3530 3535 3540

Gln Arg Leu Tyr Val His Glu Ala Val Lys Ala Gly Val Val Gly  
3545 3550 3555

Pro Glu Leu His Glu Lys Leu Leu Ser Ala Glu Lys Ala Val Thr  
3560 3565 3570

Gly Tyr Lys Asp Pro Tyr Ser Gly Ser Thr Ile Ser Leu Phe Gln  
3575 3580 3585

Ala Met Lys Lys Gly Leu Val Leu Arg Glu His Gly Ile Arg Leu  
3590 3595 3600

Leu Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Val His

3605

3610

3615

Ser His Arg Leu Pro Val Asp Val Ala Tyr Gln Arg Gly Tyr Phe  
 3620 3625 3630

Asp Glu Glu Met Asn Arg Val Leu Ala Asp Pro Ser Asp Asp Thr  
 3635 3640 3645

Lys Gly Phe Phe Asp Pro Asn Thr His Glu Asn Leu Thr Tyr Leu  
 3650 3655 3660

Gln Leu Leu Glu Arg Cys Val Glu Asp Pro Glu Thr Gly Leu Arg  
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Leu Leu Pro Leu Lys Gly Ala Glu Lys Thr Glu Val Val Glu Ser  
 3680 3685 3690

Thr Gln Val Tyr Thr Glu Glu Glu Thr Arg Arg Ala Phe Glu Glu  
 3695 3700 3705

Thr Gln Ile Asp Ile Pro Gly Ser Ala Gly Arg Ser Gly Ser Thr  
 3710 3715 3720

Met Ser Leu Trp Glu Val Met Gln Ser Asp Leu Ile Pro Glu Glu  
 3725 3730 3735

Gln Arg Thr Arg Leu Met Ala Asp Phe Gln Ala Gly Arg Val Thr  
 3740 3745 3750

Lys Glu Arg Met Ile Ile Ile Ile Ile Glu Ile Ile Glu Lys Thr  
 3755 3760 3765

Glu Ile Val Arg Gln Gln Asn Leu Ala Ser Tyr Asp Tyr Val Arg  
 3770 3775 3780

Arg Arg Leu Thr Ala Glu Asp Leu Tyr Glu Ala Arg Ile Ile Ser  
 3785 3790 3795

Arg Glu Thr Tyr Ser Phe Leu Arg Glu Gly Thr Lys Ser Leu Arg  
 3800 3805 3810

Gln Val Leu Glu Glu Glu Glu Ala Ser Arg Tyr Leu Tyr Gly Thr  
 3815 3820 3825

Gly Cys Val Ala Gly Val Tyr Leu Pro Gly Ser Arg Gln Thr Leu  
 3830 3835 3840

Thr Ile Tyr Gln Ala Leu Lys Lys Gly Leu Leu Asn Ala Glu Val  
 3845 3850 3855

Ala Arg Phe Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Leu Leu  
 3860 3865 3870

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Glu	Pro	Val	Lys	Gly	Glu	Arg	Leu	Thr	Val	Asp	Glu	Ala	Val	Arg
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Lys	Gly	Leu	Val	Gly	Pro	Glu	Leu	His	Asp	Arg	Leu	Leu	Ser	Ala
	3890					3895					3900			
Glu	Arg	Ala	Val	Thr	Gly	Tyr	Arg	Asp	Pro	Tyr	Thr	Glu	Gln	Thr
	3905					3910					3915			
Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Asp	Leu	Ile	Pro	Thr	Asp
	3920					3925					3930			
Glu	Ala	Leu	Arg	Leu	Leu	Asp	Ala	Gln	Leu	Ala	Thr	Gly	Gly	Ile
	3935					3940					3945			
Val	Asp	Pro	His	Leu	Gly	Phe	His	Leu	Pro	Leu	Glu	Val	Ala	Tyr
	3950					3955					3960			
Gln	Arg	Gly	Tyr	Leu	Asn	Lys	Asp	Thr	His	Asp	Gln	Leu	Ser	Glu
	3965					3970					3975			
Pro	Ser	Glu	Val	Arg	Ser	Tyr	Leu	Asp	Pro	Ser	Thr	Asp	Glu	Arg
	3980					3985					3990			
Leu	Ser	Tyr	Thr	Gln	Leu	Leu	Arg	Arg	Cys	Arg	Arg	His	Glu	Thr
	3995					4000					4005			
Ser	Gly	Gln	Met	Leu	Leu	Pro	Leu	Ser	Asp	Ala	Arg	Lys	Leu	Thr
	4010					4015					4020			
Phe	Arg	Gly	Leu	Arg	Lys	Gln	Ile	Thr	Val	Glu	Glu	Leu	Val	Arg
	4025					4030					4035			
Ser	Gln	Val	Leu	Asp	Glu	Ala	Thr	Ala	Leu	Gln	Leu	Gln	Glu	Gly
	4040					4045					4050			
Leu	Thr	Ser	Val	Glu	Glu	Val	Thr	Lys	Asn	Leu	Gln	Lys	Phe	Leu
	4055					4060					4065			
Glu	Gly	Thr	Ser	Cys	Ile	Ala	Gly	Val	Phe	Val	Asp	Ala	Thr	Lys
	4070					4075					4080			
Glu	Arg	Leu	Ser	Val	Tyr	Gln	Ala	Met	Lys	Lys	Gly	Ile	Ile	Arg
	4085					4090					4095			
Pro	Gly	Thr	Ala	Phe	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly
	4100					4105					4110			
Tyr	Val	Ile	Asp	Pro	Ile	Lys	Gly	Leu	Lys	Leu	Thr	Val	Glu	Glu
	4115					4120					4125			



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Ala	Val	Arg	Met	Gly	Ile	Val	Gly	Pro	Glu	Phe	Lys	Asp	Lys	Leu
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Leu	Ser	Ala	Glu	Arg	Ala	Val	Ile	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser
	4145					4150					4155			
Gly	Lys	Leu	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	Ile
	4160					4165					4170			
Leu	Lys	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr
	4175					4180					4185			
Gly	Gly	Ile	Ile	Asp	Pro	Glu	Glu	Ser	His	Arg	Leu	Pro	Val	Glu
	4190					4195					4200			
Val	Ala	Tyr	Lys	Arg	Gly	Leu	Phe	Asp	Glu	Glu	Met	Asn	Glu	Ile
	4205					4210					4215			
Leu	Thr	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn
	4220					4225					4230			
Thr	Glu	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Met	Glu	Arg	Cys	Ile
	4235					4240					4245			
Thr	Asp	Pro	Gln	Thr	Gly	Leu	Cys	Leu	Leu	Pro	Leu	Lys	Glu	Lys
	4250					4255					4260			
Lys	Arg	Glu	Arg	Lys	Thr	Ser	Ser	Lys	Ser	Ser	Val	Arg	Lys	Arg
	4265					4270					4275			
Arg	Val	Val	Ile	Val	Asp	Pro	Glu	Thr	Gly	Lys	Glu	Met	Ser	Val
	4280					4285					4290			
Tyr	Glu	Ala	Tyr	Arg	Lys	Gly	Leu	Ile	Asp	His	Gln	Thr	Tyr	Leu
	4295					4300					4305			
Glu	Leu	Ser	Glu	Gln	Glu	Cys	Glu	Trp	Glu	Glu	Ile	Thr	Ile	Ser
	4310					4315					4320			
Ser	Ser	Asp	Gly	Val	Val	Lys	Ser	Met	Ile	Ile	Asp	Arg	Arg	Ser
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Gly	Arg	Gln	Tyr	Asp	Ile	Asp	Glu	Ala	Ile	Ala	Arg	Asn	Leu	Ile
	4340					4345					4350			
Asp	Arg	Ser	Ala	Leu	Asp	Gln	Tyr	Arg	Ala	Gly	Thr	Leu	Ser	Ile
	4355					4360					4365			
Thr	Glu	Phe	Ala	Asp	Met	Leu	Ser	Gly	Asn	Ala	Gly	Gly	Phe	Arg
	4370					4375					4380			

Ser Arg Ser Ser Ser Val Gly Ser Ser Ser Ser Tyr Pro Ile Ser  
4385 4390 4395

Pro Ala Thr Ser Arg Thr Gln Ala Ala Ser Trp Ser Asp Pro Thr  
4400 4405 4410

Glu Glu Thr Gly Pro Val Ala Gly Ile Leu Asp Thr Glu Thr Leu  
4415 4420 4425

Glu Lys Val Ser Ile Thr Glu Ala Met Arg Arg Asn Leu Val Asp  
4430 4435 4440

Asn Ile Thr Gly Gln Arg Leu Leu Glu Ala Gln Ala Cys Thr Gly  
4445 4450 4455

Gly Ile Ile Asp Pro Ser Ser Gly Glu Arg Phe Pro Val Thr Asp  
4460 4465 4470

Ala Val Ser Arg Gly Leu Val Asp Lys Ile Met Val Asp Arg Ile  
4475 4480 4485

Asn Leu Ala Gln Lys Ala Phe Cys Gly Phe Glu Asp Pro Arg Thr  
4490 4495 4500

Lys Thr Lys Met Ser Ala Ala Gln Ala Leu Lys Lys Gly Trp Leu  
4505 4510 4515

Tyr Tyr Glu Ala Gly Gln Arg Phe Leu Glu Ala Gln Tyr Leu Thr  
4520 4525 4530

Gly Gly Leu Ile Glu Pro Asp Val Pro Gly Arg Val Pro Leu Asp  
4535 4540 4545

Glu Ala Leu Gln Arg Gly Met Val Asp Ala Arg Thr Ala Gln Lys  
4550 4555 4560

Leu Arg Asp Val Gly Ala Tyr Ser Lys Tyr Leu Thr Cys Pro Lys  
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Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Leu Asp Arg Ser Met  
4580 4585 4590

Val Glu Glu Gly Thr Gly Leu Arg Leu Leu Glu Ala Ala Ala Gln  
4595 4600 4605

Ser Ser Lys Gly Tyr Tyr Ser Pro Tyr Ser Val Ser Gly Ser Gly  
4610 4615 4620

Ser Ala Ala Gly Ser Arg Ser Gly Ser Arg Thr Gly Ser Arg Ala  
4625 4630 4635

Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr Gly Ser Gly Phe Ser  
Seite 406

4640

4645

4650

Met Thr Phe Ser Ser Ser Ser Tyr Ser Ser Ser Gly Tyr Gly Arg  
 4655 4660 4665

Arg Tyr Ala Ser Gly Pro Val Ser Ser Leu Gly Gly Pro Glu Ser  
 4670 4675 4680

Ala Ala Ala  
 4685

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 gag cgc gcc atc att gct gca atg gag gag gtg gat gaa ttg cgc tca 96  
 Glu Arg Ala Ile Ile Ala Ala Met Glu Glu Val Asp Glu Leu Arg Ser  
 20 25 30  
 tta ttc ttg aca cgt ata gat ggc att caa cgt gtc gac gcc ttg gaa 144  
 Leu Phe Leu Thr Arg Ile Asp Gly Ile Gln Arg Val Asp Ala Leu Glu  
 35 40 45  
 aac acg gca aag gaa ggt cgg gac gcc acc ccc gcg aag agc aaa aaa 192  
 Asn Thr Ala Lys Glu Gly Arg Asp Ala Thr Pro Ala Lys Ser Lys Lys  
 50 55 60  
 ggt gac ctg gcg agt gtc cca aag aag ccg cgt gtc ggc gca gtg ggc 240  
 Gly Asp Leu Ala Ser Val Pro Lys Lys Pro Arg Val Gly Ala Val Gly  
 65 70 75 80  
 gag aga aaa gaa aaa ggg aaa agt ggc agg gga ggg gag tgg tac aac 288  
 Glu Arg Lys Glu Lys Gly Lys Ser Gly Arg Gly Gly Glu Trp Tyr Asn  
 85 90 95  
 acc ccc tgc agt gag ctg acg ctg cgc cac ctg gaa gag gtg atg caa 336  
 Thr Pro Cys Ser Glu Leu Thr Leu Arg His Leu Glu Glu Val Met Gln  
 100 105 110  
 tta gca acc gag gca att gcg gca tcg gca gcg cag aag gag aag tca 384  
 Leu Ala Thr Glu Ala Ile Ala Ala Ser Ala Ala Gln Lys Glu Lys Ser  
 115 120 125  
 cat ctg cat gag gtg cgg cag agt gcc ctc gag aag gag gtg gag gcg 432  
 His Leu His Glu Val Arg Gln Ser Ala Leu Glu Lys Glu Val Glu Ala  
 130 135 140  
 ctg cac tct cag ctg gag agg cgc act caa ggt gtg gag caa cac acc 480  
 Leu His Ser Gln Leu Glu Arg Arg Thr Gln Gly Val Glu Gln His Thr  
 145 150 155 160  
 tcg cag cag gtg cag gag atg gaa atg aaa cta cgc aaa ttg gag acc 528  
 Ser Gln Gln Val Gln Glu Met Glu Met Lys Leu Arg Lys Leu Glu Thr  
 165 170 175

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aaa atg cag cgg caa cgc gaa gaa ttg ata gat gaa gtc ctg aag cgc	576
Lys Met Gln Arg Gln Arg Glu Glu Leu Ile Asp Glu Val Leu Lys Arg	
	180
ctt cat gga ttt cgt gaa gca tgc cca ctg gaa ggg ggc ggc ggc gag	624
Leu His Gly Phe Arg Glu Ala Ser Pro Leu Glu Gly Gly Gly Glu	
	195
gag ctt att cag agg cta cag gag cgt gtt tct cag ctt gag ctg aag	672
Glu Leu Ile Gln Arg Leu Gln Glu Arg Val Ser Gln Leu Glu Leu Lys	
	210
cag gag gcg cta cgg agc ctc gtt gcc aca gaa ctt gat gca gtg atg	720
Gln Glu Ala Leu Arg Ser Leu Val Ala Thr Glu Leu Asp Ala Val Met	
	225
gag gac cgc gtt aag agt att gct gaa tgc cac ctc cag caa ctc cta	768
Glu Asp Arg Val Lys Ser Ile Ala Glu Ser His Leu Gln Gln Leu Leu	
	245
cgt gaa cag cag caa cag cag cag tgg ttg aag ggt ggc agc act gtg	816
Arg Glu Gln Gln Gln Gln Gln Gln Trp Leu Lys Gly Gly Ser Thr Val	
	260
aac acg agc aca caa gaa acg aca gct aaa aac ggt gtt gcc tct gct	864
Asn Thr Ser Thr Gln Glu Thr Thr Ala Lys Asn Gly Val Ala Ser Ala	
	275
gct gcc att gac cca tgc cct gcc gct gcc gga ccg ctg gat ttt cgc	912
Ala Ala Ile Asp Pro Ser Pro Ala Ala Ala Gly Pro Leu Asp Phe Arg	
	290
agc ctt cgc ctc gac gtc gat gtg ctt cgt cag gac ctt gtc cgc tgt	960
Ser Leu Arg Leu Asp Val Asp Val Leu Arg Gln Asp Leu Val Arg Cys	
	305
atc gtg gag att gaa aaa gtc atg gat cag cag caa cgc ctg ggg gtt	1008
Ile Val Glu Ile Glu Lys Val Met Asp Gln Gln Gln Arg Leu Gly Val	
	325
cgt gtg cac agc tgc gtg agc acc gtg caa cga cac caa acc gac att	1056
Arg Val His Ser Cys Val Ser Thr Val Gln Arg His Gln Thr Asp Ile	
	340
gac ggg ctc tgc gat cag cag aaa acg ctg att cag tct cac atg gcg	1104
Asp Gly Leu Ser Asp Gln Gln Lys Thr Leu Ile Gln Ser His Met Ala	
	355
cgc ctt gag act cag cag gcc aca gca act gcg cgg cag gaa aaa cat	1152
Arg Leu Glu Thr Gln Gln Ala Thr Ala Thr Ala Arg Gln Glu Lys His	
	370
ttg gcc gcg gag ctg gat gtg ctg cac gcg aag gtt ctg tgc gaa gtg	1200
Leu Ala Ala Glu Leu Asp Val Val Leu His Ala Lys Val Leu Ser Glu Val	
	385
cga cgc gtc cat gag cag cag acc gac atg att gtg cga tcc gag cat	1248
Arg Arg Val His Glu Gln Gln Thr Asp Met Ile Val Arg Ser Glu His	
	405
cag cga ctg gat gat ttg gcg gcg gcg cag gag agg ctg cgg gat gaa	1296
Gln Arg Leu Asp Asp Leu Ala Ala Ala Gln Glu Arg Leu Arg Asp Glu	
	420
ttg cgc gtt gcc gtt gaa aag cag cgc gag gag gtg agg atg gcc atc	1344
Leu Arg Val Ala Val Glu Lys Gln Arg Glu Glu Val Arg Met Ala Ile	
	435
	440
	445

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caa Gln 465	ctg Leu 465	cga Arg 465	ggt Gly 465	gag Glu 470	aca Thr 470	gcg Ala 470	cgg Arg 470	caa Gln 470	att Ile 470	gac Asp 475	gcg Ala 475	gca Ala 475	cgg Arg 475	cag Gln 475	gct Ala 480	1440
cag Gln 485	gaa Glu 485	gtt Val 485	tcc Ser 485	aca Thr 485	gat Asp 485	gaa Glu 485	aca Thr 485	caa Gln 485	cgg Arg 485	ctt Leu 490	ctg Leu 490	cag Gln 490	gac Asp 495	aca Thr 495	cag Gln 495	1488
gag Glu 500	gaa Glu 500	ctc Leu 500	cga Arg 500	cga Arg 500	atg Met 500	cag Gln 505	aac Asn 505	aat Asn 505	ctg Leu 505	aag Lys 505	gac Asp 510	agc Ser 510	gcc Ala 510	gtg Val 510	ctg Leu 510	1536
atg Met 515	caa Gln 515	gag Glu 515	cga Arg 515	agc Ser 515	cga Arg 515	cgg Arg 520	ttt Phe 520	gag Glu 520	gag Glu 520	tcg Ser 520	atg Met 525	gaa Glu 525	aat Asn 525	cgg Arg 525	ctc Leu 525	1584
aat Asn 530	aac Asn 530	gag Glu 530	gct Ala 530	cgc Arg 530	cgg Arg 530	att Ile 535	aag Lys 535	acg Thr 535	ttt Phe 535	acg Thr 535	aat Asn 540	gac Asp 540	gca Ala 540	acg Thr 540	ttg Leu 540	1632
cga Arg 545	cta Leu 545	cag Gln 545	aag Lys 545	caa Gln 550	gta Val 550	gag Glu 550	gat Asp 550	gag Glu 550	gtg Val 550	cgg Arg 555	cgc Arg 555	ctt Leu 555	gtg Val 555	cat His 555	atc Ile 560	1680
acc Thr 565	gag Glu 565	caa Gln 565	gag Glu 565	tct Ser 565	ttg Leu 565	tca Ser 565	tct Ser 565	atg Met 570	cag Gln 570	cat His 570	gaa Glu 570	atg Met 570	cag Gln 570	cgt Arg 575	gtc Val 575	1728
aat Asn 580	gtc Val 580	gct Ala 580	ctg Leu 580	cag Gln 580	gcc Ala 580	ctg Leu 580	gaa Glu 580	gag Glu 585	gag Glu 585	cag Gln 585	cgg Arg 585	gcg Ala 590	ctc Leu 590	cgt Arg 590	gaa Glu 590	1776
ggg Gly 595	ttg Leu 595	ctc Leu 595	acg Thr 595	cta Leu 595	tcg Ser 595	gca Ala 600	ccc Pro 600	tcc Ser 600	aga Arg 600	acg Thr 600	atg Met 600	gca Ala 605	agc Ser 605	cta Leu 605	gat Asp 605	1824
cac His 610	cgc Arg 610	atg Met 610	aat Asn 610	gtg Val 610	ttg Leu 610	cag Gln 615	gag Glu 615	gat Asp 615	gtt Val 615	agg Arg 615	agt Ser 620	gtg Val 620	ttt Phe 620	gcc Ala 620	caa Gln 620	1872
att Ile 625	gag Glu 625	cat His 625	gtg Val 625	cag Gln 625	gat Asp 630	att Ile 630	gga Gly 630	gcg Ala 630	cct Pro 630	ggg Gly 635	cta Leu 635	acg Thr 635	aag Lys 635	cac His 635	gtg Val 640	1920
ctt Leu 645	gcc Ala 645	aag Lys 645	cag Gln 645	cag Gln 645	cga Arg 645	atg Met 645	ctg Leu 645	cag Gln 645	gat Asp 650	gat Asp 650	ata Ile 650	tta Leu 650	gaa Glu 650	gtg Val 655	aaa Lys 655	1968
tcg Ser 660	aga Arg 660	ttg Leu 660	cgt Arg 660	cgc Arg 660	tgc Cys 660	gag Glu 660	gag Glu 660	tgc Cys 665	tgt Cys 665	ggc Gly 665	tac Tyr 665	aca Thr 665	aat Asn 670	gtt Val 670	gtg Val 670	2016
cca Pro 675	cag Gln 675	acg Thr 675	cag Gln 675	gag Glu 675	atg Met 675	gaa Glu 675	ctg Leu 680	tca Ser 680	cag Gln 680	acc Thr 680	ttg Leu 680	agt Ser 685	ggc Gly 685	aag Lys 685	gcg Ala 685	2064
ttt Phe 690	ccc Pro 690	cac His 690	att Ile 690	acc Thr 690	gtg Val 695	acg Thr 695	cag Gln 695	ccg Pro 695	acc Thr 695	aaa Lys 695	ttg Leu 700	acg Thr 700	acg Thr 700	gaa Glu 700	tca Ser 700	2112
tta Leu 705	acg Thr 705	ccg Pro 705	ggg Gly 705	aaa Lys 705	cca Pro 710	act Thr 710	ttg Leu 710	ggg Gly 710	cag Gln 710	gcg Ala 715	agt Ser 715	gat Asp 715	gtc Val 715	gct Ala 720	gca Ala 720	2160
ggg Gly 725	gtc Val 725	gtt Val 725	caa Gln 725	agc Ser 725	cca Pro 725	ggg Gly 725	gtg Val 725	cct Pro 725	tac Tyr 725	ggg Gly 725	ctt Leu 725	aat Asn 725	caa Gln 725	ggc Ala 725	aaa Lys 725	2208

Gly Val Val Gln	Ser Pro Gly Val Pro Tyr Gly Leu Asn Gln Gly Lys	
	725 730 735	
ctg atc aag ggt aca tca gag ata aac ccc ttc agc agc acg ttt tat		2256
Leu Ile Lys Gly Thr Ser Glu Ile Asn Pro Phe Ser Ser Thr Phe Tyr	740 745 750	
gat cct ctt gct ggt gtc ttt gac tga		2283
Asp Pro Leu Ala Gly Val Phe Asp	755 760	
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Glu Arg Ala Ile Ile Ala Ala Met Glu Glu Val Asp Glu Leu Arg Ser		
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Leu Phe Leu Thr Arg Ile Asp Gly Ile Gln Arg Val Asp Ala Leu Glu		
35 40 45		
Asn Thr Ala Lys Glu Gly Arg Asp Ala Thr Pro Ala Lys Ser Lys Lys		
50 55 60		
Gly Asp Leu Ala Ser Val Pro Lys Lys Pro Arg Val Gly Ala Val Gly		
65 70 75 80		
Glu Arg Lys Glu Lys Gly Lys Ser Gly Arg Gly Gly Glu Trp Tyr Asn		
85 90 95		
Thr Pro Cys Ser Glu Leu Thr Leu Arg His Leu Glu Glu Val Met Gln		
100 105 110		
Leu Ala Thr Glu Ala Ile Ala Ala Ser Ala Ala Gln Lys Glu Lys Ser		
115 120 125		
His Leu His Glu Val Arg Gln Ser Ala Leu Glu Lys Glu Val Glu Ala		
130 135 140		
Leu His Ser Gln Leu Glu Arg Arg Thr Gln Gly Val Glu Gln His Thr		
145 150 155 160		
Ser Gln Gln Val Gln Glu Met Glu Met Lys Leu Arg Lys Leu Glu Thr		
165 170 175		
Lys Met Gln Arg Gln Arg Glu Glu Leu Ile Asp Glu Val Leu Lys Arg		
180 185 190		
Leu His Gly Phe Arg Glu Ala Ser Pro Leu Glu Gly Gly Gly Gly Glu		
195 200 205		

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Glu Leu Ile Gln Arg Leu Gln Glu Arg Val Ser Gln Leu Glu Leu Lys  
 210 215 220  
 Gln Glu Ala Leu Arg Ser Leu Val Ala Thr Glu Leu Asp Ala Val Met  
 225 230 235 240  
 Glu Asp Arg Val Lys Ser Ile Ala Glu Ser His Leu Gln Gln Leu Leu  
 245 250 255  
 Arg Glu Gln Gln Gln Gln Gln Trp Leu Lys Gly Gly Ser Thr Val  
 260 265 270  
 Asn Thr Ser Thr Gln Glu Thr Thr Ala Lys Asn Gly Val Ala Ser Ala  
 275 280 285  
 Ala Ala Ile Asp Pro Ser Pro Ala Ala Ala Gly Pro Leu Asp Phe Arg  
 290 295 300  
 Ser Leu Arg Leu Asp Val Asp Val Leu Arg Gln Asp Leu Val Arg Cys  
 305 310 315 320  
 Ile Val Glu Ile Glu Lys Val Met Asp Gln Gln Gln Arg Leu Gly Val  
 325 330 335  
 Arg Val His Ser Cys Val Ser Thr Val Gln Arg His Gln Thr Asp Ile  
 340 345 350  
 Asp Gly Leu Ser Asp Gln Gln Lys Thr Leu Ile Gln Ser His Met Ala  
 355 360 365  
 Arg Leu Glu Thr Gln Gln Ala Thr Ala Thr Ala Arg Gln Glu Lys His  
 370 375 380  
 Leu Ala Ala Glu Leu Asp Val Leu His Ala Lys Val Leu Ser Glu Val  
 385 390 395 400  
 Arg Arg Val His Glu Gln Gln Thr Asp Met Ile Val Arg Ser Glu His  
 405 410 415  
 Gln Arg Leu Asp Asp Leu Ala Ala Ala Gln Glu Arg Leu Arg Asp Glu  
 420 425 430  
 Leu Arg Val Ala Val Glu Lys Gln Arg Glu Glu Val Arg Met Ala Ile  
 435 440 445  
 Glu Gln Val Ser Glu Thr Gly Arg Arg Leu Glu Arg Glu Leu Ala Ser  
 450 455 460  
 Gln Leu Arg Gly Glu Thr Ala Arg Gln Ile Asp Ala Ala Arg Gln Ala  
 465 470 475 480

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Gln Glu Val Ser Thr Asp Glu Thr Gln Arg Leu Leu Gln Asp Thr Gln  
485 490 495

Glu Glu Leu Arg Arg Met Gln Asn Asn Leu Lys Asp Ser Ala Val Leu  
500 505 510

Met Gln Glu Arg Ser Arg Arg Phe Glu Glu Ser Met Glu Asn Arg Leu  
515 520 525

Asn Asn Glu Ala Arg Arg Ile Lys Thr Phe Thr Asn Asp Ala Thr Leu  
530 535 540

Arg Leu Gln Lys Gln Val Glu Asp Glu Val Arg Arg Leu Val His Ile  
545 550 555 560

Thr Glu Gln Glu Ser Leu Ser Ser Met Gln His Glu Met Gln Arg Val  
565 570 575

Asn Val Ala Leu Gln Ala Leu Glu Glu Glu Gln Arg Ala Leu Arg Glu  
580 585 590

Gly Leu Leu Thr Leu Ser Ala Pro Ser Arg Thr Met Ala Ser Leu Asp  
595 600 605

His Arg Met Asn Val Leu Gln Glu Asp Val Arg Ser Val Phe Ala Gln  
610 615 620

Ile Glu His Val Gln Asp Ile Gly Ala Pro Gly Leu Thr Lys His Val  
625 630 635 640

Leu Ala Lys Gln Gln Arg Met Leu Gln Asp Asp Ile Leu Glu Val Lys  
645 650 655

Ser Arg Leu Arg Arg Cys Glu Glu Cys Cys Gly Tyr Thr Asn Val Val  
660 665 670

Pro Gln Thr Gln Glu Met Glu Leu Ser Gln Thr Leu Ser Gly Lys Ala  
675 680 685

Phe Pro His Ile Thr Val Thr Gln Pro Thr Lys Leu Thr Thr Glu Ser  
690 695 700

Leu Thr Pro Gly Lys Pro Thr Leu Gly Gln Ala Ser Asp Val Ala Ala  
705 710 715 720

Gly Val Val Gln Ser Pro Gly Val Pro Tyr Gly Leu Asn Gln Gly Lys  
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Asp Pro Leu Ala Gly Val Phe Asp  
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gag gtg ctc ttt cgt gag ggg gtg atg gtt gcc aag aag gac cgg cga		96
Glu Val Leu Phe Arg Glu Gly Val Met Val Ala Lys Lys Asp Arg Arg		
20 25 30		
ccc cga agc ctg cat ccc cat gtg ccc ggc gtc acc aat cta cag gtc		144
Pro Arg Ser Leu His Pro His Val Pro Gly Val Thr Asn Leu Gln Val		
35 40 45		
atg cgt gcc atg acc tcg ctg aaa gct cgg ggc ctg gtg cgg gag acc		192
Met Arg Ala Met Thr Ser Leu Lys Ala Arg Gly Leu Val Arg Glu Thr		
50 55 60		
ttt gcc tgg tgc cac ttc tac tgg tac ctg acc aac gag ggc atc gac		240
Phe Ala Trp Cys His Phe Tyr Trp Tyr Leu Thr Asn Glu Gly Ile Asp		
65 70 75 80		
cac cta cgc cag tac cta cac ctg cca ccg gag atc gta cct gcc tct		288
His Leu Arg Gln Tyr Leu His Leu Pro Pro Glu Ile Val Pro Ala Ser		
85 90 95		
ctg cag cgt gtg cgc cgc cct gtt gcc atg gtg atg cct gca cgt cgt		336
Leu Gln Arg Val Arg Arg Pro Val Ala Met Val Met Pro Ala Arg Arg		
100 105 110		
cgc tcc ccc cat gtg cag acc atg caa ggt ccc tta ggc tgt cca cca		384
Arg Ser Pro His Val Gln Thr Met Gln Gly Pro Leu Gly Cys Pro Pro		
115 120 125		
aag agg ggc cct ctg cca gct gag gac cct gcc cgg gag gag cgg cag		432
Lys Arg Gly Pro Leu Pro Ala Glu Asp Pro Ala Arg Glu Glu Arg Gln		
130 135 140		
gtc tat cgc agg aag gag cgt gag gaa ggg gca cct gaa acc cct gtg		480
Val Tyr Arg Arg Lys Glu Arg Glu Gly Ala Pro Glu Thr Pro Val		
145 150 155 160		
gtg tct gcc acc atc gtg ggg acc ctg gcc agg ccc ggc cca gag ccc		528
Val Ser Ala Thr Ile Val Gly Thr Leu Ala Arg Pro Gly Pro Glu Pro		
165 170 175		
acc cca gcc aca gat gaa cga gac cgt gtg cag aag aaa act tcc acc		576
Thr Pro Ala Thr Asp Glu Arg Asp Arg Val Gln Lys Lys Thr Ser Thr		
180 185 190		
aag tgg gtc aat aaa cac ctt atc aag gct caa agg cac atc agt gac		624
Lys Trp Val Asn Lys His Leu Ile Lys Ala Gln Arg His Ile Ser Asp		
195 200 205		
ctg tat gaa gac ctc cgt gat ggc cac aac ctc atc tcc ctg ctg gaa		672
Leu Tyr Glu Asp Leu Arg Asp Gly His Asn Leu Ile Ser Leu Leu Glu		

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210	215	220	
gtc Val 225	ctc Leu	tca Ser	gga Gly
gac Asp	agc Ser 230	ctg Leu	ccc Pro
cga Arg	gag Glu	aag Lys 235	ggg Gly
agg Arg	atg Met	cgt Arg	ttc Phe 240
cac His	aag Lys	ctg Leu	caa Gln
aac Asn 245	gtt Val	cag Gln	att Ile
gcc Ala 250	ctg Leu	gac Asp	tat Tyr
ctc Leu	cga Arg	cat His 255	cgg Arg
cag Gln	gtg Val	aag Lys	ttg Leu 260
gtg Val	aac Asn	atc Ile	aga Arg
aat Asn 265	gat Asp	gac Asp	atc Ile
gcc Ala 270	gat Asp	ggc Gly	aac Asn
ccc Pro	aag Lys	ctg Leu 275	acc Thr
ctg Leu	ggc Gly	ctg Leu	atc Ile 280
tgg Trp	aca Thr	atc Ile	atc Ile
ctg Leu 285	cac His	ttc Phe	aag Lys
atc Ile 290	tca Ser	gac Asp	att Ile
cag Gln	gtg Val	agc Ser 295	ggc Gly
cag Gln	tcc Ser	gag Glu	gac Asp 300
atg Met	aca Thr	gcc Ala	aag Lys
gag Glu 305	aag Lys	ctg Leu	ctg Leu
ctg Leu	ttg Trp 310	tct Ser	cag Gln
cgt Arg	atg Met	gta Val 315	gag Glu
ggc Gly 320	tac Tyr	caa Gln	ggc Gly 325
ctg Leu	cgc Arg	tgt Cys	gac Asp
aac Asn 325	ttc Phe	acc Thr	acc Thr
agc Ser	tgg Trp 330	cgc Arg	gac Asp
ggc Gly	cgg Arg	ctc Leu 335	ttc Phe
aat Asn	gct Ala	atc Ile	atc Ile
cac His 340	agg Arg	cac His	aag Lys
ccc Pro 345	atg Met	ctc Leu	ata Ile
gac Asp 350	atg Met	aat Asn	aaa Lys
gtg Val	tac Tyr	cga Arg 355	cag Gln
acc Thr	aac Asn	ctg Leu	gag Glu 360
aac Asn	cta Leu	gac Asp	cag Gln
gcc Ala 365	ttc Phe	tcc Ser	gtg Val
gca Ala	gag Glu 370	cgg Arg	gac Asp
ctg Leu	gga Gly	gtt Val 375	acc Thr
agg Arg	ctc Leu	ctg Leu	gac Asp 380
gat Asp 385	gtc Val	cct Pro	cag Gln
cct Pro	gat Asp 390	gag Glu	aag Lys
tcc Ser	atc Ile	atc Ile	acc Thr
acc Thr	tac Tyr	gtt Val	tca Ser
tcc Ser 400	ctg Leu	tat Tyr	gat Asp
gcc Ala	atg Met 405	ccc Pro	cgt Arg
gtg Val	ccg Pro	ggc Gly 410	gca Ala
cag Gln	gat Asp	gga Gly	gtg Val 415
agg Arg	ctg Leu	gtg Val	agg Arg
gcc Ala	aat Asn	gag Glu 420	cag Gln
ctt Leu	cgt Arg	tgg Trp	caa Gln 425
gag Glu	tac Tyr	cgg Arg	gag Glu
tac Tyr	cgg Arg	gag Glu	ctt Leu 430
gtg Val	ctt Leu	gtg Val	ctg Leu
ctg Leu	cta Leu 435	cag Gln	tgg Trp
atc Ile	cgg Arg	cac His 440	cac His
acc Thr	gct Ala	gct Ala	ttt Phe 445
gag Glu	gag Glu	tgc Cys	cag Gln
ttt Phe 450	ccc Pro	tcc Ser	agc Ser
gtt Phe 455	gag Glu	gag Glu	att Ile
atc Ile	cta Leu 460	tgg Trp	tgc Cys
cag Gln	ttt Phe	gtg Val	ctg Leu
aca Thr 470	gaa Glu	ctt Leu	cct Pro
gaa Glu	gag Glu	gca Ala	aag Lys 475
gag Glu	gca Ala	gac Asp	aag Lys
aac Asn 480	gtg Val	caa Gln	gca Ala
ggc Gly 485	atc Ile	tac Tyr	cag Gln
tct Ser	ttg Leu	gag Glu 490	gga Gly
gca Ala	gta Val	caa Gln	gca Ala
ggc Gly 495			

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tgg Trp	ggc Gly	aag Lys 515	ctg Leu	cac His	gtg Val	gcc Ala	atc Ile 520	ctg Leu	gag Glu	cgg Arg	gag Glu	aag Lys 525	caa Gln	ctc Leu	cgg Arg	1584
agc Ser	gag Glu 530	ttt Phe	gag Glu	agg Arg	ctg Leu	gag Glu 535	tgt Cys	ctt Leu	cag Gln	cgc Arg	att Ile 540	gtg Val	agc Ser	aag Lys	cta Leu	1632
cag Gln 545	atg Met	gag Glu	gct Ala	ggg Gly	cta Leu 550	tgt Cys	gag Glu	gag Glu	cag Gln	ctg Leu 555	tac Tyr	cag Gln	gcg Ala	gat Asp	tcc Ser 560	1680
cta Leu	ctg Leu	cag Gln	tgc Ser	gat Asp 565	att Ile	cgg Arg	ctg Leu	ctg Leu	gcc Ala 570	tca Ser	ggc Gly	aag Lys	gcg Ala	gca Ala 575	cag Gln	1728
cgg Arg	gct Ala	ggg Gly	gaa Glu 580	gtg Val	gag Glu	aga Arg	gac Asp	ctg Leu 585	gac Asp	aag Lys	gct Ala	gat Asp	ggg Gly 590	atg Met	atc Ile	1776
cgg Arg	ctg Leu	ttg Leu 595	ttc Phe	aat Asn	gat Asp	gtg Val	cag Gln 600	acc Thr	ctt Leu	aaa Lys	gat Asp	ggg Gly 605	cgg Arg	cat His	cca Pro	1824
cag Gln 610	ggg Gly	gaa Glu	cag Gln	atg Met	tac Tyr	cgg Arg 615	agg Arg	gtg Val	tat Tyr	cgt Arg	ctg Leu 620	cat His	gag Glu	cgc Arg	ctg Leu	1872
gta Val 625	gcc Ala	atc Ile	cgc Arg	act Thr	gaa Glu 630	tac Tyr	aac Asn	ctc Leu	cgg Arg	ctg Leu 635	aag Lys	gca Ala	ggg Gly	gtg Val	ggg Gly 640	1920
gcc Ala	cct Pro	gtg Val	acc Thr	cag Gln 645	gtg Val	acc Thr	ctg Leu	cag Gln	agc Ser 650	aca Thr	cag Gln	agg Arg	cgc Arg	cca Pro 655	gag Glu	1968
cta Leu	gag Glu	gac Asp	tcc Ser 660	aca Thr	ctg Leu	cgt Arg	tac Tyr	ctg Leu 665	cac His	gac Asp	ctg Leu	ctg Leu	gca Ala 670	tgg Trp	gtg Val	2016
gag Glu	gag Glu	aac Asn 675	cag Gln	cgt Arg	cga Arg	ata Ile	gac Asp 680	ggg Gly	gct Ala	gag Glu	tgg Trp	ggc Gly 685	gtg Val	gac Asp	ttg Leu	2064
ccc Pro	agt Ser 690	gta Val	gag Glu	gca Ala	cag Gln	ctg Leu 695	ggc Gly	agc Ser	cac His	cga Arg	ggc Gly 700	atg Met	cat His	cag Gln	tct Ser	2112
att Ile 705	gag Glu	gaa Glu	ttc Phe	cgg Arg	gcc Ala 710	aag Lys	atc Ile	gag Glu	cgg Arg	gct Ala 715	cgg Arg	aat Asn	gat Asp	gag Glu	agc Ser 720	2160
cag Gln	ctc Leu	tcc Ser	cct Pro	gcc Ala 725	acc Thr	cga Arg	ggg Gly	gcc Ala	tac Tyr 730	cga Arg	gac Asp	tgc Cys	ctg Leu	ggc Gly 735	cgc Arg	2208
ctg Leu	gac Asp	ctg Leu	cag Gln 740	tat Tyr	gca Ala	aag Lys	ctg Leu 745	ctg Leu	aac Asn	tcc Ser	tcc Ser	aag Lys	gcc Ala 750	cgc Arg	ctc Leu	2256
cgg Arg	tcc Ser	ctg Leu 755	gag Glu	agc Ser	ttg Leu	cat His	ggg Gly 760	ttt Phe	gtg Val	gcg Ala	gca Ala	gct Ala 765	acc Thr	aag Lys	gag Glu	2304

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ctg atg tgg ctg aat gag aag gaa gag gaa gaa gtg ggc ttt gat tgg Leu Met Trp Leu Asn Glu Lys Glu Glu Glu Glu Val Gly Phe Asp Trp 770 775 780	2352
agt gac cgc aac acc aac atg gct gcc aag aaa gaa agt tac tcg gcc Ser Asp Arg Asn Thr Asn Met Ala Ala Lys Lys Glu Ser Tyr Ser Ala 785 790 795 800	2400
ctg atg cgt gag ctg gag atg aag gaa aag aaa att aag gag atc cag Leu Met Arg Glu Leu Glu Met Lys Glu Lys Lys Ile Lys Glu Ile Gln 805 810 815	2448
aac acg ggg gac agg ttg ctg cgg gaa gac cat cct gcc cgg ccc aca Asn Thr Gly Asp Arg Leu Leu Arg Glu Asp His Pro Ala Arg Pro Thr 820 825 830	2496
gtg gag tcc ttc cag gct gcc ctg cag aca cag tgg agc tgg atg ctg Val Glu Ser Phe Gln Ala Ala Leu Gln Thr Trp Ser Trp Met Leu 835 840 845	2544
cag ctg tgt tgc tgc att gaa gcg cac ttg aaa gag aac aca gcc tac Gln Leu Cys Cys Cys Ile Glu Ala His Leu Lys Glu Asn Thr Ala Tyr 850 855 860	2592
ttc cag ttc ttc tca gat gtt cgg gag gct gag gaa cag ttg cag aaa Phe Gln Phe Phe Ser Asp Val Arg Glu Ala Glu Glu Gln Leu Gln Lys 865 870 875 880	2640
cta cag gag acg tta cgc agg aag tac agc tgt gac cgc tcc atc act Leu Gln Glu Thr Leu Arg Arg Lys Tyr Ser Cys Asp Arg Ser Ile Thr 885 890 895	2688
gtc aca agg ctt gag gac ctg ctg cag gat gcc cag gat gag aag gag Val Thr Arg Leu Glu Asp Leu Leu Gln Asp Ala Gln Asp Glu Lys Glu 900 905 910	2736
caa ctg aat gag tac aaa ggg cac ctc tca ggc ctg gcc aag cgg gcc Gln Leu Asn Glu Tyr Lys Gly His Leu Ser Gly Leu Ala Lys Arg Ala 915 920 925	2784
aag gct att gtg cag ctg aag cca cgc aac cct gcc cac cct gtg cgg Lys Ala Ile Val Gln Leu Lys Pro Arg Asn Pro Ala His Pro Val Arg 930 935 940	2832
ggc cac gtg ccc ctg cta gct gtg tgt gac tac aag cag gtg gag gtg Gly His Val Pro Leu Leu Ala Val Cys Asp Tyr Lys Gln Val Glu Val 945 950 955 960	2880
act gtg cac aag ggt gac caa tgc cag ctg gtg ggc cct gca cag ccg Thr Val His Lys Gly Asp Gln Cys Gln Leu Val Gly Pro Ala Gln Pro 965 970 975	2928
ttc cac tgg aag gtg ctc agt agt tcc ggc agt gag gct gcc gtg cct Phe His Trp Lys Val Leu Ser Ser Ser Gly Ser Glu Ala Ala Val Pro 980 985 990	2976
tct gtg tgc ttt ctt gtg ccg cca ccc aac cag gag gcc cag gaa gct Ser Val Cys Phe Leu Val Pro Pro Pro Asn Gln Glu Ala Gln Glu Ala 995 1000 1005	3024
gtt gct agg ctg gag gcc cag cat cag gcc ctg gtt act ctg tgg Val Ala Arg Leu Glu Ala Gln His Gln Ala Leu Val Thr Leu Trp 1010 1015 1020	3069
cac cag ctt cac gtg gac atg aag agt ctt ctg gca tgg cag agc His Gln Leu His Val Asp Met Lys Ser Leu Leu Ala Trp Gln Ser 1025 1030 1035	3114
ctc aat cgt gac ata cag ctc atc cgg tcc tgg tcc cta gtc acg	3159

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Phe	Arg	Thr	Leu	Lys	Pro	Glu	Glu	Gln	Arg	Gln	Ala	Leu	Arg	Asn	
	1055					1060					1065				
ctg	gag	ttg	cac	tac	cag	gcc	ttc	ctt	cga	gac	agc	cag	gac	gct	3249
Leu	Glu	Leu	His	Tyr	Gln	Ala	Phe	Leu	Arg	Asp	Ser	Gln	Asp	Ala	
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Gly	Gly	Phe	Gly	Pro	Glu	Asp	Arg	Leu	Val	Ala	Glu	Arg	Glu	Tyr	
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gga	tct	tgt	agt	cgc	cac	tac	cag	cag	ctg	cta	caa	agc	ctg	gag	3339
Gly	Ser	Cys	Ser	Arg	His	Tyr	Gln	Gln	Leu	Leu	Gln	Ser	Leu	Glu	
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cag	ggt	gag	cag	gaa	gag	tct	cgc	tgt	cag	cga	tgc	atc	tcg	gag	3384
Gln	Gly	Glu	Gln	Glu	Glu	Ser	Arg	Cys	Gln	Arg	Cys	Ile	Ser	Glu	
	1115					1120					1125				
ctc	aag	gac	att	cgg	ctg	caa	ctg	gag	gcc	tgt	gag	act	cgg	act	3429
Leu	Lys	Asp	Ile	Arg	Leu	Gln	Leu	Glu	Ala	Cys	Glu	Thr	Arg	Thr	
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gtg	cac	cgt	ctg	cgg	ctg	cca	ctg	gat	aaa	gac	ccc	gca	cgg	gag	3474
Val	His	Arg	Leu	Arg	Leu	Pro	Leu	Asp	Lys	Asp	Pro	Ala	Arg	Glu	
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tgt	gcc	cag	cgc	atc	gct	gag	caa	cag	aaa	gca	cag	gct	gag	gtg	3519
Cys	Ala	Gln	Arg	Ile	Ala	Glu	Gln	Gln	Lys	Ala	Gln	Ala	Glu	Val	
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gag	ggg	ctg	ggc	aag	gga	gtt	gcc	cgg	ctg	tct	gct	gag	gct	gag	3564
Glu	Gly	Leu	Gly	Lys	Gly	Val	Ala	Arg	Leu	Ser	Ala	Glu	Ala	Glu	
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Lys	Val	Leu	Ala	Leu	Pro	Glu	Pro	Ser	Pro	Ala	Ala	Pro	Thr	Leu	
	1190					1195					1200				
cgc	tcg	gag	ttg	gaa	ttg	acc	ctg	ggc	aag	ctg	gaa	cag	gtc	aga	3654
Arg	Ser	Glu	Leu	Glu	Leu	Thr	Leu	Gly	Lys	Leu	Glu	Gln	Val	Arg	
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agc	ctg	tct	gcc	atc	tac	ttg	gag	aaa	ctc	aag	acc	atc	agc	ttg	3699
Ser	Leu	Ser	Ala	Ile	Tyr	Leu	Glu	Lys	Leu	Lys	Thr	Ile	Ser	Leu	
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gta	att	cgc	agt	acc	cag	ggg	gct	gag	gag	gtg	ctt	aaa	aca	cac	3744
Val	Ile	Arg	Ser	Thr	Gln	Gly	Ala	Glu	Glu	Val	Leu	Lys	Thr	His	
	1235					1240					1245				
gag	gag	cac	ctg	aag	gag	gcc	cag	gcc	gtg	cct	gcc	aca	ctc	caa	3789
Glu	Glu	His	Leu	Lys	Glu	Ala	Gln	Ala	Val	Pro	Ala	Thr	Leu	Gln	
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gag	ctc	gaa	gtc	acc	aag	gct	tca	cta	aag	aag	ctg	cgg	gcc	cag	3834
Glu	Leu	Glu	Val	Thr	Lys	Ala	Ser	Leu	Lys	Lys	Leu	Arg	Ala	Gln	
	1265					1270					1275				
gcg	gag	gca	cag	cag	cct	gta	ttc	aac	acc	cta	cga	gat	gag	ctg	3879
Ala	Glu	Ala	Gln	Gln	Pro	Val	Phe	Asn	Thr	Leu	Arg	Asp	Glu	Leu	
	1280					1285					1290				
agg	ggg	gca	cag	gaa	gtt	ggt	gaa	cgg	cta	cag	cag	cgg	cat	ggt	3924
Arg	Gly	Ala	Gln	Glu	Val	Gly	Glu	Arg	Leu	Gln	Gln	Arg	His	Gly	

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	1295						1300						1305						
gag Glu	cgg Arg 1310	gac Asp	gtg Val	gaa Glu	gta Val	gag Glu 1315	cgc Arg	tgg Trp	cga Arg	gaa Glu	cgt Arg 1320	gtc Val	act Thr	cag Gln	3969				
ttg Leu	ctg Leu 1325	gag Glu	cgc Arg	tgg Trp	cag Gln	gct Ala 1330	gtg Val	cta Leu	gcc Ala	cag Gln	act Thr 1335	gat Asp	gtg Val	cgg Arg	4014				
cag Gln	cgg Arg 1340	gag Glu	ctt Leu	gaa Glu	cag Gln	ctg Leu 1345	ggc Gly	cgc Arg	caa Gln	ctt Leu	cgc Arg 1350	tac Tyr	tac Tyr	cgt Arg	4059				
gaa Glu	agt Ser 1355	gcg Ala	gat Asp	ccg Pro	ctg Leu	agc Ser 1360	tcc Ser	tgg Trp	ctg Leu	cag Gln	gat Asp 1365	gcc Ala	aag Lys	agc Ser	4104				
cgg Arg	caa Gln 1370	gaa Glu	cag Gln	atc Ile	cag Gln	gct Ala 1375	gtg Val	cca Pro	ata Ile	gcc Ala	aac Asn 1380	agt Ser	cag Gln	gct Ala	4149				
gca Ala	cga Arg 1385	gaa Glu	cag Gln	ctg Leu	cgc Arg	cag Gln 1390	gag Glu	aag Lys	gcc Ala	ctg Leu	ctg Leu 1395	gag Glu	gag Glu	att Ile	4194				
gag Glu	cgc Arg 1400	cat His	ggg Gly	gag Glu	aag Lys	gtt Val 1405	gag Glu	gag Glu	tgc Cys	cag Gln	aag Lys 1410	ttt Phe	gct Ala	aag Lys	4239				
cag Gln	tac Tyr 1415	atc Ile	aat Asn	gca Ala	atc Ile	aag Lys 1420	gac Asp	tat Tyr	gag Glu	ctc Leu	cag Gln 1425	ctg Leu	atc Ile	acc Thr	4284				
tac Tyr	aag Lys 1430	gct Ala	cag Gln	ctt Leu	gaa Glu	cct Pro 1435	gtg Val	gcc Ala	tcc Ser	ccc Pro	gcc Ala 1440	aag Lys	aag Lys	ccc Pro	4329				
aag Lys	gtt Val 1445	cag Gln	tct Ser	gga Gly	tcg Ser	gag Glu 1450	agc Ser	gtc Val	atc Ile	cag Gln	gag Glu 1455	tac Tyr	gtg Val	gat Asp	4374				
ctg Leu	cgt Arg 1460	aca Thr	cgc Arg	tac Tyr	agt Ser	gag Glu 1465	ctg Leu	acc Thr	aca Thr	ctc Leu	acg Thr 1470	agt Ser	cag Gln	tac Tyr	4419				
atc Ile	aag Lys 1475	ttc Phe	atc Ile	agt Ser	gag Glu	aca Thr 1480	ctg Leu	cgc Arg	cgc Arg	atg Met	gaa Glu 1485	gag Glu	gaa Glu	gag Glu	4464				
cgg Arg	ctg Leu 1490	gct Ala	gag Glu	caa Gln	cag Gln	cgg Arg 1495	gca Ala	gag Glu	gag Glu	cgg Arg	gag Glu 1500	cgc Arg	ctg Leu	gcc Ala	4509				
gag Glu	gtg Val 1505	gag Glu	gcc Ala	gcg Ala	ctg Leu	gag Glu 1510	aag Lys	cag Gln	cgg Arg	cag Gln	ctg Leu 1515	gct Ala	gag Glu	gcc Ala	4554				
cat His	gcc Ala 1520	cag Gln	gcc Ala	aag Lys	gca Ala	cag Gln 1525	gcc Ala	gag Glu	ctg Leu	gag Glu	gca Ala 1530	cga Arg	gaa Glu	ctg Leu	4599				
cag Gln	cgg Arg 1535	cgc Arg	atg Met	cag Gln	gag Glu	gag Glu 1540	gtg Val	acg Thr	cgg Arg	cgc Arg	gag Glu 1545	gag Glu	gcg Ala	gcg Ala	4644				
gtg Val	gac Asp 1550	gca Ala	cag Gln	caa Gln	cag Gln	aag Lys 1555	cgc Arg	agc Ser	atc Ile	caa Gln	gag Glu 1560	gag Glu	ctg Leu	cag Gln	4689				

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cat His	ctg Leu 1565	cgg Arg	caa Gln	agc Ser	tca Ser	gag Glu 1570	gca Ala	gag Glu	atc Ile	cag Gln	gcc Ala 1575	aag Lys	gcc Ala	cag Gln	4734
cag Gln	gtg Val 1580	gag Glu	gct Ala	gca Ala	gag Glu	cgc Arg 1585	agc Ser	cgc Arg	atg Met	cgc Arg	att Ile 1590	gag Glu	gaa Glu	gag Glu	4779
atc Ile	cgc Arg 1595	gta Val	gtc Val	cgt Arg	ctg Leu	cag Gln 1600	cta Leu	gag Glu	aca Thr	act Thr	gag Glu 1605	cgt Arg	cag Gln	cgt Arg	4824
gga Gly	ggg Gly 1610	gcg Ala	gag Glu	gat Asp	gag Glu	ctg Leu 1615	cag Gln	gct Ala	ctg Leu	cgt Arg	gca Ala 1620	cgg Arg	gct Ala	gag Glu	4869
gag Glu	gca Ala 1625	gaa Glu	gca Ala	cag Gln	aag Lys	cgg Arg 1630	cag Gln	gct Ala	cag Gln	gag Glu	gaa Glu 1635	gcc Ala	gag Glu	cgc Arg	4914
ttg Leu	cgg Arg 1640	agg Arg	cag Gln	gtg Val	cag Gln	gat Asp 1645	gag Glu	agc Ser	caa Gln	cgc Arg	aaa Lys 1650	cgg Arg	cag Gln	gcg Ala	4959
gag Glu	gcc Ala 1655	gag Glu	ctg Leu	gcc Ala	ctg Leu	cgt Arg 1660	gtg Val	aag Lys	gca Ala	gaa Glu	gcg Ala 1665	gag Glu	gca Ala	gcg Ala	5004
cga Arg	gag Glu 1670	aag Lys	cag Gln	cgg Arg	gcc Ala	ctg Leu 1675	cag Gln	gct Ala	ctg Leu	gat Asp	gaa Glu 1680	ctg Leu	aaa Lys	ctg Leu	5049
cag Gln	gcc Ala 1685	gag Glu	gag Glu	gcc Ala	gaa Glu	cgg Arg 1690	tgg Trp	ctg Leu	tgc Cys	caa Gln	gcc Ala 1695	gag Glu	gca Ala	gag Glu	5094
agg Arg	gct Ala 1700	cgc Arg	caa Gln	gtg Val	cag Gln	gta Val 1705	gcc Ala	ctg Leu	gag Glu	aca Thr	gcg Ala 1710	cag Gln	cgt Arg	agt Ser	5139
gca Ala	gaa Glu 1715	gtg Val	gag Glu	ctg Leu	cag Gln	agc Ser 1720	aag Lys	cgt Arg	ccg Pro	tcc Ser	ttt Phe 1725	gca Ala	gag Glu	aag Lys	5184
acc Thr	gca Ala 1730	cag Gln	ttg Leu	gag Glu	cgc Arg	acg Thr 1735	ctg Leu	cag Gln	gaa Glu	gag Glu	cac His 1740	gtg Val	aca Thr	gtg Val	5229
aca Thr	cag Gln 1745	ctg Leu	cgg Arg	gag Glu	gag Glu	gcg Ala 1750	gaa Glu	cgg Arg	cgg Arg	gca Ala	cag Gln 1755	cag Gln	cag Gln	gct Ala	5274
gaa Glu	gcc Ala 1760	gag Glu	cga Arg	gcc Ala	cgt Arg	gag Glu 1765	gaa Glu	gcc Ala	gag Glu	cgg Arg	gag Glu 1770	ctg Leu	gag Glu	cgc Arg	5319
tgg Trp	cag Gln 1775	ctg Leu	aag Lys	gcc Ala	aat Asn	gag Glu 1780	gcg Ala	ctg Leu	cgg Arg	ctg Leu	cgg Arg 1785	ctg Leu	cag Gln	gca Ala	5364
gag Glu	gag Glu 1790	gtg Val	gca Ala	cag Gln	cag Gln	aag Lys 1795	agc Ser	ctg Leu	gcc Ala	cag Gln	gcc Ala 1800	gat Asp	gcg Ala	gag Glu	5409
aag Lys	cag Gln 1805	aag Lys	gaa Glu	gag Glu	gca Ala	gaa Glu 1810	cgg Arg	gaa Glu	gcc Ala	cgg Arg	cgg Arg 1815	cgg Arg	ggc Gly	aag Lys	5454

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gca Ala	gag Glu 1820	gag Glu	cag Gln	gcc Ala	gtg Val	cgg Arg 1825	cag Gln	cga Arg	gag Glu	ctg Leu	gct Ala 1830	gag Glu	cag Gln	gag Glu	5499
ctg Leu	gag Glu 1835	aag Lys	cag Gln	cgg Arg	cag Gln	ctg Leu 1840	aca Thr	gag Glu	ggc Gly	acc Thr	gcc Ala 1845	cag Gln	cag Gln	cgc Arg	5544
ctg Leu	gct Ala 1850	gcc Ala	gag Glu	cag Gln	gag Glu	ctg Leu 1855	att Ile	cgc Arg	ctg Leu	cgg Arg	gca Ala 1860	gag Glu	acg Thr	gag Glu	5589
caa Gln	ggt Gly 1865	gag Glu	cat His	cag Gln	cgg Arg	cag Gln 1870	ctg Leu	ctg Leu	gag Glu	gaa Glu	gag Glu 1875	ctg Leu	gcc Ala	cgg Arg	5634
cta Leu	cag Gln 1880	cac His	gaa Glu	gcg Ala	aca Thr	gca Ala 1885	gcc Ala	aca Thr	cag Gln	aag Lys	cgc Arg 1890	cag Gln	gag Glu	ctg Leu	5679
gag Glu	gct Ala 1895	gag Glu	ctg Leu	gcg Ala	aag Lys	gtt Val 1900	cgg Arg	gca Ala	gag Glu	atg Met	gag Glu 1905	gta Val	ctg Leu	ctg Leu	5724
gcc Ala	agc Ser 1910	aag Lys	gca Ala	cga Arg	gcc Ala	gaa Glu 1915	gag Glu	gag Glu	tct Ser	cgc Arg	tcc Ser 1920	acc Thr	agt Ser	gaa Glu	5769
aag Lys	tcc Ser 1925	aag Lys	cag Gln	agg Arg	ctg Leu	gaa Glu 1930	gct Ala	gag Glu	gca Ala	ggg Gly	cgg Arg 1935	ttt Phe	cga Arg	gag Glu	5814
ctg Leu	gct Ala 1940	gag Glu	gag Glu	gct Ala	gcc Ala	cgc Arg 1945	ctg Leu	cgt Arg	gct Ala	ctg Leu	gcc Ala 1950	gag Glu	gag Glu	gca Ala	5859
agg Arg	cgg Arg 1955	cac His	cgg Arg	gag Glu	ttg Leu	gcc Ala 1960	gag Glu	gag Glu	gac Asp	gcg Ala	gca Ala 1965	cgc Arg	cag Gln	cgg Arg	5904
gcc Ala	gag Glu 1970	gcg Ala	gac Asp	gga Gly	gtg Val	ctt Leu 1975	acg Thr	gag Glu	aag Lys	ctg Leu	gct Ala 1980	gcc Ala	atc Ile	agt Ser	5949
gag Glu	gcc Ala 1985	aca Thr	agg Arg	ctc Leu	aag Lys	acg Thr 1990	gag Glu	gca Ala	gag Glu	att Ile	gca Ala 1995	ctc Leu	aaa Lys	gag Glu	5994
aag Lys	gag Glu 2000	gcc Ala	gag Glu	aac Asn	gag Glu	cgc Arg 2005	ctg Leu	agg Arg	cgc Arg	ctg Leu	gct Ala 2010	gaa Glu	gat Asp	gag Glu	6039
gcc Ala	ttc Phe 2015	cag Gln	cgg Arg	cgc Arg	cgg Arg	ctg Leu 2020	gag Glu	gag Glu	cag Gln	gca Ala	gca Ala 2025	cag Gln	cac His	aag Lys	6084
gca Ala	gac Asp 2030	ata Ile	gag Glu	gag Glu	cgc Arg	ctg Leu 2035	gcc Ala	cag Gln	ctg Leu	cgc Arg	aag Lys 2040	gca Ala	tcc Ser	gag Glu	6129
agc Ser	gag Glu 2045	ctg Leu	gag Glu	cga Arg	cag Gln	aag Lys 2050	ggg Gly	ttg Leu	gtg Val	gag Glu	gat Asp 2055	acc Thr	ctg Leu	cgg Arg	6174
cag Gln	cgg Arg 2060	cgg Arg	cag Gln	gtg Val	gag Glu	gag Glu 2065	gag Glu	atc Ile	atg Met	gct Ala	ctg Leu 2070	aag Lys	gcg Ala	agc Ser	6219
ttc	gag	aag	gcc	gcg	gct	ggc	aag	gca	gaa	ctg	gag	ctg	gag	ctt	6264



Phe	Glu	Lys	Ala	Ala	Ala	Gly	Lys	Ala	Glu	Leu	Glu	Leu	Glu	Leu	
	2075					2080					2085				
ggc	cgc	atc	cgc	agc	aat	gcc	gag	gac	acc	atg	cgc	agc	aag	gag	6309
Gly	Arg	Ile	Arg	Ser	Asn	Ala	Glu	Asp	Thr	Met	Arg	Ser	Lys	Glu	
	2090					2095					2100				
ctg	gcc	gag	cag	gag	gca	gcg	cgg	cag	cgg	cag	ttg	gca	gct	gag	6354
Leu	Ala	Glu	Gln	Glu	Ala	Ala	Arg	Gln	Arg	Gln	Leu	Ala	Ala	Glu	
	2105					2110					2115				
gag	gag	cag	agg	cgc	cgg	gaa	gcc	gag	gag	cgg	gtg	cag	agg	agc	6399
Glu	Glu	Gln	Arg	Arg	Arg	Glu	Ala	Glu	Glu	Arg	Val	Gln	Arg	Ser	
	2120					2125					2130				
ctg	gca	gcg	gag	gag	gaa	gcc	gca	cgg	cag	cgc	aag	gtc	gca	ctg	6444
Leu	Ala	Ala	Glu	Glu	Glu	Ala	Ala	Arg	Gln	Arg	Lys	Val	Ala	Leu	
	2135					2140					2145				
gag	gaa	gtc	gag	cgg	ctc	aag	gcc	aag	gtt	gag	gaa	gcg	cgg	cgc	6489
Glu	Glu	Val	Glu	Arg	Leu	Lys	Ala	Lys	Val	Glu	Glu	Ala	Arg	Arg	
	2150					2155					2160				
ctg	cga	gag	cga	gct	gag	cag	gag	tct	gcg	agg	cag	ctg	cag	ctg	6534
Leu	Arg	Glu	Arg	Ala	Glu	Gln	Glu	Ser	Ala	Arg	Gln	Leu	Gln	Leu	
	2165					2170					2175				
gcc	cag	gag	gct	gcc	cag	aaa	cgg	ctg	cag	gcg	gag	gag	aag	gcg	6579
Ala	Gln	Glu	Ala	Ala	Gln	Lys	Arg	Leu	Gln	Ala	Glu	Glu	Lys	Ala	
	2180					2185					2190				
cac	gcc	ttt	gtg	gtg	cag	cag	cga	gaa	gag	gag	ctg	cag	cag	act	6624
His	Ala	Phe	Val	Val	Gln	Gln	Arg	Glu	Glu	Glu	Leu	Gln	Gln	Thr	
	2195					2200					2205				
ctt	cag	caa	gag	cag	aac	atg	ctg	gag	cgg	ctg	cgg	agc	gag	gca	6669
Leu	Gln	Gln	Glu	Gln	Asn	Met	Leu	Glu	Arg	Leu	Arg	Ser	Glu	Ala	
	2210					2215					2220				
gag	gca	gcg	cgg	cga	gct	gct	gag	gag	gcg	gag	gag	gcc	cgg	gag	6714
Glu	Ala	Ala	Arg	Arg	Ala	Ala	Glu	Glu	Ala	Glu	Glu	Ala	Arg	Glu	
	2225					2230					2235				
cag	gca	gaa	cgt	gag	gca	gcg	cag	tct	agg	aag	caa	gtg	gaa	gag	6759
Gln	Ala	Glu	Arg	Glu	Ala	Ala	Gln	Ser	Arg	Lys	Gln	Val	Glu	Glu	
	2240					2245					2250				
gcc	gag	cgg	ctg	aag	cag	tcg	gca	gag	gag	cag	gct	cag	gcc	cag	6804
Ala	Glu	Arg	Leu	Lys	Gln	Ser	Ala	Glu	Glu	Gln	Ala	Gln	Ala	Gln	
	2255					2260					2265				
gcc	cag	gcg	cag	gcg	gct	gca	gag	aaa	ctg	cgc	aag	gaa	gcg	gag	6849
Ala	Gln	Ala	Gln	Ala	Ala	Ala	Glu	Lys	Leu	Arg	Lys	Glu	Ala	Glu	
	2270					2275					2280				
cag	gag	gcg	gcg	cgt	cgg	gcc	cag	gcg	gag	cag	gct	gcg	ttg	aaa	6894
Gln	Glu	Ala	Ala	Arg	Arg	Ala	Gln	Ala	Glu	Gln	Ala	Ala	Leu	Lys	
	2285					2290					2295				
cag	aag	cag	gca	gcc	gac	gcg	gag	atg	gag	aag	cac	aag	aag	ttt	6939
Gln	Lys	Gln	Ala	Ala	Asp	Ala	Glu	Met	Glu	Lys	His	Lys	Lys	Phe	
	2300					2305					2310				
gca	gag	cag	acg	cta	cgg	cag	aag	gct	cag	gta	gag	cag	gag	ctg	6984
Ala	Glu	Gln	Thr	Leu	Arg	Gln	Lys	Ala	Gln	Val	Glu	Gln	Glu	Leu	
	2315					2320					2325				
acc	acg	ctg	agg	ctg	cag	ctc	gag	gag	acc	gac	cac	cag	aag	agc	7029
Thr	Thr	Leu	Arg	Leu	Gln	Leu	Glu	Glu	Thr	Asp	His	Gln	Lys	Ser	

2330	2335	2340		
atc ctg gat gag gag ctg cag cgg cta aag gct gag gta aca gag Ile Leu Asp Glu Glu Leu Gln Arg Leu Lys Ala Glu Val Thr Glu	2345	2350	2355	7074
gca gcc cgg cag cgt agc cag gta gag gag gag ctc ttc tct gtc Ala Ala Arg Gln Arg Ser Gln Val Glu Glu Glu Leu Phe Ser Val	2360	2365	2370	7119
cgc gtg cag atg gag gag ctg ggc aaa ctc aag gct cgc att gaa Arg Val Gln Met Glu Glu Leu Gly Lys Leu Lys Ala Arg Ile Glu	2375	2380	2385	7164
gct gaa aac cgg gca ctc atc ctt cgt gac aag gac aac aca cag Ala Glu Asn Arg Ala Leu Ile Leu Arg Asp Lys Asp Asn Thr Gln	2390	2395	2400	7209
cgc ttc ctg gag gag gag gcc gag aag atg aaa cag gtg gca gag Arg Phe Leu Glu Glu Glu Ala Glu Lys Met Lys Gln Val Ala Glu	2405	2410	2415	7254
gaa gct gca cgg ttg agc gta gct gcc cag gag gca gca agg ctg Glu Ala Ala Arg Leu Ser Val Ala Ala Gln Glu Ala Arg Leu	2420	2425	2430	7299
cgg cag cta gcc gag gag gac ctg gcc cag cag cgg gcc ctg gcg Arg Gln Leu Ala Glu Glu Asp Leu Ala Gln Gln Arg Ala Leu Ala	2435	2440	2445	7344
gag aag atg ctg aag gag aag atg cag gcg gtg cag gaa gcc aca Glu Lys Met Leu Lys Glu Lys Met Gln Ala Val Gln Glu Ala Thr	2450	2455	2460	7389
agg ctc aag gct gag gct gag ctg ctg cag cag cag aag gag ctg Arg Leu Lys Ala Glu Ala Glu Leu Leu Gln Gln Gln Lys Glu Leu	2465	2470	2475	7434
gca cag gag cag gcc cgg cgg ctg cag gcg gac aag gag caa atg Ala Gln Glu Gln Ala Arg Arg Leu Gln Ala Asp Lys Glu Gln Met	2480	2485	2490	7479
gct cag cag ttg gta gag gag aca cag ggt ttc cag cgg acc ctg Ala Gln Gln Leu Val Glu Glu Thr Gln Gly Phe Gln Arg Thr Leu	2495	2500	2505	7524
gag gct gag cgg cag cgg cag cta gaa atg agc gca gag gct gaa Glu Ala Glu Arg Gln Arg Gln Leu Glu Met Ser Ala Glu Ala Glu	2510	2515	2520	7569
cgc ctc aag ttg cgc atg gct gag atg agc cgg gct cag gcc cgt Arg Leu Lys Leu Arg Met Ala Glu Met Ser Arg Ala Gln Ala Arg	2525	2530	2535	7614
gca gag gag gat gcc cag cgc ttc cgg aag cag gct gaa gag atc Ala Glu Glu Asp Ala Gln Arg Arg Phe Arg Lys Gln Ala Glu Glu Ile	2540	2545	2550	7659
ggc gaa aag ctg cac cgc act gaa ctc gct aca cag gag aag gtg Gly Glu Lys Leu His Arg Thr Glu Leu Ala Thr Gln Glu Lys Val	2555	2560	2565	7704
aca ttg gtg cag act ctc gag atc cag cga cag cag agt gac caa Thr Leu Val Gln Thr Leu Glu Ile Gln Arg Gln Gln Ser Asp Gln	2570	2575	2580	7749
gat gcc gag cgt ctg agg gag gcc att gct gag ctg gag cgt gag Asp Ala Glu Arg Leu Arg Glu Ala Ile Ala Glu Leu Glu Arg Glu	2585	2590	2595	7794

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aag Lys	gag Glu 2600	aag Lys	ctc Leu	aag Lys	cag Gln	gag Glu 2605	gcg Ala	aag Lys	tta Leu	ctg Leu	cag Gln 2610	ctc Leu	aag Lys	tct Ser	7839
gag Glu	gag Glu 2615	atg Met	cag Gln	act Thr	gtg Val	cag Gln 2620	cag Gln	gag Glu	cag Gln	ata Ile	ctg Leu 2625	cag Gln	gag Glu	aca Thr	7884
cag Gln	gcc Ala 2630	ctg Leu	cag Gln	aag Lys	agc Ser	ttt Phe 2635	ctc Leu	tct Ser	gag Glu	aag Lys	gac Asp 2640	agc Ser	ttg Leu	ctg Leu	7929
caa Gln	cgc Arg 2645	gaa Glu	cgc Arg	ttc Phe	atc Ile	gag Glu 2650	cag Gln	gag Glu	aag Lys	gcc Ala	aag Lys 2655	ctg Leu	gag Glu	cag Gln	7974
ctt Leu	ttc Phe 2660	cag Gln	gac Asp	gag Glu	gtg Val	gca Ala 2665	aaa Lys	gca Ala	aaa Lys	cag Gln	ctg Leu 2670	cag Gln	gag Glu	gag Glu	8019
cag Gln	cag Gln 2675	cgg Arg	cag Gln	cag Gln	cag Gln	cag Gln 2680	atg Met	gag Glu	cag Gln	gaa Glu	aag Lys 2685	cag Gln	gag Glu	ctg Leu	8064
gtg Val	gcc Ala 2690	agc Ser	atg Met	gag Glu	gag Glu	gcc Ala 2695	cgg Arg	agg Arg	cgg Arg	cag Gln	cgt Arg 2700	gag Glu	gca Ala	gag Glu	8109
gag Glu	ggt Gly 2705	gtg Val	agg Arg	cgc Arg	aag Lys	caa Gln 2710	gag Glu	gaa Glu	ctg Leu	cag Gln	cgt Arg 2715	ctg Leu	gag Glu	cag Gln	8154
cag Gln	cgg Arg 2720	cag Gln	cag Gln	cag Gln	gag Glu	aaa Lys 2725	cta Leu	ctg Leu	gca Ala	gag Glu	gag Glu 2730	aac Asn	cag Gln	agg Arg	8199
ctg Leu	cgg Arg 2735	gag Glu	cgg Arg	ctg Leu	cag Gln	cgc Arg 2740	ctg Leu	gag Glu	gaa Glu	gag Glu	cac His 2745	cga Arg	gct Ala	gcg Ala	8244
ttg Leu	gcg Ala 2750	cac His	tct Ser	gag Glu	gag Glu	atc Ile 2755	gcc Ala	acc Thr	tcc Ser	cag Gln	gct Ala 2760	gct Ala	gcc Ala	aca Thr	8289
aaa Lys	gca Ala 2765	ctg Leu	ccc Pro	aat Asn	ggc Gly	cgc Arg 2770	gac Asp	gca Ala	ctt Leu	gat Asp	ggc Gly 2775	ccc Pro	tcc Ser	atg Met	8334
gag Glu	gcc Ala 2780	gag Glu	ccc Pro	gag Glu	tac Tyr	acc Thr 2785	ttt Phe	gag Glu	gga Gly	tta Leu	cgt Arg 2790	cag Gln	aag Lys	gtg Val	8379
cca Pro	gct Ala 2795	cag Gln	cag Gln	cta Leu	cag Gln	gaa Glu 2800	gca Ala	ggc Gly	att Ile	ctg Leu	agc Ser 2805	atg Met	gag Glu	gaa Glu	8424
ctg Leu	cag Gln 2810	cgt Arg	ttg Leu	aca Thr	cag Gln	ggt Gly 2815	cac His	acc Thr	acg Thr	gtg Val	gct Ala 2820	gag Glu	ctc Leu	acg Thr	8469
cag Gln	cgg Arg 2825	gaa Glu	gat Asp	gtg Val	cgc Arg	cac His 2830	tac Tyr	ctg Leu	aag Lys	ggc Gly	ggc Gly 2835	agc Ser	agc Ser	atc Ile	8514
gca Ala	gga Gly 2840	ttg Leu	ctc Leu	ctg Leu	aag Lys	ccc Pro 2845	acc Thr	aat Asn	gag Glu	aaa Lys	ctg Leu 2850	agt Ser	gtc Val	tac Tyr	8559

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aca Thr	gcc Ala 2855	cta Leu	cag Gln	cgg Arg	cag Gln	ctg Leu 2860	ctc Leu	agc Ser	cct Pro	gga Gly	aca Thr 2865	gcc Ala	ctt Leu	atc Ile	8604
tta Leu	ctt Leu 2870	gag Glu	gcc Ala	cag Gln	gca Ala	gcc Ala 2875	tcg Ser	ggc Gly	ttc Phe	ctg Leu	ctg Leu 2880	gac Asp	cct Pro	gtc Val	8649
cgg Arg	aac Asn 2885	cgg Arg	cgg Arg	ctg Leu	acg Thr	gtc Val 2890	aat Asn	gag Glu	gct Ala	gtg Val	aag Lys 2895	gag Glu	ggg Gly	gtg Val	8694
gtg Val	ggg Gly 2900	ccc Pro	gag Glu	ctg Leu	cac His	cac His 2905	aag Lys	ctg Leu	ctg Leu	tca Ser	gct Ala 2910	gag Glu	cgt Arg	gcc Ala	8739
gtc Val	act Thr 2915	ggc Gly	tac Tyr	aag Lys	gac Asp	cct Pro 2920	tac Tyr	aca Thr	gga Gly	gaa Glu	cag Gln 2925	atc Ile	tct Ser	ctc Leu	8784
ttc Phe	cag Gln 2930	gcc Ala	atg Met	aag Lys	aag Lys	gac Asp 2935	ctc Leu	att Ile	gtc Val	agg Arg	gac Asp 2940	cat His	ggc Gly	atc Ile	8829
cgc Arg	ctg Leu 2945	ctg Leu	gaa Glu	gcc Ala	cag Gln	atc Ile 2950	gcc Ala	aca Thr	ggg Gly	ggc Gly	atc Ile 2955	att Ile	gac Asp	cct Pro	8874
gta Val	cac His 2960	agc Ser	cac His	cgt Arg	gtt Val	ccc Pro 2965	gtg Val	gac Asp	gtg Val	gcc Ala	tac Tyr 2970	cag Gln	cgt Arg	ggc Gly	8919
tac Tyr	ttc Phe 2975	gat Asp	gag Glu	gag Glu	atg Met	aac Asn 2980	cgt Arg	gtg Val	ctg Leu	gct Ala	gac Asp 2985	cca Pro	agc Ser	gat Asp	8964
gac Asp	acc Thr 2990	aag Lys	ggc Gly	ttc Phe	ttt Phe	gac Asp 2995	ccc Pro	aac Asn	act Thr	cac His	gag Glu 3000	aac Asn	ctc Leu	acg Thr	9009
tac Tyr	ctg Leu 3005	cag Gln	ctg Leu	ctg Leu	gag Glu	cgc Arg 3010	tgt Cys	gtg Val	gag Glu	gac Asp	ccc Pro 3015	gag Glu	aca Thr	ggc Gly	9054
ctg Leu	cgc Arg 3020	ctc Leu	ctg Leu	cca Pro	ctc Leu	aca Thr 3025	gac Asp	aag Lys	gct Ala	gcc Ala	aag Lys 3030	ggg Gly	ggg Gly	gag Glu	9099
ctg Leu	gtg Val 3035	tac Tyr	act Thr	gac Asp	acg Thr	gag Glu 3040	gcc Ala	cgt Arg	gac Asp	gtc Val	ttc Phe 3045	gaa Glu	aag Lys	gcc Ala	9144
aca Thr	gtg Val 3050	tct Ser	gca Ala	cca Pro	ttc Phe	ggc Gly 3055	aag Lys	ttc Phe	cag Gln	ggc Gly	aag Lys 3060	acc Thr	gtg Val	acc Thr	9189
atc Ile	tgg Trp 3065	gag Glu	atc Ile	atc Ile	aac Asn	tca Ser 3070	gag Glu	tac Tyr	ttc Phe	aca Thr	gcg Ala 3075	gag Glu	cag Gln	cga Arg	9234
cgg Arg	gac Asp 3080	ctg Leu	ctc Leu	cgg Arg	cag Gln	ttc Phe 3085	cgc Arg	acg Thr	ggc Gly	cgc Arg	atc Ile 3090	acg Thr	gtg Val	gag Glu	9279
aag Lys	atc Ile 3095	atc Ile	aag Lys	att Ile	gtc Val	atc Ile 3100	acg Thr	gtg Val	gta Val	gag Glu	gaa Glu 3105	cac His	gag Glu	cgg Arg	9324
aag	ggc	cag	ctc	tgc	ttt	gag	ggc	ctc	cgt	gcc	ctt	gtg	cct	gct	9369

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Lys	Gly	Gln	Leu	Cys	Phe	Glu	Gly	Leu	Arg	Ala	Leu	Val	Pro	Ala		
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gca	gag	ctg	ctg	gac	agt	gga	gtc	atc	agt	cat	gaa	gtc	tac	cag	9414	
Ala	Glu	Leu	Leu	Asp	Ser	Gly	Val	Ile	Ser	His	Glu	Val	Tyr	Gln		
	3125					3130					3135					
cag	ctg	cag	cgg	ggt	gag	cgc	tct	gtg	cgg	gaa	gtg	gcc	gag	gca	9459	
Gln	Leu	Gln	Arg	Gly	Glu	Arg	Ser	Val	Arg	Glu	Val	Ala	Glu	Ala		
	3140					3145					3150					
gac	gag	gtg	agg	cag	gcc	ctg	cgg	ggt	acc	agt	gtc	att	gcc	ggt	9504	
Asp	Glu	Val	Arg	Gln	Ala	Leu	Arg	Gly	Thr	Ser	Val	Ile	Ala	Gly		
	3155					3160					3165					
gtg	tgg	ctg	gaa	gaa	gca	ggg	cag	aag	ctg	agc	atc	tat	gag	gcc	9549	
Val	Trp	Leu	Glu	Glu	Ala	Gly	Gln	Lys	Leu	Ser	Ile	Tyr	Glu	Ala		
	3170					3175					3180					
ctg	agg	aga	gat	ttg	ctg	cag	cca	gag	gtg	gct	gtg	gcc	ttg	ctg	9594	
Leu	Arg	Arg	Asp	Leu	Leu	Gln	Pro	Glu	Val	Ala	Val	Ala	Leu	Leu		
	3185					3190					3195					
gag	gcc	cag	gct	ggc	act	ggg	cac	atc	att	gac	cct	gcc	acg	agt	9639	
Glu	Ala	Gln	Ala	Gly	Thr	Gly	His	Ile	Ile	Asp	Pro	Ala	Thr	Ser		
	3200					3205					3210					
gcc	agg	ctg	act	gtg	gat	gag	gca	gtg	cgt	gct	ggc	ctg	gtg	ggt	9684	
Ala	Arg	Leu	Thr	Val	Asp	Glu	Ala	Val	Arg	Ala	Gly	Leu	Val	Gly		
	3215					3220					3225					
cct	gag	atg	cac	gag	aag	ctc	ttg	tca	gct	gag	aag	gct	gta	aca	9729	
Pro	Glu	Met	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Lys	Ala	Val	Thr		
	3230					3235					3240					
ggc	tat	agg	gat	ccc	tac	tcg	gga	cag	agc	gtc	tcg	ctc	ttc	cag	9774	
Gly	Tyr	Arg	Asp	Pro	Tyr	Ser	Gly	Gln	Ser	Val	Ser	Leu	Phe	Gln		
	3245					3250					3255					
gct	ctg	aag	aag	ggt	ctc	atc	ccc	cga	gaa	cag	ggc	ctg	cgc	ctg	9819	
Ala	Leu	Lys	Lys	Gly	Leu	Ile	Pro	Arg	Glu	Gln	Gly	Leu	Arg	Leu		
	3260					3265					3270					
ctg	gat	gcc	cag	tta	tcc	act	ggt	ggc	att	gta	gac	ccc	agc	aaa	9864	
Leu	Asp	Ala	Gln	Leu	Ser	Thr	Gly	Gly	Ile	Val	Asp	Pro	Ser	Lys		
	3275					3280					3285					
agc	cac	cgt	gtg	ccc	ctg	gat	ggt	gcc	tat	gcc	cgg	ggc	tac	ctg	9909	
Ser	His	Arg	Val	Pro	Leu	Asp	Val	Ala	Tyr	Ala	Arg	Gly	Tyr	Leu		
	3290					3295					3300					
gac	aaa	gag	act	aac	agg	gcc	ctg	acg	tca	ccc	aga	gac	gat	gcc	9954	
Asp	Lys	Glu	Thr	Asn	Arg	Ala	Leu	Thr	Ser	Pro	Arg	Asp	Asp	Ala		
	3305					3310					3315					
aga	gtc	tac	ctt	gac	ccc	agc	acc	cgg	gag	cca	gtc	acc	tac	agc	9999	
Arg	Val	Tyr	Leu	Asp	Pro	Ser	Thr	Arg	Glu	Pro	Val	Thr	Tyr	Ser		
	3320					3325					3330					
cag	ctc	caa	cag	cgg	tgc	cgg	tct	gac	cag	ctg	act	ggg	ttg	agc	10044	
Gln	Leu	Gln	Gln	Arg	Cys	Arg	Ser	Asp	Gln	Leu	Thr	Gly	Leu	Ser		
	3335					3340					3345					
cta	ctg	ccc	ctc	tca	gag	aag	gcc	gtc	cgg	gcc	cgg	cag	gaa	gag	10089	
Leu	Leu	Pro	Leu	Ser	Glu	Lys	Ala	Val	Arg	Ala	Arg	Gln	Glu	Glu		
	3350					3355					3360					
gtc	tac	tct	gag	ctc	cag	gcc	cgt	gag	aca	ttg	gag	aag	gcc	aag	10134	
Val	Tyr	Ser	Glu	Leu	Gln	Ala	Arg	Glu	Thr	Leu	Glu	Lys	Ala	Lys		

3365						3370						3375					
gtg	gag	gtt	cct	gtg	ggc	ggc	ttt	aag	ggc	agg	gcg	ctg	aca	gtg			10179
Val	Glu	Val	Pro	Val	Gly	Gly	Phe	Lys	Gly	Arg	Ala	Leu	Thr	Val			
	3380					3385					3390						
tgg	gag	ctc	ata	agc	tcg	gaa	tac	ttc	act	gag	gag	cag	cgg	cag			10224
Trp	Glu	Leu	Ile	Ser	Ser	Glu	Tyr	Phe	Thr	Glu	Glu	Gln	Arg	Gln			
	3395					3400					3405						
gag	ctg	cta	cgg	cag	ttc	cgc	aca	ggc	aag	gtc	act	gta	gag	aag			10269
Glu	Leu	Leu	Arg	Gln	Phe	Arg	Thr	Gly	Lys	Val	Thr	Val	Glu	Lys			
	3410					3415					3420						
gtc	atc	aag	att	ctt	atc	acc	att	gtg	gag	gag	gtg	gag	act	caa			10314
Val	Ile	Lys	Ile	Leu	Ile	Thr	Ile	Val	Glu	Glu	Val	Glu	Thr	Gln			
	3425					3430					3435						
cgg	cag	gag	aga	ctg	tcc	ttc	agt	ggc	ctc	cgt	gcc	cct	gtg	ccg			10359
Arg	Gln	Glu	Arg	Leu	Ser	Phe	Ser	Gly	Leu	Arg	Ala	Pro	Val	Pro			
	3440					3445					3450						
gcc	agt	gag	ctc	ctg	gcc	tcc	aag	atc	ctc	agc	aga	act	cag	ttt			10404
Ala	Ser	Glu	Leu	Leu	Ala	Ser	Lys	Ile	Leu	Ser	Arg	Thr	Gln	Phe			
	3455					3460					3465						
gag	cag	ctc	aag	gat	ggc	aag	aca	tca	gtc	aaa	gat	ctg	tca	gag			10449
Glu	Gln	Leu	Lys	Asp	Gly	Lys	Thr	Ser	Val	Lys	Asp	Leu	Ser	Glu			
	3470					3475					3480						
gtg	ggc	tct	gtg	cgg	aca	ctg	ctg	caa	ggc	agc	ggc	tgc	ctg	gct			10494
Val	Gly	Ser	Val	Arg	Thr	Leu	Leu	Gln	Gly	Ser	Gly	Cys	Leu	Ala			
	3485					3490					3495						
ggc	atc	tat	ctg	gag	gac	tcg	aag	gag	aaa	gta	acc	atc	tat	gag			10539
Gly	Ile	Tyr	Leu	Glu	Asp	Ser	Lys	Glu	Lys	Val	Thr	Ile	Tyr	Glu			
	3500					3505					3510						
gcc	atg	cgc	cgg	ggc	ctc	ctc	aga	gcc	agc	aca	gcc	aca	ctc	ctg			10584
Ala	Met	Arg	Arg	Gly	Leu	Leu	Arg	Ala	Ser	Thr	Ala	Thr	Leu	Leu			
	3515					3520					3525						
ctg	gag	gcc	cag	gcg	gcc	act	ggt	ttt	cta	gtg	gac	cct	gtg	cgg			10629
Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Leu	Val	Asp	Pro	Val	Arg			
	3530					3535					3540						
aac	caa	cgt	ctg	tac	gtc	cat	gaa	gct	gtc	aag	gct	gga	gtg	gtg			10674
Asn	Gln	Arg	Leu	Tyr	Val	His	Glu	Ala	Val	Lys	Ala	Gly	Val	Val			
	3545					3550					3555						
ggc	ccg	gag	ctc	cat	gag	aag	ctg	ctg	tcg	gct	gag	aag	gcg	gtc			10719
Gly	Pro	Glu	Leu	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Lys	Ala	Val			
	3560					3565					3570						
act	ggt	tac	aaa	gat	ccc	tac	tct	ggc	agc	acc	atc	tcg	ctg	ttc			10764
Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	Ser	Thr	Ile	Ser	Leu	Phe			
	3575					3580					3585						
cag	gcc	atg	aag	aag	ggc	ttg	gtc	ctc	agg	gac	cat	gcc	atc	cgc			10809
Gln	Ala	Met	Lys	Lys	Gly	Leu	Val	Leu	Arg	Asp	His	Ala	Ile	Arg			
	3590					3595					3600						
ctg	ctg	gag	gcc	cag	att	gcc	aca	ggt	ggc	atc	att	gac	cct	gtg			10854
Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Val			
	3605					3610					3615						
cac	agt	cac	cgc	ctt	ccc	gta	gat	gtt	gcc	tac	cag	cgt	ggc	tac			10899
His	Ser	His	Arg	Leu	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg	Gly	Tyr			
	3620					3625					3630						

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ttc Phe	gat Asp 3635	gag Glu	gag Glu	atg Met	aac Asn	cgt Arg 3640	gtg Val	ctg Leu	gct Ala	gac Asp	cca Pro 3645	agt Ser	gat Asp	gac Asp	10944
acc Thr	aag Lys 3650	ggc Gly	ttc Phe	ttc Phe	gac Asp	ccc Pro 3655	aac Asn	acc Thr	cac His	gag Glu	aac Asn 3660	ctc Leu	acg Thr	tac Tyr	10989
ctg Leu	cag Gln 3665	ctg Leu	ctg Leu	gag Glu	cgc Arg	tgc Cys 3670	gtg Val	gag Glu	gac Asp	ccc Pro	gag Glu 3675	aca Thr	ggc Gly	ctg Leu	11034
cgc Arg	ctc Leu 3680	ctg Leu	cca Pro	ctc Leu	aga Arg	ggg Gly 3685	gca Ala	gag Glu	aag Lys	aca Thr	gag Glu 3690	gtg Val	gta Val	gaa Glu	11079
acc Thr	aca Thr 3695	cag Gln	gtg Val	tat Tyr	act Thr	gag Glu 3700	gag Glu	gag Glu	act Thr	cgg Arg	agg Arg 3705	gcg Ala	ttc Phe	gag Glu	11124
gag Glu	acg Thr 3710	cag Gln	att Ile	gac Asp	atc Ile	cca Pro 3715	ggg Gly	ggg Gly	ggc Gly	agc Ser	cac His 3720	ggg Gly	ggc Gly	tcc Ser	11169
tcc Ser	atg Met 3725	tct Ser	cta Leu	tgg Trp	gag Glu	gtg Val 3730	atg Met	cag Gln	tca Ser	gac Asp	atg Met 3735	atc Ile	cca Pro	gag Glu	11214
gac Asp	cag Gln 3740	cgt Arg	gcc Ala	cgg Arg	ctc Leu	atg Met 3745	gcc Ala	gac Asp	ttt Phe	cag Gln	gct Ala 3750	ggc Gly	aga Arg	gtg Val	11259
acc Thr	aag Lys 3755	gag Glu	cgc Arg	atg Met	atc Ile	att Ile 3760	atc Ile	atc Ile	atc Ile	gaa Glu	atc Ile 3765	att Ile	gag Glu	aag Lys	11304
acg Thr	gag Glu 3770	atc Ile	atc Ile	cgc Arg	cag Gln	cag Gln 3775	aac Asn	ctc Leu	gcc Ala	tcc Ser	tat Tyr 3780	gac Asp	tac Tyr	gta Val	11349
cgc Arg	cgc Arg 3785	cgc Arg	ctc Leu	acc Thr	gcc Ala	gaa Glu 3790	gac Asp	ctg Leu	tat Tyr	gag Glu	gcc Ala 3795	cgg Arg	atc Ile	atc Ile	11394
tcc Ser	ctt Leu 3800	gag Glu	acc Thr	tac Tyr	aac Asn	ctc Leu 3805	ttc Phe	cgg Arg	gaa Glu	ggc Gly	acc Thr 3810	aag Lys	agc Ser	ctc Leu	11439
cgt Arg	gag Glu 3815	gtt Val	ctg Leu	gag Glu	atg Met	gaa Glu 3820	tct Ser	gcc Ala	tgg Trp	cgc Arg	tac Tyr 3825	ctt Leu	tac Tyr	ggc Gly	11484
aca Thr	gga Gly 3830	tcg Ser	gtg Val	gcc Ala	ggg Gly	gtc Val 3835	tac Tyr	ctg Leu	cct Pro	ggc Gly	tct Ser 3840	agg Arg	cag Gln	acg Thr	11529
cta Leu	acc Thr 3845	atc Ile	tac Tyr	cag Gln	gcc Ala	ctt Leu 3850	aag Lys	aag Lys	ggg Gly	ctg Leu	ctg Leu 3855	agt Ser	gcc Ala	gag Glu	11574
gtg Val	gcc Ala 3860	cgc Arg	ttg Leu	ctg Leu	ctg Leu	gaa Glu 3865	gca Ala	cag Gln	gca Ala	gcc Ala	aca Thr 3870	ggc Gly	ttt Phe	ctg Leu	11619
ctg Leu	gac Asp 3875	cca Pro	gtg Val	aaa Lys	ggc Gly	gag Glu 3880	agg Arg	ctg Leu	act Thr	gtg Val	gac Asp 3885	gag Glu	gcc Ala	gtg Val	11664

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cgg Arg	aag Lys 3890	ggt Gly	ctg Leu	gta Val	ggc Gly	ccc Pro 3895	gag Glu	ctg Leu	cac His	gat Asp	cgg Arg 3900	ctc Leu	ctc Leu	tct Ser	11709
gcc Ala	gag Glu 3905	cga Arg	gct Ala	gta Val	act Thr	ggc Gly 3910	tac Tyr	cga Arg	gac Asp	ccc Pro	tac Tyr 3915	acc Thr	gaa Glu	cag Gln	11754
ccc Pro	atc Ile 3920	tca Ser	ctc Leu	ttc Phe	cag Gln	gcc Ala 3925	atg Met	aag Lys	aag Lys	gag Glu	ctg Leu 3930	atc Ile	cct Pro	gcc Ala	11799
gag Glu	gag Glu 3935	gca Ala	ctg Leu	agg Arg	ctg Leu	ctg Leu 3940	gat Asp	gct Ala	cag Gln	cta Leu	gcc Ala 3945	aca Thr	gga Gly	ggc Gly	11844
att Ile	gtg Val 3950	gac Asp	ccc Pro	cgc Arg	ctg Leu	ggc Gly 3955	ttc Phe	cac His	ctc Leu	ccc Pro	ctg Leu 3960	gag Glu	gtg Val	gct Ala	11889
tac Tyr	caa Gln 3965	cga Arg	ggc Gly	tac Tyr	ctc Leu	aat Asn 3970	aag Lys	gac Asp	acg Thr	cat His	gac Asp 3975	cag Gln	ttg Leu	tca Ser	11934
gag Glu	ccc Pro 3980	agt Ser	gag Glu	gtg Val	cgc Arg	agc Ser 3985	tat Tyr	gtg Val	gac Asp	ccc Pro	tcc Ser 3990	acg Thr	gat Asp	gag Glu	11979
cgt Arg	ctc Leu 3995	agc Ser	tac Tyr	aca Thr	cag Gln	ctg Leu 4000	ctc Leu	aag Lys	cgt Arg	tgc Cys	cgc Arg 4005	cgt Arg	gac Asp	gac Asp	12024
aac Asn	agc Ser 4010	ggc Gly	cag Gln	atg Met	ctg Leu	ctg Leu 4015	ccg Pro	ctc Leu	tct Ser	gat Asp	gcc Ala 4020	cgc Arg	aag Lys	ctg Leu	12069
acc Thr	ttc Phe 4025	cgc Arg	ggc Gly	ctg Leu	cgc Arg	aag Lys 4030	cag Gln	atc Ile	acc Thr	gtg Val	gag Glu 4035	gag Glu	ctg Leu	gta Val	12114
cgc Arg	tct Ser 4040	cag Gln	gtc Val	atg Met	gat Asp	gag Glu 4045	gcc Ala	aca Thr	gca Ala	ctg Leu	cag Gln 4050	ctg Leu	caa Gln	gaa Glu	12159
ggc Gly	ctg Leu 4055	acc Thr	tcc Ser	att Ile	gag Glu	gag Glu 4060	gtc Val	act Thr	aag Lys	aac Asn	ctg Leu 4065	cag Gln	aag Lys	ttc Phe	12204
ctt Leu	gag Glu 4070	ggt Gly	acc Thr	agc Ser	tgc Cys	att Ile 4075	gct Ala	gga Gly	gtc Val	ttt Phe	gtt Val 4080	gat Asp	gct Ala	acc Thr	12249
aag Lys	gaa Glu 4085	cgg Arg	ctg Leu	tcg Ser	gtg Val	tac Tyr 4090	cag Gln	gcc Ala	atg Met	aag Lys	aag Lys 4095	ggc Gly	atc Ile	atc Ile	12294
cgt Arg	ccc Pro 4100	ggg Gly	aca Thr	gcc Ala	ttc Phe	gag Glu 4105	ctc Leu	ctg Leu	gaa Glu	gcg Ala	cag Gln 4110	gca Ala	gcc Ala	acc Thr	12339
ggc Gly	tac Tyr 4115	gtc Val	att Ile	gac Asp	cct Pro	atc Ile 4120	aag Lys	ggg Gly	ctc Leu	aag Lys	ctg Leu 4125	act Thr	gtg Val	gaa Glu	12384
gag Glu	gcc Ala 4130	gtg Val	cgc Arg	atg Met	ggc Gly	atc Ile 4135	gtg Val	ggc Gly	ccc Pro	gag Glu	ttc Phe 4140	aag Lys	gac Asp	aag Lys	12429
ctg Arg	ctg Arg	tct Ser	gct Thr	gag Arg	cgt Thr	gcc Ala	gtc Thr	act Thr	ggc Gly	tac Thr	aag Lys	gac Thr	cct Thr	tac Thr	12474



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Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	
4145						4150					4155				
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Ser	Gly	Lys	Leu	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	
4160						4165					4170				
atc	ctg	aag	gac	cat	ggc	atc	cgc	ctg	cta	gag	gct	cag	atc	gcc	12564
Ile	Leu	Lys	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	
4175						4180					4185				
acc	ggt	ggc	atc	att	gac	cct	gag	gag	agc	cac	cgc	ctg	cct	gtg	12609
Thr	Gly	Gly	Ile	Ile	Asp	Pro	Glu	Glu	Ser	His	Arg	Leu	Pro	Val	
4190						4195					4200				
gaa	gtg	gcc	tat	aag	cgt	ggt	ctc	ttt	gat	gag	gag	atg	aac	gag	12654
Glu	Val	Ala	Tyr	Lys	Arg	Gly	Leu	Phe	Asp	Glu	Glu	Met	Asn	Glu	
4205						4210					4215				
atc	ctg	act	gac	ccc	tca	gat	gac	acc	aag	ggc	ttc	ttc	gac	cca	12699
Ile	Leu	Thr	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	
4220						4225					4230				
aac	acc	gag	gag	aac	ctc	aca	tac	ctg	cag	ctg	atg	gag	cgc	tgt	12744
Asn	Thr	Glu	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Met	Glu	Arg	Cys	
4235						4240					4245				
atc	act	gac	ccc	cag	act	ggc	ctg	tgt	ctc	ctg	ccg	ctg	aag	gaa	12789
Ile	Thr	Asp	Pro	Gln	Thr	Gly	Leu	Cys	Leu	Leu	Pro	Leu	Lys	Glu	
4250						4255					4260				
aag	aag	cgg	gag	cgg	aag	acg	tcc	tcc	aag	tcc	tca	gtg	cgc	aag	12834
Lys	Lys	Arg	Glu	Arg	Lys	Thr	Ser	Ser	Lys	Ser	Ser	Val	Arg	Lys	
4265						4270					4275				
cgc	cgc	gtg	gtg	att	gtg	gac	cct	gag	acg	ggc	aag	gag	atg	tca	12879
Arg	Arg	Val	Val	Ile	Val	Asp	Pro	Glu	Thr	Gly	Lys	Glu	Met	Ser	
4280						4285					4290				
gtg	tat	gag	gcc	tac	cgc	aag	ggc	ctc	ata	gac	cac	cag	aca	tac	12924
Val	Tyr	Glu	Ala	Tyr	Arg	Lys	Gly	Leu	Ile	Asp	His	Gln	Thr	Tyr	
4295						4300					4305				
ctg	gag	ttg	tca	gag	cag	gag	tgc	gag	tgg	gaa	gaa	atc	acc	atc	12969
Leu	Glu	Leu	Ser	Glu	Gln	Glu	Cys	Glu	Trp	Glu	Glu	Ile	Thr	Ile	
4310						4315					4320				
tct	tcc	tcg	gac	ggc	gtc	gtc	aaa	tct	atg	atc	atc	gac	cgc	cgc	13014
Ser	Ser	Ser	Asp	Gly	Val	Val	Lys	Ser	Met	Ile	Ile	Asp	Arg	Arg	
4325						4330					4335				
tct	ggc	cgc	cag	tat	gac	att	ggt	gac	gcc	atc	acc	aag	aac	ctc	13059
Ser	Gly	Arg	Gln	Tyr	Asp	Ile	Gly	Asp	Ala	Ile	Thr	Lys	Asn	Leu	
4340						4345					4350				
att	gac	cgc	tca	gca	ctg	gac	cag	tac	cgc	gct	ggc	aca	ctt	tct	13104
Ile	Asp	Arg	Ser	Ala	Leu	Asp	Gln	Tyr	Arg	Ala	Gly	Thr	Leu	Ser	
4355						4360					4365				
atc	acc	gag	ttt	gcc	gac	atg	ctc	tca	ggc	aac	gct	ggg	ggc	ttc	13149
Ile	Thr	Glu	Phe	Ala	Asp	Met	Leu	Ser	Gly	Asn	Ala	Gly	Gly	Phe	
4370						4375					4380				
cgc	tcc	cgc	tcc	tcc	tct	gtg	ggc	tca	tct	tcc	tcc	tac	ccc	atc	13194
Arg	Ser	Arg	Ser	Ser	Ser	Val	Gly	Ser	Ser	Ser	Ser	Tyr	Pro	Ile	
4385						4390					4395				
agt	tct	gct	gtc	cct	agg	acc	cag	cta	gcc	tcc	tgg	tct	gat	cct	13239
Ser	Ser	Ala	Val	Pro	Arg	Thr	Gln	Leu	Ala	Ser	Trp	Ser	Asp	Pro	

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act	gag	gag	act	ggc	cca	gtg	gcc	ggc	atc	cta	gac	aca	gag	act			13284
Thr	Glu	Glu	Thr	Gly	Pro	Val	Ala	Gly	Ile	Leu	Asp	Thr	Glu	Thr			
	4415					4420					4425						
ctg	gag	aag	gtg	tcc	atc	aca	gag	gcc	atg	cac	cgc	aac	ctg	gta			13329
Leu	Glu	Lys	Val	Ser	Ile	Thr	Glu	Ala	Met	His	Arg	Asn	Leu	Val			
	4430					4435					4440						
gac	aac	atc	act	ggc	cag	cgg	ttg	ctg	gag	gca	cag	gcc	tgc	acc			13374
Asp	Asn	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr			
	4445					4450					4455						
ggg	ggc	atc	att	gac	ccc	agc	act	ggg	gag	cgc	ttc	ccg	gtc	act			13419
Gly	Gly	Ile	Ile	Asp	Pro	Ser	Thr	Gly	Glu	Arg	Phe	Pro	Val	Thr			
	4460					4465					4470						
gag	gct	gtc	aac	aag	ggc	ctg	gtg	gac	aag	atc	atg	gta	gac	cgt			13464
Glu	Ala	Val	Asn	Lys	Gly	Leu	Val	Asp	Lys	Ile	Met	Val	Asp	Arg			
	4475					4480					4485						
atc	aat	ctg	gcc	cag	aag	gcc	ttc	tgt	ggg	ttt	gag	gac	cca	cgc			13509
Ile	Asn	Leu	Ala	Gln	Lys	Ala	Phe	Cys	Gly	Phe	Glu	Asp	Pro	Arg			
	4490					4495					4500						
acc	aag	acc	aag	atg	tca	gct	gcc	cag	gcc	ctg	aag	aag	ggc	tgg			13554
Thr	Lys	Thr	Lys	Met	Ser	Ala	Ala	Gln	Ala	Leu	Lys	Lys	Gly	Trp			
	4505					4510					4515						
ctt	tac	tac	gag	gca	ggc	cag	cgt	ttc	ctc	gag	gtg	cag	tac	ctg			13599
Leu	Tyr	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Val	Gln	Tyr	Leu			
	4520					4525					4530						
acg	ggg	ggg	ctg	att	gag	cct	gac	aca	cct	ggc	cgt	gtg	tct	ctt			13644
Thr	Gly	Gly	Leu	Ile	Glu	Pro	Asp	Thr	Pro	Gly	Arg	Val	Ser	Leu			
	4535					4540					4545						
gat	gaa	gcc	ttg	caa	cgt	ggc	act	gtg	gat	gcc	cgc	aca	gcc	cag			13689
Asp	Glu	Ala	Leu	Gln	Arg	Gly	Thr	Val	Asp	Ala	Arg	Thr	Ala	Gln			
	4550					4555					4560						
aag	ctg	cgt	gat	gtc	agt	gcc	tac	tcc	aag	tac	ctc	acg	tgc	ccc			13734
Lys	Leu	Arg	Asp	Val	Ser	Ala	Tyr	Ser	Lys	Tyr	Leu	Thr	Cys	Pro			
	4565					4570					4575						
aag	acc	aag	ctc	aag	atc	tct	tac	aag	gac	gct	ctg	gat	cgg	agc			13779
Lys	Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Leu	Asp	Arg	Ser			
	4580					4585					4590						
atg	gtg	gag	gag	ggc	aca	ggg	ctg	agg	ctg	ctg	gaa	gcc	gcg	gca			13824
Met	Val	Glu	Glu	Gly	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala	Ala	Ala			
	4595					4600					4605						
cag	tcc	agc	aag	ggc	tac	tac	agc	ccg	tac	agt	gtc	agt	ggc	tct			13869
Gln	Ser	Ser	Lys	Gly	Tyr	Tyr	Ser	Pro	Tyr	Ser	Val	Ser	Gly	Ser			
	4610					4615					4620						
ggc	tct	act	gct	ggg	tca	cgc	act	ggg	tca	cgc	acc	ggc	tcc	agg			13914
Gly	Ser	Thr	Ala	Gly	Ser	Arg	Thr	Gly	Ser	Arg	Thr	Gly	Ser	Arg			
	4625					4630					4635						
gcc	ggc	tcc	cgt	cgt	ggc	agc	ttt	gat	gcc	act	ggc	tct	ggc	ttc			13959
Ala	Gly	Ser	Arg	Arg	Gly	Ser	Phe	Asp	Ala	Thr	Gly	Ser	Gly	Phe			
	4640					4645					4650						
tcc	atg	acc	ttt	tct	tct	tcc	tcc	tac	tct	tcc	tca	ggc	tat	ggc			14004
Ser	Met	Thr	Phe	Ser	Ser	Ser	Ser	Tyr	Ser	Ser	Ser	Gly	Tyr	Gly			
	4655					4660					4665						

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cgc cgc tat gcc tca ggg cct tca gcc tct ctt ggg ggc cct gag 14049
Arg Arg Tyr Ala Ser Gly Pro Ser Ala Ser Leu Gly Gly Pro Glu
4670 4675 4680

tct gca gtg gcc tgatcccca gcctgtatcc tgccttccc cttctgcatgt 14101
Ser Ala Val Ala

cgccaggctc cccgtggagg cgctgggggc ttttctttct tcttcttttt tttttttttt 14161

ttaacattta aaggtgtctt cctcccaagc ggtgcctaaa atctaacc aaagaccaga 14221

ataacacatt aatatatata tatatatgcg atgtccagac agcctgtgtc ttgggaaaca 14281

gggctggccc aggccagtg accactccac tctccttggg cctcccta atcttctacc 14341

tgccactcac cacagctagg tgccttggag aatccagagc tgggcactca gccactact 14401

cctgtctctc ctgggaggat tgccatctgg gaaaggcccc cagacctcta agccaacccc 14461

actggatgtc tacctgctgg tcctagctgc tgaggggaac tggggacggt cctgtgagca 14521

gacagctgtt gagtctcttg aggcctctgc cctgagccag ctgcttctcc ccagtgtata 14581

cctgaatatt cagtgggttt tgctggcaaa ggaaagatcc caggccaacc atctcttcca 14641

gcctgcccag agaagcccct tccccatggg aagataaggc ctggtcctgg ccccagcctc 14701

ccgcctggct cctgcagctg ccattggagc tgtgctttgt agctcactac ccataactta 14761

ttcccttgag acctgagcct ctgcttcagc cttccagcct caactcccct tgtaagtgcc 14821

ttctgtgtcc ttgtaccag gccctaaaga cccagaccca gggcaagaga tggacattct 14881

ggctgggcgg ggctggaggg ttctgcagat ctgagaattc cttctccaga ggcccaggg 14941

cttcaagcct gtggaacccc tctgggtgct gctgccacc ccactcccag ggagccctgg 15001

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gtggctccta cccctgcctc caccctctga gtgagctttg catgttccac taaccttgag 15121

ctggtgacag gtggagatgc caggcagaac actaacctga ccatgggcgg gggccctgcg 15181

gtgtccgccc ctcaataaaa gcaattccaa ccttaaaaaa aaaaaaaaaa 15231

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<210> 82  
 <211> 4687  
 <212> PRT  
 <213> Rattus norvegicus

<400> 82

Met Val Ala Gly Met Leu Met Pro Leu Asp Gln Leu Arg Ala Ile Tyr  
1 5 10 15

Glu Val Leu Phe Arg Glu Gly Val Met Val Ala Lys Lys Asp Arg Arg  
20 25 30

Pro Arg Ser Leu His Pro His Val Pro Gly Val Thr Asn Leu Gln Val  
35 40 45

Met Arg Ala Met Thr Ser Leu Lys Ala Arg Gly Leu Val Arg Glu Thr  
50 55 60

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Phe Ala Trp Cys His Phe Tyr Trp Tyr Leu Thr Asn Glu Gly Ile Asp  
 65 70 75 80  
 His Leu Arg Gln Tyr Leu His Leu Pro Pro Glu Ile Val Pro Ala Ser  
 85 90 95  
 Leu Gln Arg Val Arg Arg Pro Val Ala Met Val Met Pro Ala Arg Arg  
 100 105 110  
 Arg Ser Pro His Val Gln Thr Met Gln Gly Pro Leu Gly Cys Pro Pro  
 115 120 125  
 Lys Arg Gly Pro Leu Pro Ala Glu Asp Pro Ala Arg Glu Glu Arg Gln  
 130 135 140  
 Val Tyr Arg Arg Lys Glu Arg Glu Glu Gly Ala Pro Glu Thr Pro Val  
 145 150 155 160  
 Val Ser Ala Thr Ile Val Gly Thr Leu Ala Arg Pro Gly Pro Glu Pro  
 165 170 175  
 Thr Pro Ala Thr Asp Glu Arg Asp Arg Val Gln Lys Lys Thr Ser Thr  
 180 185 190  
 Lys Trp Val Asn Lys His Leu Ile Lys Ala Gln Arg His Ile Ser Asp  
 195 200 205  
 Leu Tyr Glu Asp Leu Arg Asp Gly His Asn Leu Ile Ser Leu Leu Glu  
 210 215 220  
 Val Leu Ser Gly Asp Ser Leu Pro Arg Glu Lys Gly Arg Met Arg Phe  
 225 230 235 240  
 His Lys Leu Gln Asn Val Gln Ile Ala Leu Asp Tyr Leu Arg His Arg  
 245 250 255  
 Gln Val Lys Leu Val Asn Ile Arg Asn Asp Asp Ile Ala Asp Gly Asn  
 260 265 270  
 Pro Lys Leu Thr Leu Gly Leu Ile Trp Thr Ile Ile Leu His Phe Lys  
 275 280 285  
 Ile Ser Asp Ile Gln Val Ser Gly Gln Ser Glu Asp Met Thr Ala Lys  
 290 295 300  
 Glu Lys Leu Leu Leu Trp Ser Gln Arg Met Val Glu Gly Tyr Gln Gly  
 305 310 315 320  
 Leu Arg Cys Asp Asn Phe Thr Thr Ser Trp Arg Asp Gly Arg Leu Phe  
 325 330 335

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Asn Ala Ile Ile His Arg His Lys Pro Met Leu Ile Asp Met Asn Lys  
 340 345 350  
 Val Tyr Arg Gln Thr Asn Leu Glu Asn Leu Asp Gln Ala Phe Ser Val  
 355 360 365  
 Ala Glu Arg Asp Leu Gly Val Thr Arg Leu Leu Asp Pro Glu Asp Val  
 370 375 380  
 Asp Val Pro Gln Pro Asp Glu Lys Ser Ile Ile Thr Tyr Val Ser Ser  
 385 390 395 400  
 Leu Tyr Asp Ala Met Pro Arg Val Pro Gly Ala Gln Asp Gly Val Arg  
 405 410 415  
 Ala Asn Glu Leu Gln Leu Arg Trp Gln Glu Tyr Arg Glu Leu Val Leu  
 420 425 430  
 Leu Leu Leu Gln Trp Ile Arg His His Thr Ala Ala Phe Glu Glu Arg  
 435 440 445  
 Lys Phe Pro Ser Ser Phe Glu Glu Ile Glu Ile Leu Trp Cys Gln Phe  
 450 455 460  
 Leu Lys Phe Lys Glu Thr Glu Leu Pro Ala Lys Glu Ala Asp Lys Asn  
 465 470 475 480  
 Arg Ser Lys Gly Ile Tyr Gln Ser Leu Glu Gly Ala Val Gln Ala Gly  
 485 490 495  
 Gln Leu Lys Ile Pro Pro Gly Tyr His Pro Leu Asp Val Glu Lys Glu  
 500 505 510  
 Trp Gly Lys Leu His Val Ala Ile Leu Glu Arg Glu Lys Gln Leu Arg  
 515 520 525  
 Ser Glu Phe Glu Arg Leu Glu Cys Leu Gln Arg Ile Val Ser Lys Leu  
 530 535 540  
 Gln Met Glu Ala Gly Leu Cys Glu Glu Gln Leu Tyr Gln Ala Asp Ser  
 545 550 555 560  
 Leu Leu Gln Ser Asp Ile Arg Leu Leu Ala Ser Gly Lys Ala Ala Gln  
 565 570 575  
 Arg Ala Gly Glu Val Glu Arg Asp Leu Asp Lys Ala Asp Gly Met Ile  
 580 585 590  
 Arg Leu Leu Phe Asn Asp Val Gln Thr Leu Lys Asp Gly Arg His Pro  
 595 600 605

Gln Gly Glu Gln Met Tyr Arg Arg Val Tyr Arg Leu His Glu Arg Leu  
610 615 620

Val Ala Ile Arg Thr Glu Tyr Asn Leu Arg Leu Lys Ala Gly Val Gly  
625 630 635 640

Ala Pro Val Thr Gln Val Thr Leu Gln Ser Thr Gln Arg Arg Pro Glu  
645 650 655

Leu Glu Asp Ser Thr Leu Arg Tyr Leu His Asp Leu Leu Ala Trp Val  
660 665 670

Glu Glu Asn Gln Arg Arg Ile Asp Gly Ala Glu Trp Gly Val Asp Leu  
675 680 685

Pro Ser Val Glu Ala Gln Leu Gly Ser His Arg Gly Met His Gln Ser  
690 695 700

Ile Glu Glu Phe Arg Ala Lys Ile Glu Arg Ala Arg Asn Asp Glu Ser  
705 710 715 720

Gln Leu Ser Pro Ala Thr Arg Gly Ala Tyr Arg Asp Cys Leu Gly Arg  
725 730 735

Leu Asp Leu Gln Tyr Ala Lys Leu Leu Asn Ser Ser Lys Ala Arg Leu  
740 745 750

Arg Ser Leu Glu Ser Leu His Gly Phe Val Ala Ala Ala Thr Lys Glu  
755 760 765

Leu Met Trp Leu Asn Glu Lys Glu Glu Glu Glu Val Gly Phe Asp Trp  
770 775 780

Ser Asp Arg Asn Thr Asn Met Ala Ala Lys Lys Glu Ser Tyr Ser Ala  
785 790 795 800

Leu Met Arg Glu Leu Glu Met Lys Glu Lys Lys Ile Lys Glu Ile Gln  
805 810 815

Asn Thr Gly Asp Arg Leu Leu Arg Glu Asp His Pro Ala Arg Pro Thr  
820 825 830

Val Glu Ser Phe Gln Ala Ala Leu Gln Thr Gln Trp Ser Trp Met Leu  
835 840 845

Gln Leu Cys Cys Cys Ile Glu Ala His Leu Lys Glu Asn Thr Ala Tyr  
850 855 860

Phe Gln Phe Phe Ser Asp Val Arg Glu Ala Glu Glu Gln Leu Gln Lys  
865 870 875 880

Leu Gln Glu Thr Leu Arg Arg Lys Tyr Ser Cys Asp Arg Ser Ile Thr  
Seite 434

Val Thr Arg Leu Glu Asp Leu Leu Gln Asp Ala Gln Asp Glu Lys Glu  
900 905 910

Gln Leu Asn Glu Tyr Lys Gly His Leu Ser Gly Leu Ala Lys Arg Ala  
915 920 925

Lys Ala Ile Val Gln Leu Lys Pro Arg Asn Pro Ala His Pro Val Arg  
930 935 940

Gly His Val Pro Leu Leu Ala Val Cys Asp Tyr Lys Gln Val Glu Val  
945 950 955 960

Thr Val His Lys Gly Asp Gln Cys Gln Leu Val Gly Pro Ala Gln Pro  
965 970 975

Phe His Trp Lys Val Leu Ser Ser Ser Gly Ser Glu Ala Ala Val Pro  
980 985 990

Ser Val Cys Phe Leu Val Pro Pro Pro Asn Gln Glu Ala Gln Glu Ala  
995 1000 1005

Val Ala Arg Leu Glu Ala Gln His Gln Ala Leu Val Thr Leu Trp  
1010 1015 1020

His Gln Leu His Val Asp Met Lys Ser Leu Leu Ala Trp Gln Ser  
1025 1030 1035

Leu Asn Arg Asp Ile Gln Leu Ile Arg Ser Trp Ser Leu Val Thr  
1040 1045 1050

Phe Arg Thr Leu Lys Pro Glu Glu Gln Arg Gln Ala Leu Arg Asn  
1055 1060 1065

Leu Glu Leu His Tyr Gln Ala Phe Leu Arg Asp Ser Gln Asp Ala  
1070 1075 1080

Gly Gly Phe Gly Pro Glu Asp Arg Leu Val Ala Glu Arg Glu Tyr  
1085 1090 1095

Gly Ser Cys Ser Arg His Tyr Gln Gln Leu Leu Gln Ser Leu Glu  
1100 1105 1110

Gln Gly Glu Gln Glu Glu Ser Arg Cys Gln Arg Cys Ile Ser Glu  
1115 1120 1125

Leu Lys Asp Ile Arg Leu Gln Leu Glu Ala Cys Glu Thr Arg Thr  
1130 1135 1140

Val His Arg Leu Arg Leu Pro Leu Asp Lys Asp Pro Ala Arg Glu  
1145 1150 1155

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Cys Ala Gln Arg Ile Ala Glu Gln Gln Lys Ala Gln Ala Glu Val  
 1160 1165 1170  
 Glu Gly Leu Gly Lys Gly Val Ala Arg Leu Ser Ala Glu Ala Glu  
 1175 1180 1185  
 Lys Val Leu Ala Leu Pro Glu Pro Ser Pro Ala Ala Pro Thr Leu  
 1190 1195 1200  
 Arg Ser Glu Leu Glu Leu Thr Leu Gly Lys Leu Glu Gln Val Arg  
 1205 1210 1215  
 Ser Leu Ser Ala Ile Tyr Leu Glu Lys Leu Lys Thr Ile Ser Leu  
 1220 1225 1230  
 Val Ile Arg Ser Thr Gln Gly Ala Glu Glu Val Leu Lys Thr His  
 1235 1240 1245  
 Glu Glu His Leu Lys Glu Ala Gln Ala Val Pro Ala Thr Leu Gln  
 1250 1255 1260  
 Glu Leu Glu Val Thr Lys Ala Ser Leu Lys Lys Leu Arg Ala Gln  
 1265 1270 1275  
 Ala Glu Ala Gln Gln Pro Val Phe Asn Thr Leu Arg Asp Glu Leu  
 1280 1285 1290  
 Arg Gly Ala Gln Glu Val Gly Glu Arg Leu Gln Gln Arg His Gly  
 1295 1300 1305  
 Glu Arg Asp Val Glu Val Glu Arg Trp Arg Glu Arg Val Thr Gln  
 1310 1315 1320  
 Leu Leu Glu Arg Trp Gln Ala Val Leu Ala Gln Thr Asp Val Arg  
 1325 1330 1335  
 Gln Arg Glu Leu Glu Gln Leu Gly Arg Gln Leu Arg Tyr Tyr Arg  
 1340 1345 1350  
 Glu Ser Ala Asp Pro Leu Ser Ser Trp Leu Gln Asp Ala Lys Ser  
 1355 1360 1365  
 Arg Gln Glu Gln Ile Gln Ala Val Pro Ile Ala Asn Ser Gln Ala  
 1370 1375 1380  
 Ala Arg Glu Gln Leu Arg Gln Glu Lys Ala Leu Leu Glu Glu Ile  
 1385 1390 1395  
 Glu Arg His Gly Glu Lys Val Glu Glu Cys Gln Lys Phe Ala Lys  
 1400 1405 1410



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Gln	Tyr	Ile	Asn	Ala	Ile	Lys	Asp	Tyr	Glu	Leu	Gln	Leu	Ile	Thr
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Tyr	Lys	Ala	Gln	Leu	Glu	Pro	Val	Ala	Ser	Pro	Ala	Lys	Lys	Pro
	1430					1435					1440			
Lys	Val	Gln	Ser	Gly	Ser	Glu	Ser	Val	Ile	Gln	Glu	Tyr	Val	Asp
	1445					1450					1455			
Leu	Arg	Thr	Arg	Tyr	Ser	Glu	Leu	Thr	Thr	Leu	Thr	Ser	Gln	Tyr
	1460					1465					1470			
Ile	Lys	Phe	Ile	Ser	Glu	Thr	Leu	Arg	Arg	Met	Glu	Glu	Glu	Glu
	1475					1480					1485			
Arg	Leu	Ala	Glu	Gln	Gln	Arg	Ala	Glu	Glu	Arg	Glu	Arg	Leu	Ala
	1490					1495					1500			
Glu	Val	Glu	Ala	Ala	Leu	Glu	Lys	Gln	Arg	Gln	Leu	Ala	Glu	Ala
	1505					1510					1515			
His	Ala	Gln	Ala	Lys	Ala	Gln	Ala	Glu	Leu	Glu	Ala	Arg	Glu	Leu
	1520					1525					1530			
Gln	Arg	Arg	Met	Gln	Glu	Glu	Val	Thr	Arg	Arg	Glu	Glu	Ala	Ala
	1535					1540					1545			
Val	Asp	Ala	Gln	Gln	Gln	Lys	Arg	Ser	Ile	Gln	Glu	Glu	Leu	Gln
	1550					1555					1560			
His	Leu	Arg	Gln	Ser	Ser	Glu	Ala	Glu	Ile	Gln	Ala	Lys	Ala	Gln
	1565					1570					1575			
Gln	Val	Glu	Ala	Ala	Glu	Arg	Ser	Arg	Met	Arg	Ile	Glu	Glu	Glu
	1580					1585					1590			
Ile	Arg	Val	Val	Arg	Leu	Gln	Leu	Glu	Thr	Thr	Glu	Arg	Gln	Arg
	1595					1600					1605			
Gly	Gly	Ala	Glu	Asp	Glu	Leu	Gln	Ala	Leu	Arg	Ala	Arg	Ala	Glu
	1610					1615					1620			
Glu	Ala	Glu	Ala	Gln	Lys	Arg	Gln	Ala	Gln	Glu	Glu	Ala	Glu	Arg
	1625					1630					1635			
Leu	Arg	Arg	Gln	Val	Gln	Asp	Glu	Ser	Gln	Arg	Lys	Arg	Gln	Ala
	1640					1645					1650			
Glu	Ala	Glu	Leu	Ala	Leu	Arg	Val	Lys	Ala	Glu	Ala	Glu	Ala	Ala
	1655					1660					1665			

Arg	Glu	Lys	Gln	Arg	Ala	Leu	Gln	Ala	Leu	Asp	Glu	Leu	Lys	Leu
	1670					1675					1680			
Gln	Ala	Glu	Glu	Ala	Glu	Arg	Trp	Leu	Cys	Gln	Ala	Glu	Ala	Glu
	1685					1690					1695			
Arg	Ala	Arg	Gln	Val	Gln	Val	Ala	Leu	Glu	Thr	Ala	Gln	Arg	Ser
	1700					1705					1710			
Ala	Glu	Val	Glu	Leu	Gln	Ser	Lys	Arg	Pro	Ser	Phe	Ala	Glu	Lys
	1715					1720					1725			
Thr	Ala	Gln	Leu	Glu	Arg	Thr	Leu	Gln	Glu	Glu	His	Val	Thr	Val
	1730					1735					1740			
Thr	Gln	Leu	Arg	Glu	Glu	Ala	Glu	Arg	Arg	Ala	Gln	Gln	Gln	Ala
	1745					1750					1755			
Glu	Ala	Glu	Arg	Ala	Arg	Glu	Glu	Ala	Glu	Arg	Glu	Leu	Glu	Arg
	1760					1765					1770			
Trp	Gln	Leu	Lys	Ala	Asn	Glu	Ala	Leu	Arg	Leu	Arg	Leu	Gln	Ala
	1775					1780					1785			
Glu	Glu	Val	Ala	Gln	Gln	Lys	Ser	Leu	Ala	Gln	Ala	Asp	Ala	Glu
	1790					1795					1800			
Lys	Gln	Lys	Glu	Glu	Ala	Glu	Arg	Glu	Ala	Arg	Arg	Arg	Gly	Lys
	1805					1810					1815			
Ala	Glu	Glu	Gln	Ala	Val	Arg	Gln	Arg	Glu	Leu	Ala	Glu	Gln	Glu
	1820					1825					1830			
Leu	Glu	Lys	Gln	Arg	Gln	Leu	Thr	Glu	Gly	Thr	Ala	Gln	Gln	Arg
	1835					1840					1845			
Leu	Ala	Ala	Glu	Gln	Glu	Leu	Ile	Arg	Leu	Arg	Ala	Glu	Thr	Glu
	1850					1855					1860			
Gln	Gly	Glu	His	Gln	Arg	Gln	Leu	Leu	Glu	Glu	Glu	Leu	Ala	Arg
	1865					1870					1875			
Leu	Gln	His	Glu	Ala	Thr	Ala	Ala	Thr	Gln	Lys	Arg	Gln	Glu	Leu
	1880					1885					1890			
Glu	Ala	Glu	Leu	Ala	Lys	Val	Arg	Ala	Glu	Met	Glu	Val	Leu	Leu
	1895					1900					1905			
Ala	Ser	Lys	Ala	Arg	Ala	Glu	Glu	Glu	Ser	Arg	Ser	Thr	Ser	Glu
	1910					1915					1920			
Lys	Ser	Lys	Gln	Arg	Leu	Glu	Ala	Glu	Ala	Gly	Arg	Phe	Arg	Glu



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His	Ala	Phe	Val	Val	Gln	Gln	Arg	Glu	Glu	Glu	Leu	Gln	Gln	Thr
	2195					2200					2205			
Leu	Gln	Gln	Glu	Gln	Asn	Met	Leu	Glu	Arg	Leu	Arg	Ser	Glu	Ala
	2210					2215					2220			
Glu	Ala	Ala	Arg	Arg	Ala	Ala	Glu	Glu	Ala	Glu	Glu	Ala	Arg	Glu
	2225					2230					2235			
Gln	Ala	Glu	Arg	Glu	Ala	Ala	Gln	Ser	Arg	Lys	Gln	Val	Glu	Glu
	2240					2245					2250			
Ala	Glu	Arg	Leu	Lys	Gln	Ser	Ala	Glu	Glu	Gln	Ala	Gln	Ala	Gln
	2255					2260					2265			
Ala	Gln	Ala	Gln	Ala	Ala	Ala	Glu	Lys	Leu	Arg	Lys	Glu	Ala	Glu
	2270					2275					2280			
Gln	Glu	Ala	Ala	Arg	Arg	Ala	Gln	Ala	Glu	Gln	Ala	Ala	Leu	Lys
	2285					2290					2295			
Gln	Lys	Gln	Ala	Ala	Asp	Ala	Glu	Met	Glu	Lys	His	Lys	Lys	Phe
	2300					2305					2310			
Ala	Glu	Gln	Thr	Leu	Arg	Gln	Lys	Ala	Gln	Val	Glu	Gln	Glu	Leu
	2315					2320					2325			
Thr	Thr	Leu	Arg	Leu	Gln	Leu	Glu	Glu	Thr	Asp	His	Gln	Lys	Ser
	2330					2335					2340			
Ile	Leu	Asp	Glu	Glu	Leu	Gln	Arg	Leu	Lys	Ala	Glu	Val	Thr	Glu
	2345					2350					2355			
Ala	Ala	Arg	Gln	Arg	Ser	Gln	Val	Glu	Glu	Glu	Leu	Phe	Ser	Val
	2360					2365					2370			
Arg	Val	Gln	Met	Glu	Glu	Leu	Gly	Lys	Leu	Lys	Ala	Arg	Ile	Glu
	2375					2380					2385			
Ala	Glu	Asn	Arg	Ala	Leu	Ile	Leu	Arg	Asp	Lys	Asp	Asn	Thr	Gln
	2390					2395					2400			
Arg	Phe	Leu	Glu	Glu	Glu	Ala	Glu	Lys	Met	Lys	Gln	Val	Ala	Glu
	2405					2410					2415			
Glu	Ala	Ala	Arg	Leu	Ser	Val	Ala	Ala	Gln	Glu	Ala	Ala	Arg	Leu
	2420					2425					2430			
Arg	Gln	Leu	Ala	Glu	Glu	Asp	Leu	Ala	Gln	Gln	Arg	Ala	Leu	Ala
	2435					2440					2445			

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Glu	Lys	Met	Leu	Lys	Glu	Lys	Met	Gln	Ala	Val	Gln	Glu	Ala	Thr
	2450					2455					2460			
Arg	Leu	Lys	Ala	Glu	Ala	Glu	Leu	Leu	Gln	Gln	Gln	Lys	Glu	Leu
	2465					2470					2475			
Ala	Gln	Glu	Gln	Ala	Arg	Arg	Leu	Gln	Ala	Asp	Lys	Glu	Gln	Met
	2480					2485					2490			
Ala	Gln	Gln	Leu	Val	Glu	Glu	Thr	Gln	Gly	Phe	Gln	Arg	Thr	Leu
	2495					2500					2505			
Glu	Ala	Glu	Arg	Gln	Arg	Gln	Leu	Glu	Met	Ser	Ala	Glu	Ala	Glu
	2510					2515					2520			
Arg	Leu	Lys	Leu	Arg	Met	Ala	Glu	Met	Ser	Arg	Ala	Gln	Ala	Arg
	2525					2530					2535			
Ala	Glu	Glu	Asp	Ala	Gln	Arg	Phe	Arg	Lys	Gln	Ala	Glu	Glu	Ile
	2540					2545					2550			
Gly	Glu	Lys	Leu	His	Arg	Thr	Glu	Leu	Ala	Thr	Gln	Glu	Lys	Val
	2555					2560					2565			
Thr	Leu	Val	Gln	Thr	Leu	Glu	Ile	Gln	Arg	Gln	Gln	Ser	Asp	Gln
	2570					2575					2580			
Asp	Ala	Glu	Arg	Leu	Arg	Glu	Ala	Ile	Ala	Glu	Leu	Glu	Arg	Glu
	2585					2590					2595			
Lys	Glu	Lys	Leu	Lys	Gln	Glu	Ala	Lys	Leu	Leu	Gln	Leu	Lys	Ser
	2600					2605					2610			
Glu	Glu	Met	Gln	Thr	Val	Gln	Gln	Glu	Gln	Ile	Leu	Gln	Glu	Thr
	2615					2620					2625			
Gln	Ala	Leu	Gln	Lys	Ser	Phe	Leu	Ser	Glu	Lys	Asp	Ser	Leu	Leu
	2630					2635					2640			
Gln	Arg	Glu	Arg	Phe	Ile	Glu	Gln	Glu	Lys	Ala	Lys	Leu	Glu	Gln
	2645					2650					2655			
Leu	Phe	Gln	Asp	Glu	Val	Ala	Lys	Ala	Lys	Gln	Leu	Gln	Glu	Glu
	2660					2665					2670			
Gln	Gln	Arg	Gln	Gln	Gln	Gln	Met	Glu	Gln	Glu	Lys	Gln	Glu	Leu
	2675					2680					2685			
Val	Ala	Ser	Met	Glu	Glu	Ala	Arg	Arg	Arg	Gln	Arg	Glu	Ala	Glu
	2690					2695					2700			

Glu Gly Val Arg Arg Lys Gln Glu Glu Leu Gln Arg Leu Glu Gln  
 2705 2710 2715  
  
 Gln Arg Gln Gln Gln Glu Lys Leu Leu Ala Glu Glu Asn Gln Arg  
 2720 2725 2730  
  
 Leu Arg Glu Arg Leu Gln Arg Leu Glu Glu Glu His Arg Ala Ala  
 2735 2740 2745  
  
 Leu Ala His Ser Glu Glu Ile Ala Thr Ser Gln Ala Ala Ala Thr  
 2750 2755 2760  
  
 Lys Ala Leu Pro Asn Gly Arg Asp Ala Leu Asp Gly Pro Ser Met  
 2765 2770 2775  
  
 Glu Ala Glu Pro Glu Tyr Thr Phe Glu Gly Leu Arg Gln Lys Val  
 2780 2785 2790  
  
 Pro Ala Gln Gln Leu Gln Glu Ala Gly Ile Leu Ser Met Glu Glu  
 2795 2800 2805  
  
 Leu Gln Arg Leu Thr Gln Gly His Thr Thr Val Ala Glu Leu Thr  
 2810 2815 2820  
  
 Gln Arg Glu Asp Val Arg His Tyr Leu Lys Gly Gly Ser Ser Ile  
 2825 2830 2835  
  
 Ala Gly Leu Leu Leu Lys Pro Thr Asn Glu Lys Leu Ser Val Tyr  
 2840 2845 2850  
  
 Thr Ala Leu Gln Arg Gln Leu Leu Ser Pro Gly Thr Ala Leu Ile  
 2855 2860 2865  
  
 Leu Leu Glu Ala Gln Ala Ala Ser Gly Phe Leu Leu Asp Pro Val  
 2870 2875 2880  
  
 Arg Asn Arg Arg Leu Thr Val Asn Glu Ala Val Lys Glu Gly Val  
 2885 2890 2895  
  
 Val Gly Pro Glu Leu His His Lys Leu Leu Ser Ala Glu Arg Ala  
 2900 2905 2910  
  
 Val Thr Gly Tyr Lys Asp Pro Tyr Thr Gly Glu Gln Ile Ser Leu  
 2915 2920 2925  
  
 Phe Gln Ala Met Lys Lys Asp Leu Ile Val Arg Asp His Gly Ile  
 2930 2935 2940  
  
 Arg Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro  
 2945 2950 2955  
  
 Val His Ser His Arg Val Pro Val Asp Val Ala Tyr Gln Arg Gly

2960

2965

2970

Tyr Phe Asp Glu Glu Met Asn Arg Val Leu Ala Asp Pro Ser Asp  
 2975 2980 2985

Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr His Glu Asn Leu Thr  
 2990 2995 3000

Tyr Leu Gln Leu Leu Glu Arg Cys Val Glu Asp Pro Glu Thr Gly  
 3005 3010 3015

Leu Arg Leu Leu Pro Leu Thr Asp Lys Ala Ala Lys Gly Gly Glu  
 3020 3025 3030

Leu Val Tyr Thr Asp Thr Glu Ala Arg Asp Val Phe Glu Lys Ala  
 3035 3040 3045

Thr Val Ser Ala Pro Phe Gly Lys Phe Gln Gly Lys Thr Val Thr  
 3050 3055 3060

Ile Trp Glu Ile Ile Asn Ser Glu Tyr Phe Thr Ala Glu Gln Arg  
 3065 3070 3075

Arg Asp Leu Leu Arg Gln Phe Arg Thr Gly Arg Ile Thr Val Glu  
 3080 3085 3090

Lys Ile Ile Lys Ile Val Ile Thr Val Val Glu Glu His Glu Arg  
 3095 3100 3105

Lys Gly Gln Leu Cys Phe Glu Gly Leu Arg Ala Leu Val Pro Ala  
 3110 3115 3120

Ala Glu Leu Leu Asp Ser Gly Val Ile Ser His Glu Val Tyr Gln  
 3125 3130 3135

Gln Leu Gln Arg Gly Glu Arg Ser Val Arg Glu Val Ala Glu Ala  
 3140 3145 3150

Asp Glu Val Arg Gln Ala Leu Arg Gly Thr Ser Val Ile Ala Gly  
 3155 3160 3165

Val Trp Leu Glu Glu Ala Gly Gln Lys Leu Ser Ile Tyr Glu Ala  
 3170 3175 3180

Leu Arg Arg Asp Leu Leu Gln Pro Glu Val Ala Val Ala Leu Leu  
 3185 3190 3195

Glu Ala Gln Ala Gly Thr Gly His Ile Ile Asp Pro Ala Thr Ser  
 3200 3205 3210

Ala Arg Leu Thr Val Asp Glu Ala Val Arg Ala Gly Leu Val Gly  
 3215 3220 3225

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Pro Glu Met His Glu Lys Leu Leu Ser Ala Glu Lys Ala Val Thr  
3230 3235 3240

Gly Tyr Arg Asp Pro Tyr Ser Gly Gln Ser Val Ser Leu Phe Gln  
3245 3250 3255

Ala Leu Lys Lys Gly Leu Ile Pro Arg Glu Gln Gly Leu Arg Leu  
3260 3265 3270

Leu Asp Ala Gln Leu Ser Thr Gly Gly Ile Val Asp Pro Ser Lys  
3275 3280 3285

Ser His Arg Val Pro Leu Asp Val Ala Tyr Ala Arg Gly Tyr Leu  
3290 3295 3300

Asp Lys Glu Thr Asn Arg Ala Leu Thr Ser Pro Arg Asp Asp Ala  
3305 3310 3315

Arg Val Tyr Leu Asp Pro Ser Thr Arg Glu Pro Val Thr Tyr Ser  
3320 3325 3330

Gln Leu Gln Gln Arg Cys Arg Ser Asp Gln Leu Thr Gly Leu Ser  
3335 3340 3345

Leu Leu Pro Leu Ser Glu Lys Ala Val Arg Ala Arg Gln Glu Glu  
3350 3355 3360

Val Tyr Ser Glu Leu Gln Ala Arg Glu Thr Leu Glu Lys Ala Lys  
3365 3370 3375

Val Glu Val Pro Val Gly Gly Phe Lys Gly Arg Ala Leu Thr Val  
3380 3385 3390

Trp Glu Leu Ile Ser Ser Glu Tyr Phe Thr Glu Glu Gln Arg Gln  
3395 3400 3405

Glu Leu Leu Arg Gln Phe Arg Thr Gly Lys Val Thr Val Glu Lys  
3410 3415 3420

Val Ile Lys Ile Leu Ile Thr Ile Val Glu Glu Val Glu Thr Gln  
3425 3430 3435

Arg Gln Glu Arg Leu Ser Phe Ser Gly Leu Arg Ala Pro Val Pro  
3440 3445 3450

Ala Ser Glu Leu Leu Ala Ser Lys Ile Leu Ser Arg Thr Gln Phe  
3455 3460 3465

Glu Gln Leu Lys Asp Gly Lys Thr Ser Val Lys Asp Leu Ser Glu  
3470 3475 3480



Val	Gly 3485	Ser	Val	Arg	Thr	Leu 3490	Leu	Gln	Gly	Ser	Gly 3495	Cys	Leu	Ala
Gly	Ile 3500	Tyr	Leu	Glu	Asp	Ser 3505	Lys	Glu	Lys	Val	Thr 3510	Ile	Tyr	Glu
Ala	Met 3515	Arg	Arg	Gly	Leu	Leu 3520	Arg	Ala	Ser	Thr	Ala 3525	Thr	Leu	Leu
Leu	Glu 3530	Ala	Gln	Ala	Ala	Thr 3535	Gly	Phe	Leu	Val	Asp 3540	Pro	Val	Arg
Asn	Gln 3545	Arg	Leu	Tyr	Val	His 3550	Glu	Ala	Val	Lys	Ala 3555	Gly	Val	Val
Gly	Pro 3560	Glu	Leu	His	Glu	Lys 3565	Leu	Leu	Ser	Ala	Glu 3570	Lys	Ala	Val
Thr	Gly 3575	Tyr	Lys	Asp	Pro	Tyr 3580	Ser	Gly	Ser	Thr	Ile 3585	Ser	Leu	Phe
Gln	Ala 3590	Met	Lys	Lys	Gly	Leu 3595	Val	Leu	Arg	Asp	His 3600	Ala	Ile	Arg
Leu	Leu 3605	Glu	Ala	Gln	Ile	Ala 3610	Thr	Gly	Gly	Ile	Ile 3615	Asp	Pro	Val
His	Ser 3620	His	Arg	Leu	Pro	Val 3625	Asp	Val	Ala	Tyr	Gln 3630	Arg	Gly	Tyr
Phe	Asp 3635	Glu	Glu	Met	Asn	Arg 3640	Val	Leu	Ala	Asp	Pro 3645	Ser	Asp	Asp
Thr	Lys 3650	Gly	Phe	Phe	Asp	Pro 3655	Asn	Thr	His	Glu	Asn 3660	Leu	Thr	Tyr
Leu	Gln 3665	Leu	Leu	Glu	Arg	Cys 3670	Val	Glu	Asp	Pro	Glu 3675	Thr	Gly	Leu
Arg	Leu 3680	Leu	Pro	Leu	Arg	Gly 3685	Ala	Glu	Lys	Thr	Glu 3690	Val	Val	Glu
Thr	Thr 3695	Gln	Val	Tyr	Thr	Glu 3700	Glu	Glu	Thr	Arg	Arg 3705	Ala	Phe	Glu
Glu	Thr 3710	Gln	Ile	Asp	Ile	Pro 3715	Gly	Gly	Gly	Ser	His 3720	Gly	Gly	Ser
Ser	Met 3725	Ser	Leu	Trp	Glu	Val 3730	Met	Gln	Ser	Asp	Met 3735	Ile	Pro	Glu

Asp Gln Arg Ala Arg Leu Met Ala Asp Phe Gln Ala Gly Arg Val  
 3740 3745 3750  
 Thr Lys Glu Arg Met Ile Ile Ile Ile Glu Ile Ile Glu Lys  
 3755 3760 3765  
 Thr Glu Ile Ile Arg Gln Gln Asn Leu Ala Ser Tyr Asp Tyr Val  
 3770 3775 3780  
 Arg Arg Arg Leu Thr Ala Glu Asp Leu Tyr Glu Ala Arg Ile Ile  
 3785 3790 3795  
 Ser Leu Glu Thr Tyr Asn Leu Phe Arg Glu Gly Thr Lys Ser Leu  
 3800 3805 3810  
 Arg Glu Val Leu Glu Met Glu Ser Ala Trp Arg Tyr Leu Tyr Gly  
 3815 3820 3825  
 Thr Gly Ser Val Ala Gly Val Tyr Leu Pro Gly Ser Arg Gln Thr  
 3830 3835 3840  
 Leu Thr Ile Tyr Gln Ala Leu Lys Lys Gly Leu Leu Ser Ala Glu  
 3845 3850 3855  
 Val Ala Arg Leu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Leu  
 3860 3865 3870  
 Leu Asp Pro Val Lys Gly Glu Arg Leu Thr Val Asp Glu Ala Val  
 3875 3880 3885  
 Arg Lys Gly Leu Val Gly Pro Glu Leu His Asp Arg Leu Leu Ser  
 3890 3895 3900  
 Ala Glu Arg Ala Val Thr Gly Tyr Arg Asp Pro Tyr Thr Glu Gln  
 3905 3910 3915  
 Pro Ile Ser Leu Phe Gln Ala Met Lys Lys Glu Leu Ile Pro Ala  
 3920 3925 3930  
 Glu Glu Ala Leu Arg Leu Leu Asp Ala Gln Leu Ala Thr Gly Gly  
 3935 3940 3945  
 Ile Val Asp Pro Arg Leu Gly Phe His Leu Pro Leu Glu Val Ala  
 3950 3955 3960  
 Tyr Gln Arg Gly Tyr Leu Asn Lys Asp Thr His Asp Gln Leu Ser  
 3965 3970 3975  
 Glu Pro Ser Glu Val Arg Ser Tyr Val Asp Pro Ser Thr Asp Glu  
 3980 3985 3990  
 Arg Leu Ser Tyr Thr Gln Leu Leu Lys Arg Cys Arg Arg Asp Asp  
 Seite 446

3995

4000

4005

Asn Ser Gly Gln Met Leu Leu Pro Leu Ser Asp Ala Arg Lys Leu  
4010 4015 4020

Thr Phe Arg Gly Leu Arg Lys Gln Ile Thr Val Glu Glu Leu Val  
4025 4030 4035

Arg Ser Gln Val Met Asp Glu Ala Thr Ala Leu Gln Leu Gln Glu  
4040 4045 4050

Gly Leu Thr Ser Ile Glu Glu Val Thr Lys Asn Leu Gln Lys Phe  
4055 4060 4065

Leu Glu Gly Thr Ser Cys Ile Ala Gly Val Phe Val Asp Ala Thr  
4070 4075 4080

Lys Glu Arg Leu Ser Val Tyr Gln Ala Met Lys Lys Gly Ile Ile  
4085 4090 4095

Arg Pro Gly Thr Ala Phe Glu Leu Leu Glu Ala Gln Ala Ala Thr  
4100 4105 4110

Gly Tyr Val Ile Asp Pro Ile Lys Gly Leu Lys Leu Thr Val Glu  
4115 4120 4125

Glu Ala Val Arg Met Gly Ile Val Gly Pro Glu Phe Lys Asp Lys  
4130 4135 4140

Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Lys Asp Pro Tyr  
4145 4150 4155

Ser Gly Lys Leu Ile Ser Leu Phe Gln Ala Met Lys Lys Gly Leu  
4160 4165 4170

Ile Leu Lys Asp His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala  
4175 4180 4185

Thr Gly Gly Ile Ile Asp Pro Glu Glu Ser His Arg Leu Pro Val  
4190 4195 4200

Glu Val Ala Tyr Lys Arg Gly Leu Phe Asp Glu Glu Met Asn Glu  
4205 4210 4215

Ile Leu Thr Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro  
4220 4225 4230

Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Met Glu Arg Cys  
4235 4240 4245

Ile Thr Asp Pro Gln Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
4250 4255 4260

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Lys	Lys	Arg	Glu	Arg	Lys	Thr	Ser	Ser	Lys	Ser	Ser	Val	Arg	Lys
	4265					4270					4275			
Arg	Arg	Val	Val	Ile	Val	Asp	Pro	Glu	Thr	Gly	Lys	Glu	Met	Ser
	4280					4285					4290			
Val	Tyr	Glu	Ala	Tyr	Arg	Lys	Gly	Leu	Ile	Asp	His	Gln	Thr	Tyr
	4295					4300					4305			
Leu	Glu	Leu	Ser	Glu	Gln	Glu	Cys	Glu	Trp	Glu	Glu	Ile	Thr	Ile
	4310					4315					4320			
Ser	Ser	Ser	Asp	Gly	Val	Val	Lys	Ser	Met	Ile	Ile	Asp	Arg	Arg
	4325					4330					4335			
Ser	Gly	Arg	Gln	Tyr	Asp	Ile	Gly	Asp	Ala	Ile	Thr	Lys	Asn	Leu
	4340					4345					4350			
Ile	Asp	Arg	Ser	Ala	Leu	Asp	Gln	Tyr	Arg	Ala	Gly	Thr	Leu	Ser
	4355					4360					4365			
Ile	Thr	Glu	Phe	Ala	Asp	Met	Leu	Ser	Gly	Asn	Ala	Gly	Gly	Phe
	4370					4375					4380			
Arg	Ser	Arg	Ser	Ser	Ser	Val	Gly	Ser	Ser	Ser	Ser	Tyr	Pro	Ile
	4385					4390					4395			
Ser	Ser	Ala	Val	Pro	Arg	Thr	Gln	Leu	Ala	Ser	Trp	Ser	Asp	Pro
	4400					4405					4410			
Thr	Glu	Glu	Thr	Gly	Pro	Val	Ala	Gly	Ile	Leu	Asp	Thr	Glu	Thr
	4415					4420					4425			
Leu	Glu	Lys	Val	Ser	Ile	Thr	Glu	Ala	Met	His	Arg	Asn	Leu	Val
	4430					4435					4440			
Asp	Asn	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr
	4445					4450					4455			
Gly	Gly	Ile	Ile	Asp	Pro	Ser	Thr	Gly	Glu	Arg	Phe	Pro	Val	Thr
	4460					4465					4470			
Glu	Ala	Val	Asn	Lys	Gly	Leu	Val	Asp	Lys	Ile	Met	Val	Asp	Arg
	4475					4480					4485			
Ile	Asn	Leu	Ala	Gln	Lys	Ala	Phe	Cys	Gly	Phe	Glu	Asp	Pro	Arg
	4490					4495					4500			
Thr	Lys	Thr	Lys	Met	Ser	Ala	Ala	Gln	Ala	Leu	Lys	Lys	Gly	Trp
	4505					4510					4515			

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Leu Tyr Tyr Glu Ala Gly Gln Arg Phe Leu Glu Val Gln Tyr Leu  
4520 4525 4530

Thr Gly Gly Leu Ile Glu Pro Asp Thr Pro Gly Arg Val Ser Leu  
4535 4540 4545

Asp Glu Ala Leu Gln Arg Gly Thr Val Asp Ala Arg Thr Ala Gln  
4550 4555 4560

Lys Leu Arg Asp Val Ser Ala Tyr Ser Lys Tyr Leu Thr Cys Pro  
4565 4570 4575

Lys Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Leu Asp Arg Ser  
4580 4585 4590

Met Val Glu Glu Gly Thr Gly Leu Arg Leu Leu Glu Ala Ala Ala  
4595 4600 4605

Gln Ser Ser Lys Gly Tyr Tyr Ser Pro Tyr Ser Val Ser Gly Ser  
4610 4615 4620

Gly Ser Thr Ala Gly Ser Arg Thr Gly Ser Arg Thr Gly Ser Arg  
4625 4630 4635

Ala Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr Gly Ser Gly Phe  
4640 4645 4650

Ser Met Thr Phe Ser Ser Ser Ser Tyr Ser Ser Ser Gly Tyr Gly  
4655 4660 4665

Arg Arg Tyr Ala Ser Gly Pro Ser Ala Ser Leu Gly Gly Pro Glu  
4670 4675 4680

Ser Ala Val Ala  
4685

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<212> DNA  
<213> Cricetulus griseus

<220>  
<221> CDS  
<222> (1)..(13350)

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Met Arg Phe His Lys Leu Gln Asn Val Gln Ile Ala Leu Asp Tyr Leu  
1 5 10 15

cga cat cgc cag gtg aag tta gtg aac atc aga aat gat gac att gct 96  
Arg His Arg Gln Val Lys Leu Val Asn Ile Arg Asn Asp Asp Ile Ala  
20 25 30

gat ggc aac ccc aag ctg acc ctt ggc ctg atc tgg acc atc atc ctc 144  
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Asp	Gly	Asn	Pro	Lys	Leu	Thr	Leu	Gly	Leu	Ile	Trp	Thr	Ile	Ile	Leu	
		35					40					45				
cac	ttc	cag	atc	tca	gac	att	cag	gtg	agc	ggg	cag	tgc	gag	gac	atg	192
His	Phe	Gln	Ile	Ser	Asp	Ile	Gln	Val	Ser	Gly	Gln	Ser	Glu	Asp	Met	
	50					55				60						
act	gca	aag	gaa	aag	ctg	ctg	ctc	tgg	tca	cag	cgt	atg	gta	gag	ggc	240
Thr	Ala	Lys	Glu	Lys	Leu	Leu	Leu	Trp	Ser	Gln	Arg	Met	Val	Glu	Gly	
65					70					75					80	
tac	caa	ggc	ctg	cgt	tgt	gac	aac	ttc	acc	acc	agt	tgg	cgt	gat	ggg	288
Tyr	Gln	Gly	Leu	Arg	Cys	Asp	Asn	Phe	Thr	Thr	Ser	Trp	Arg	Asp	Gly	
				85					90					95		
cgt	ctc	ttc	aat	gct	atc	atc	cac	cgg	cac	aag	ccc	atg	ctc	att	gac	336
Arg	Leu	Phe	Asn	Ala	Ile	Ile	His	Arg	His	Lys	Pro	Met	Leu	Ile	Asp	
			100					105					110			
atg	aac	aaa	gtg	tat	cgt	cag	acc	aac	ctg	gag	aac	ctc	gac	cag	gcc	384
Met	Asn	Lys	Val	Tyr	Arg	Gln	Thr	Asn	Leu	Glu	Asn	Leu	Asp	Gln	Ala	
		115					120					125				
ttc	tcc	gta	gca	gag	cgg	gac	ctg	gga	gtc	aca	agg	ctc	ctg	gac	cca	432
Phe	Ser	Val	Ala	Glu	Arg	Asp	Leu	Gly	Val	Thr	Arg	Leu	Leu	Asp	Pro	
	130					135					140					
gaa	gat	gtg	gat	gtc	cct	cag	ccc	gat	gag	aag	tct	atc	atc	acc	tat	480
Glu	Asp	Val	Asp	Val	Pro	Gln	Pro	Asp	Glu	Lys	Ser	Ile	Ile	Thr	Tyr	
145					150					155					160	
gtt	tca	tcc	ctg	tat	gac	gcc	atg	ccc	cgt	gtg	ccc	ggc	gca	cag	aat	528
Val	Ser	Ser	Leu	Tyr	Asp	Ala	Met	Pro	Arg	Val	Pro	Gly	Ala	Gln	Asn	
				165					170					175		
ggg	gtg	agg	gcc	aat	gag	ctg	cag	ctc	cgc	tgg	cag	gag	tac	cgg	gag	576
Gly	Val	Arg	Ala	Asn	Glu	Leu	Gln	Leu	Arg	Trp	Gln	Glu	Tyr	Arg	Glu	
			180					185					190			
ctt	gtg	ttg	ctg	ctt	ctg	cag	tgg	atc	cgg	cac	cat	aca	gct	gcc	ttt	624
Leu	Val	Leu	Leu	Leu	Leu	Gln	Trp	Ile	Arg	His	His	Thr	Ala	Ala	Phe	
		195					200					205				
gag	gag	cgc	aag	ttc	ccc	tcc	agc	ttt	gaa	gag	att	gag	atc	ctg	tgg	672
Glu	Glu	Arg	Lys	Phe	Pro	Ser	Ser	Phe	Glu	Glu	Ile	Glu	Ile	Leu	Trp	
	210					215					220					
tgc	cag	ttt	ttg	aag	ttc	aag	gag	aca	gag	ctc	ccg	gcc	aag	gag	gca	720
Cys	Gln	Phe	Leu	Lys	Phe	Lys	Glu	Thr	Glu	Leu	Pro	Ala	Lys	Glu	Ala	
225					230					235					240	
gac	aag	agc	cgg	tcc	aaa	ggc	atc	tac	cag	tct	ttg	gag	ggg	gca	gta	768
Asp	Lys	Ser	Arg	Ser	Lys	Gly	Ile	Tyr	Gln	Ser	Leu	Glu	Gly	Ala	Val	
				245					250					255		
caa	gca	ggc	cag	ctc	cag	atc	cct	cct	ggc	ttc	cac	ccg	ctg	gac	gtg	816
Gln	Ala	Gly	Gln	Leu	Gln	Ile	Pro	Pro	Gly	Phe	His	Pro	Leu	Asp	Val	
			260					265					270			
gaa	aag	gaa	tgg	ggc	aag	ctg	cac	gtg	gcc	atc	ctg	gag	cgg	gag	aag	864
Glu	Lys	Glu	Trp	Gly	Lys	Leu	His	Val	Ala	Ile	Leu	Glu	Arg	Glu	Lys	
		275					280					285				
cag	ctc	cgg	ggc	gag	ttt	gag	agg	ctg	gag	tgt	ctt	cag	aga	atc	gtc	912
Gln	Leu	Arg	Gly	Glu	Phe	Glu	Arg	Leu	Glu	Cys	Leu	Gln	Arg	Ile	Val	
	290					295					300					
agc	aaa	ctg	cag	atg	gag	gct	ggg	ctg	tgt	gag	gaa	cag	ctg	aac	cag	960
Ser	Lys	Leu	Gln	Met	Glu	Ala	Gly	Leu	Cys	Glu	Glu	Gln	Leu	Asn	Gln	

305		310		315		320										
gcc	gac	tcc	ctg	ctg	cag	tcg	gat	att	cgg	ctg	ctg	gcc	tca	ggc	aag	1008
Ala	Asp	Ser	Leu	Leu	Gln	Ser	Asp	Ile	Arg	Leu	Leu	Ala	Ser	Gly	Lys	
				325				330						335		
gtg	gct	cag	cgg	gct	ggg	gaa	gtg	gag	cga	gac	ctg	gac	aag	gct	gat	1056
Val	Ala	Gln	Arg	Ala	Gly	Glu	Val	Glu	Arg	Asp	Leu	Asp	Lys	Ala	Asp	
			340					345					350			
ggc	atg	atc	cgg	ctg	tgt	ttc	aac	gat	gtg	cag	acc	ctt	aaa	gat	ggg	1104
Gly	Met	Ile	Arg	Leu	Leu	Phe	Asn	Asp	Val	Gln	Thr	Leu	Lys	Asp	Gly	
		355					360					365				
cgg	cac	cca	cag	ggt	gaa	cag	atg	tac	cgg	agg	gtg	tat	cgt	ctg	cat	1152
Arg	His	Pro	Gln	Gly	Glu	Gln	Met	Tyr	Arg	Arg	Val	Tyr	Arg	Leu	His	
	370					375					380					
gag	cgc	ctg	gta	gcc	atc	cgc	act	gag	tac	aac	ctc	cgg	ctg	aag	gca	1200
Glu	Arg	Leu	Val	Ala	Ile	Arg	Thr	Glu	Tyr	Asn	Leu	Arg	Leu	Lys	Ala	
385					390			395							400	
gga	gtg	gct	gcc	cct	gtg	acc	cag	gtg	acc	gtg	cag	agt	aca	cag	agg	1248
Gly	Val	Ala	Ala	Pro	Val	Thr	Gln	Val	Thr	Val	Gln	Ser	Thr	Gln	Arg	
				405				410						415		
cgc	cca	gag	ctg	gag	gac	tct	aca	ctc	cgc	tac	ctg	caa	gac	ctg	ctg	1296
Arg	Pro	Glu	Leu	Glu	Asp	Ser	Thr	Leu	Arg	Tyr	Leu	Gln	Asp	Leu	Leu	
			420					425					430			
gcg	tgg	gtg	gag	gag	aac	cag	cgt	cgg	ata	gac	agt	gct	gag	tgg	ggt	1344
Ala	Trp	Val	Glu	Glu	Asn	Gln	Arg	Arg	Ile	Asp	Ser	Ala	Glu	Trp	Gly	
		435					440					445				
gtg	gac	tgt	ccc	agc	gtg	gag	gcg	cag	ctg	ggc	agc	cac	cgg	ggc	atg	1392
Val	Asp	Leu	Pro	Ser	Val	Glu	Ala	Gln	Leu	Gly	Ser	His	Arg	Gly	Met	
	450					455					460					
cat	cag	tct	att	gag	gag	ttt	cgg	gcc	aag	atc	gag	cgg	gct	cgg	aac	1440
His	Gln	Ser	Ile	Glu	Glu	Phe	Arg	Ala	Lys	Ile	Glu	Arg	Ala	Arg	Asn	
465					470			475							480	
gat	gag	agc	cag	ctc	tcc	cca	gcc	acc	cgg	ggt	gcc	tac	cga	gag	tgc	1488
Asp	Glu	Ser	Gln	Leu	Ser	Pro	Ala	Thr	Arg	Gly	Ala	Tyr	Arg	Glu	Cys	
				485				490						495		
ctg	ggc	cgc	cta	gac	ctg	cag	tat	gca	aag	ctg	ctg	aac	tcc	tcc	aag	1536
Leu	Gly	Arg	Leu	Asp	Leu	Gln	Tyr	Ala	Lys	Leu	Leu	Asn	Ser	Ser	Lys	
			500					505					510			
gcc	cgc	ctc	cgg	tcc	ctg	gag	agc	ttg	cac	ggg	ttt	gtg	gcg	gct	gcc	1584
Ala	Arg	Leu	Arg	Ser	Leu	Glu	Ser	Leu	His	Gly	Phe	Val	Ala	Ala	Ala	
		515					520					525				
acc	aag	gag	tgt	atg	tgg	ctg	aat	gag	aag	gaa	gaa	gag	gaa	gtg	ggc	1632
Thr	Lys	Glu	Leu	Met	Trp	Leu	Asn	Glu	Lys	Glu	Glu	Glu	Glu	Val	Gly	
	530					535				540						
ttt	gat	tgg	agt	gac	cga	aac	acc	aac	atg	gct	gcc	aag	aag	gag	agc	1680
Phe	Asp	Trp	Ser	Asp	Arg	Asn	Thr	Asn	Met	Ala	Ala	Lys	Lys	Glu	Ser	
545					550			555							560	
tac	tcg	gcc	ctg	atg	cgt	gag	ctg	gag	atg	aag	gaa	aag	aaa	atc	aag	1728
Tyr	Ser	Ala	Leu	Met	Arg	Glu	Leu	Glu	Met	Lys	Glu	Lys	Lys	Ile	Lys	
				565				570						575		
gag	acc	cag	aac	act	gga	gac	cgg	ctg	ctg	cgg	gag	gac	cac	cac	gcg	1776
Glu	Thr	Gln	Asn	Thr	Gly	Asp	Arg	Leu	Leu	Arg	Glu	Asp	His	His	Ala	
			580					585					590			

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cgg	ccc	aca	gtg	gag	tcc	ttc	cag	gcc	gcc	ctg	cag	acc	cag	tgg	agc	1824
Arg	Pro	Thr	Val	Glu	Ser	Phe	Gln	Ala	Ala	Leu	Gln	Thr	Gln	Trp	Ser	
		595					600					605				
tgg	atg	ctg	cag	ctg	tgc	tgc	tgc	att	gag	gca	cac	ttg	aaa	gag	aac	1872
Trp	Met	Leu	Gln	Leu	Cys	Cys	Cys	Ile	Glu	Ala	His	Leu	Lys	Glu	Asn	
	610					615					620					
acc	gcc	tac	ttc	cag	ttc	ttc	tca	gac	ggt	cgg	gag	gcg	gag	gaa	cag	1920
Thr	Ala	Tyr	Phe	Gln	Phe	Phe	Ser	Asp	Val	Arg	Glu	Ala	Glu	Glu	Gln	
	625				630					635					640	
ctg	cag	aag	ctt	cag	gag	acc	atg	cgc	agg	gag	tac	agc	tgc	gac	cgc	1968
Leu	Gln	Lys	Leu	Gln	Glu	Thr	Met	Arg	Arg	Glu	Tyr	Ser	Cys	Asp	Arg	
				645					650					655		
tcc	atc	acc	gtc	acc	agg	ctg	gag	gac	ctg	ctg	cag	gac	gcc	cag	gac	2016
Ser	Ile	Thr	Val	Thr	Arg	Leu	Glu	Asp	Leu	Leu	Gln	Asp	Ala	Gln	Asp	
			660					665					670			
gag	agg	gag	cag	ctg	aat	gag	tac	aag	ggg	cac	ctc	tca	ggc	ctg	gcc	2064
Glu	Arg	Glu	Gln	Leu	Asn	Glu	Tyr	Lys	Gly	His	Leu	Ser	Gly	Leu	Ala	
		675					680					685				
aag	cgg	gcc	aag	gcc	att	gtg	cag	ttg	aag	cca	cgc	aac	cct	gcc	cac	2112
Lys	Arg	Ala	Lys	Ala	Ile	Val	Gln	Leu	Lys	Pro	Arg	Asn	Pro	Ala	His	
	690					695					700					
cct	gtg	cgg	ggc	cat	gtg	ccc	ctg	atg	gcg	gtg	tgt	gat	tat	aag	cag	2160
Pro	Val	Arg	Gly	His	Val	Pro	Leu	Met	Ala	Val	Cys	Asp	Tyr	Lys	Gln	
					710					715					720	
gtg	gag	gtg	act	gtg	cac	aag	ggt	gac	cag	tgc	cag	ctc	gtg	ggc	cct	2208
Val	Glu	Val	Thr	Val	His	Lys	Gly	Asp	Gln	Cys	Gln	Leu	Val	Gly	Pro	
				725					730					735		
gcc	cag	ccg	tcc	cac	tgg	aag	gtg	ctc	cgc	gga	ccc	agc	agt	gag	gcg	2256
Ala	Gln	Pro	Ser	His	Trp	Lys	Val	Leu	Arg	Gly	Pro	Ser	Ser	Glu	Ala	
			740					745					750			
gcc	gtg	ccc	tgc	gtg	tgc	ttt	ctt	gtg	ccg	ccg	ccc	aac	cag	gag	gcc	2304
Ala	Val	Pro	Ser	Val	Cys	Phe	Leu	Val	Pro	Pro	Pro	Asn	Gln	Glu	Ala	
		755					760					765				
cag	gaa	gct	gtc	gct	agg	ctg	gag	gcc	cag	cat	cag	gcc	ctg	gtc	aca	2352
Gln	Glu	Ala	Val	Ala	Arg	Leu	Glu	Ala	Gln	His	Gln	Ala	Leu	Val	Thr	
	770					775					780					
ctg	tgg	cac	cag	ctg	cat	gtg	gac	atg	aag	agc	ctt	ctg	gca	tgg	cag	2400
Leu	Trp	His	Gln	Leu	His	Val	Asp	Met	Lys	Ser	Leu	Leu	Ala	Trp	Gln	
	785				790					795					800	
aat	ctc	agt	cgt	gac	ata	cag	ctc	atc	cgg	tcc	tgg	tcc	ctg	gtc	acg	2448
Asn	Leu	Ser	Arg	Asp	Ile	Gln	Leu	Ile	Arg	Ser	Trp	Ser	Leu	Val	Thr	
				805					810					815		
ttc	cgc	acg	ctg	aag	cca	gag	gag	cag	cgc	cag	gcc	ctg	cgc	aac	ctg	2496
Phe	Arg	Thr	Leu	Lys	Pro	Glu	Glu	Gln	Arg	Gln	Ala	Leu	Arg	Asn	Leu	
			820					825					830			
gag	ctg	cac	tac	cag	gcc	ttc	ctt	cga	gac	agc	cag	gac	gct	ggc	ggc	2544
Glu	Leu	His	Tyr	Gln	Ala	Phe	Leu	Arg	Asp	Ser	Gln	Asp	Ala	Gly	Gly	
		835					840					845				
ttc	ggg	ccc	gag	gac	cgg	ctg	gtg	gca	gag	cgg	gag	tac	gga	tct	tgc	2592
Phe	Gly	Pro	Glu	Asp	Arg	Leu	Val	Ala	Glu	Arg	Glu	Tyr	Gly	Ser	Cys	
	850					855					860					



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agc	cgc	cac	tac	cag	cag	tta	cta	caa	agc	ctg	gag	cag	ggc	gag	caa	2640
Ser	Arg	His	Tyr	Gln	Gln	Leu	Leu	Gln	Ser	Leu	Glu	Gln	Gly	Glu	Gln	
865					870					875					880	
gag	gag	tct	cgt	tgt	cag	cga	tgc	atc	tgc	gag	ctc	aag	gat	att	cgg	2688
Glu	Glu	Ser	Arg	Cys	Gln	Arg	Cys	Ile	Ser	Glu	Leu	Lys	Asp	Ile	Arg	
				885					890					895		
ctg	caa	ctg	gag	gcc	tgt	gag	acc	cgg	acc	gtg	cac	cgt	ctg	cgg	ctg	2736
Leu	Gln	Leu	Glu	Ala	Cys	Glu	Thr	Arg	Thr	Val	His	Arg	Leu	Arg	Leu	
			900					905					910			
cct	ctg	gac	aaa	gag	cct	gca	cgg	gag	tgt	gcc	caa	cgc	atc	gct	gag	2784
Pro	Leu	Asp	Lys	Glu	Pro	Ala	Arg	Glu	Cys	Ala	Gln	Arg	Ile	Ala	Glu	
		915					920					925				
cag	cag	aaa	gcg	caa	gct	gag	gtg	gaa	ggg	ctg	ggc	aag	gga	gtc	gcc	2832
Gln	Gln	Lys	Ala	Gln	Ala	Glu	Val	Glu	Gly	Leu	Gly	Lys	Gly	Val	Ala	
	930				935					940						
cgc	ctc	tct	gct	gag	gcg	gag	aaa	gtt	cta	gcg	ctg	ccg	gaa	cca	tca	2880
Arg	Leu	Ser	Ala	Glu	Ala	Glu	Lys	Val	Leu	Ala	Leu	Pro	Glu	Pro	Ser	
945				950					955						960	
ccc	gct	gct	ccc	acc	ctg	cgc	tca	gag	ctg	gaa	ctg	acc	ctg	ggc	aag	2928
Pro	Ala	Ala	Pro	Thr	Leu	Arg	Ser	Glu	Leu	Glu	Leu	Thr	Leu	Gly	Lys	
				965					970					975		
ctg	gag	cag	gtc	cga	agc	ttg	tct	gcc	atc	tac	ttg	gag	aaa	ctc	aag	2976
Leu	Glu	Gln	Val	Arg	Ser	Leu	Ser	Ala	Ile	Tyr	Leu	Glu	Lys	Leu	Lys	
			980					985					990			
acc	atc	agc	ttg	gta	att	cgc	agt	acc	cag	ggg	gcg	gag	gag	gtg	ctc	3024
Thr	Ile	Ser	Leu	Val	Ile	Arg	Ser	Thr	Gln	Gly	Ala	Glu	Glu	Val	Leu	
		995					1000					1005				
aaa	gcc	cac	gag	gag	cag	ctc	aag	gag	gcg	cag	gct	gtg	cct	gcc		3069
Lys	Ala	His	Glu	Glu	Gln	Leu	Lys	Glu	Ala	Gln	Ala	Val	Pro	Ala		
	1010					1015					1020					
acg	ctc	caa	gag	ctt	gaa	gcc	acc	aag	gcc	tca	cta	aag	aaa	ctg		3114
Thr	Leu	Gln	Glu	Leu	Glu	Ala	Thr	Lys	Ala	Ser	Leu	Lys	Lys	Leu		
	1025					1030					1035					
cgg	gcc	cag	gca	gaa	gca	cag	cag	cct	gta	ttc	gac	acc	cta	agg		3159
Arg	Ala	Gln	Ala	Glu	Ala	Gln	Gln	Pro	Val	Phe	Asp	Thr	Leu	Arg		
	1040					1045					1050					
gat	gag	ctg	cgg	ggg	gca	cag	gaa	gtt	ggc	gag	cgg	ctg	cag	cag		3204
Asp	Glu	Leu	Arg	Gly	Ala	Gln	Glu	Val	Gly	Glu	Arg	Leu	Gln	Gln		
	1055					1060					1065					
cgg	cac	gga	gag	cgg	gac	gtg	gaa	gtg	gag	cgc	tgg	cga	gag	cgt		3249
Arg	His	Gly	Glu	Arg	Asp	Val	Glu	Val	Glu	Arg	Trp	Arg	Glu	Arg		
	1070					1075					1080					
gtc	aat	cag	ctg	ctg	gag	cgc	tgg	cag	gcc	gtg	ctt	gcc	cag	att		3294
Val	Asn	Gln	Leu	Leu	Glu	Arg	Trp	Gln	Ala	Val	Leu	Ala	Gln	Ile		
	1085					1090					1095					
gac	gtg	cgg	cag	cgt	gag	cta	gaa	cag	ctg	ggg	cgc	cag	ctt	cgc		3339
Asp	Val	Arg	Gln	Arg	Glu	Leu	Glu	Gln	Leu	Gly	Arg	Gln	Leu	Arg		
	1100					1105					1110					
tac	tac	cgc	gag	agc	gct	gac	cca	ctg	agc	tcc	tgg	ctg	cag	gat		3384
Tyr	Tyr	Arg	Glu	Ser	Ala	Asp	Pro	Leu	Ser	Ser	Trp	Leu	Gln	Asp		
	1115					1120					1125					
gcc	aag	agg	cgg	caa	gag	cag	atc	cag	gct	gtg	cca	ata	ccc	aac		3429

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Ala	Lys	Arg	Arg	Gln	Glu	Gln	Ile	Gln	Ala	Val	Pro	Ile	Pro	Asn	
	1130					1135					1140				
agc	cag	gct	gca	cgg	gag	caa	ctg	cgc	cag	gag	aag	gcc	ctg	ctg	3474
Ser	Gln	Ala	Ala	Arg	Glu	Gln	Leu	Arg	Gln	Glu	Lys	Ala	Leu	Leu	
	1145					1150					1155				
gaa	gag	att	gag	cgt	cac	ggt	gag	aag	gtg	gag	gag	tgc	cag	aag	3519
Glu	Glu	Ile	Glu	Arg	His	Gly	Glu	Lys	Val	Glu	Glu	Cys	Gln	Lys	
	1160					1165					1170				
ttc	gcc	aag	cag	tac	atc	aac	gcc	atc	aag	gac	tat	gag	ctc	cag	3564
Phe	Ala	Lys	Gln	Tyr	Ile	Asn	Ala	Ile	Lys	Asp	Tyr	Glu	Leu	Gln	
	1175					1180					1185				
ctg	gtc	acc	tac	aag	gca	cag	ctt	gaa	ccc	gtg	gcc	tcc	cca	gcc	3609
Leu	Val	Thr	Tyr	Lys	Ala	Gln	Leu	Glu	Pro	Val	Ala	Ser	Pro	Ala	
	1190					1195					1200				
aag	aag	ccc	aag	gtt	cag	tct	gga	tgc	gag	agt	gtc	atc	caa	gag	3654
Lys	Lys	Pro	Lys	Val	Gln	Ser	Gly	Ser	Glu	Ser	Val	Ile	Gln	Glu	
	1205					1210					1215				
tat	gtg	gat	ctg	cgg	aca	cgc	tac	agt	gag	ctg	acc	aca	ctc	aca	3699
Tyr	Val	Asp	Leu	Arg	Thr	Arg	Tyr	Ser	Glu	Leu	Thr	Thr	Leu	Thr	
	1220					1225					1230				
agt	cag	tac	atc	aag	ttc	atc	agc	gag	acc	ctg	cgc	cgc	atg	gaa	3744
Ser	Gln	Tyr	Ile	Lys	Phe	Ile	Ser	Glu	Thr	Leu	Arg	Arg	Met	Glu	
	1235					1240					1245				
gag	gaa	gag	agg	ctg	gct	gag	caa	cag	cgg	gca	gag	gag	cgt	gag	3789
Glu	Glu	Glu	Arg	Leu	Ala	Glu	Gln	Gln	Arg	Ala	Glu	Glu	Arg	Glu	
	1250					1255					1260				
cga	ctg	gct	gag	gga	gag	gct	gcg	ctg	gag	aag	cag	cgg	cag	cta	3834
Arg	Leu	Ala	Glu	Gly	Glu	Ala	Ala	Leu	Glu	Lys	Gln	Arg	Gln	Leu	
	1265					1270					1275				
gct	gag	gcc	cac	gcc	cag	gct	aag	gcc	cag	gca	gag	ctg	gag	gcg	3879
Ala	Glu	Ala	His	Ala	Gln	Ala	Lys	Ala	Gln	Ala	Glu	Leu	Glu	Ala	
	1280					1285					1290				
cag	gag	ctg	cag	cgg	cgc	atg	cag	gag	gag	gtg	gca	cgg	cgt	gag	3924
Gln	Glu	Leu	Gln	Arg	Arg	Met	Gln	Glu	Glu	Val	Ala	Arg	Arg	Glu	
	1295					1300					1305				
gag	gcg	gcg	gtg	aac	gcg	cag	cag	cag	aag	cgc	agc	atc	caa	gag	3969
Glu	Ala	Ala	Val	Asn	Ala	Gln	Gln	Gln	Lys	Arg	Ser	Ile	Gln	Glu	
	1310					1315					1320				
gag	ctg	cag	cac	ctg	cgg	cag	agc	tca	gag	gca	gag	atc	cag	gcc	4014
Glu	Leu	Gln	His	Leu	Arg	Gln	Ser	Ser	Glu	Ala	Glu	Ile	Gln	Ala	
	1325					1330					1335				
aag	gcc	cag	cag	gtg	gag	gct	gca	gag	cgc	agc	cgg	atg	cgc	att	4059
Lys	Ala	Gln	Gln	Val	Glu	Ala	Ala	Glu	Arg	Ser	Arg	Met	Arg	Ile	
	1340					1345					1350				
gag	gaa	gag	atc	cga	gtg	gtg	cgt	ctg	cag	ctg	gag	aca	acc	gag	4104
Glu	Glu	Glu	Ile	Arg	Val	Val	Arg	Leu	Gln	Leu	Glu	Thr	Thr	Glu	
	1355					1360					1365				
cgt	cag	cgt	gga	ggg	gca	gag	ggt	gag	ctg	cag	gcg	ctg	cgt	gca	4149
Arg	Gln	Arg	Gly	Gly	Ala	Glu	Gly	Glu	Leu	Gln	Ala	Leu	Arg	Ala	
	1370					1375					1380				
cgg	gcc	gag	gag	gcc	gaa	gcc	cag	aag	cgg	cag	gct	cag	gag	gaa	4194
Arg	Ala	Glu	Glu	Ala	Glu	Ala	Gln	Lys	Arg	Gln	Ala	Gln	Glu	Glu	

1385						1390						1395						
gag Glu 1400	cgc Arg	ctg Leu	cga Arg	aga Arg	cag Gln 1405	gtg Val	cag Gln	gat Asp	gag Glu	agc Ser 1410	cag Gln	cgc Arg	aag Lys	4239				
cag Gln 1415	gcc Ala	gag Glu	gca Ala	gag Glu	ctg Leu 1420	gcc Ala	ctg Leu	cgc Arg	gtg Val	aag Lys 1425	gcc Ala	cag Gln	gcc Ala	4284				
gca Ala 1430	gct Ala	caa Gln	gag Glu	aag Lys	cag Gln 1435	cgg Arg	gcc Ala	ctg Leu	cag Gln	gcc Ala 1440	ctg Leu	gag Glu	gaa Glu	4329				
cgg Arg 1445	ctg Leu	cag Gln	gcc Ala	gag Glu	gag Glu 1450	gct Ala	gaa Glu	cgg Arg	cgg Arg	ctg Leu 1455	cgc Arg	cag Gln	gcc Ala	4374				
gcg Ala 1460	gag Glu	aga Arg	gcg Ala	cgc Arg	caa Gln 1465	gtg Val	cag Gln	gta Val	gct Ala	ctg Leu 1470	gag Glu	acg Thr	gcg Ala	4419				
cgc Arg 1475	agt Ser	gcg Ala	gag Glu	gtg Val	gag Glu 1480	ctg Leu	cag Gln	agc Ser	aag Lys	cgt Arg 1485	gcg Ala	tcc Ser	ttt Phe	4464				
gag Glu 1490	aag Lys	aca Thr	gcg Ala	cag Gln	ctg Leu 1495	gag Glu	cgc Arg	acg Thr	ctg Leu	cag Gln 1500	gaa Glu	gag Glu	cac His	4509				
aca Thr 1505	gtg Val	acc Thr	cag Gln	ctg Leu	cgc Arg 1510	gag Glu	aag Lys	gcc Ala	gag Glu	cgt Arg 1515	cgg Arg	gcc Ala	cag Gln	4554				
caa Gln 1520	gcg Ala	gag Glu	gct Ala	gag Glu	cga Arg 1525	gcc Ala	cgc Arg	gag Glu	gag Glu	gct Ala 1530	gag Glu	cgg Arg	gag Glu	4599				
gag Glu 1535	cgc Arg	tgg Trp	cag Gln	cta Leu	aag Lys 1540	gcc Ala	aac Asn	gaa Glu	gcg Ala	ctt Leu 1545	agg Arg	ctg Leu	cgg Arg	4644				
caa Gln 1550	gca Ala	gaa Glu	gag Glu	gtg Val	gcc Ala 1555	cag Gln	cag Gln	agg Arg	agt Ser	ctg Leu 1560	gcg Ala	cag Gln	gcc Ala	4689				
gca Ala 1565	gag Glu	aag Lys	cag Gln	aag Lys	gag Glu 1570	gag Glu	gcc Ala	gag Glu	cgt Arg	gag Glu 1575	gcc Ala	cgg Arg	cgg Arg	4734				
ggc Gly 1580	aag Lys	gcc Ala	gag Glu	gaa Glu	cag Gln 1585	gcc Ala	gtg Val	cgg Arg	cag Gln	cga Arg 1590	gag Glu	ctg Leu	gcc Ala	4779				
cag Gln 1595	gag Glu	ctg Leu	gag Glu	aag Lys	cag Gln 1600	cgg Arg	cag Gln	ctg Leu	gcg Ala	gag Glu 1605	ggc Gly	acc Thr	gcg Ala	4824				
cag Gln 1610	cgc Arg	ctg Leu	gct Ala	gcg Ala	gag Glu 1615	cag Gln	gag Glu	ctc Leu	atc Ile	cgc Arg 1620	ctg Leu	cgg Arg	gcc Ala	4869				
acg Thr 1625	gag Glu	cag Gln	ggt Gly	gag Glu	cag Gln 1630	cag Gln	cgg Arg	cag Gln	ctg Leu	ctg Leu 1635	gag Glu	gag Glu	gag Glu	4914				
gcc Ala 1640	cgg Arg	ctg Leu	cag Gln	cgg Arg	gaa Glu 1645	gcg Ala	acc Thr	gca Ala	gcc Ala	acg Thr 1650	cac His	aag Lys	cgc Arg	4959				

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cag Gln	gag Glu 1655	ctg Leu	gag Glu	gcc Ala	gag Glu	ctg Leu 1660	gcc Ala	aaa Lys	gtg Val	cgg Arg	gcc Ala 1665	gag Glu	atg Met	gag Glu	5004
gtg Val	ctg Leu 1670	ctg Leu	gcc Ala	agc Ser	aag Lys	gcg Ala 1675	cga Arg	gcc Ala	gag Glu	gaa Glu	gag Glu 1680	tcc Ser	cgt Arg	tct Ser	5049
acc Thr	agc Ser 1685	gag Glu	aag Lys	tcc Ser	aag Lys	cag Gln 1690	agg Arg	cta Leu	gag Glu	gcc Ala	gag Glu 1695	gcc Ala	gac Asp	cgc Arg	5094
ttt Phe	cga Arg 1700	gag Glu	ctg Leu	gcc Ala	gag Glu	gag Glu 1705	gct Ala	gcg Ala	cgt Arg	ctg Leu	cgc Arg 1710	gcc Ala	ctg Leu	gcg Ala	5139
gag Glu	gag Glu 1715	gcc Ala	aag Lys	cgg Arg	cag Gln	cgg Arg 1720	cag Gln	ctg Leu	gct Ala	gag Glu	gag Glu 1725	gac Asp	gca Ala	gcg Ala	5184
cgc Arg	cag Gln 1730	cgg Arg	gcc Ala	gag Glu	gca Ala	gag Glu 1735	cga Arg	gtg Val	ctt Leu	acg Thr	gag Glu 1740	aag Lys	ctg Leu	gcc Ala	5229
gcc Ala	atc Ile 1745	agt Ser	gag Glu	gcc Ala	acg Thr	agg Arg 1750	ctc Leu	aag Lys	acg Thr	gag Glu	gca Ala 1755	gag Glu	att Ile	gcc Ala	5274
ctc Leu	aaa Lys 1760	gag Glu	aag Lys	gag Glu	gcc Ala	gag Glu 1765	aat Asn	gag Glu	cgc Arg	ctc Leu	cgg Arg 1770	cgc Arg	ctg Leu	gct Ala	5319
gaa Glu	gac Asp 1775	gag Glu	gcc Ala	ttc Phe	cag Gln	cgg Arg 1780	cgg Arg	cgg Arg	ctg Leu	gag Glu	gag Glu 1785	cag Gln	gcg Ala	gcc Ala	5364
ctg Leu	cac His 1790	aag Lys	gcc Ala	gac Asp	ata Ile	gag Glu 1795	gag Glu	cgc Arg	ttg Leu	gcc Ala	cag Gln 1800	ctg Leu	cgc Arg	aag Lys	5409
gcg Ala	tcg Ser 1805	gag Glu	agt Ser	gag Glu	ctg Leu	gag Glu 1810	cgc Arg	cag Gln	aag Lys	ggc Gly	ttg Leu 1815	gtg Val	gag Glu	gat Asp	5454
acg Thr	ctg Leu 1820	cgg Arg	cag Gln	cgg Arg	cgg Arg	cag Gln 1825	gtg Val	gag Glu	gag Glu	gag Glu	atc Ile 1830	ctg Leu	gcg Ala	ctg Leu	5499
aag Lys	gtg Val 1835	agc Ser	ttt Phe	gag Glu	aaa Lys	gcc Ala 1840	gcc Ala	gcc Ala	ggc Gly	aag Lys	gcg Ala 1845	gag Glu	ctg Leu	gag Glu	5544
ctg Leu	gag Glu 1850	ctg Leu	ggg Gly	cgc Arg	atc Ile	cgc Arg 1855	agc Ser	agt Ser	gcc Ala	gag Glu	gac Asp 1860	aca Thr	atg Met	cgc Arg	5589
agc Ser	aag Lys 1865	gag Glu	cag Gln	gcg Ala	gag Glu	cag Gln 1870	gag Glu	gcg Ala	gcg Ala	cgg Arg	cag Gln 1875	cgg Arg	cag Gln	ctg Leu	5634
gca Ala	gcc Ala 1880	gag Glu	gag Glu	gag Glu	cag Gln	cgg Arg 1885	cgt Arg	cgg Arg	gag Glu	gcc Ala	gag Glu 1890	gag Glu	cgc Arg	gtg Val	5679
cag Gln	aag Lys 1895	agc Ser	ctg Leu	gcc Ala	gct Ala	gag Glu 1900	gag Glu	gaa Glu	gcc Ala	gcg Ala	cgg Arg 1905	cag Gln	cgg Arg	aag Lys	5724

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gct Ala	gca Ala 1910	ctg Leu	gag Glu	gaa Glu	gtc Val	gag Glu 1915	cgg Arg	ctc Leu	aag Lys	gcc Ala	aag Lys 1920	gtg Val	gag Glu	gaa Glu	5769
gcg Ala	cgg Arg 1925	cgc Arg	ctg Leu	cga Arg	gaa Glu	cga Arg 1930	gca Ala	gag Glu	cag Gln	gag Glu	tcc Ser 1935	gcc Ala	agg Arg	cag Gln	5814
ctg Leu	cag Gln 1940	ctg Leu	gcc Ala	cag Gln	gag Glu	gct Ala 1945	gcc Ala	cag Gln	aag Lys	cga Arg	ctg Leu 1950	cag Gln	gca Ala	gag Glu	5859
gag Glu	aag Lys 1955	gcg Ala	cat His	gcc Ala	ttt Phe	gtg Val 1960	gtg Val	cag Gln	cag Gln	cgg Arg	gaa Glu 1965	gag Glu	gag Glu	ctg Leu	5904
cag Gln	cag Gln 1970	act Thr	ctg Leu	cag Gln	cag Gln	gag Glu 1975	cag Gln	agc Ser	atg Met	ctg Leu	gag Glu 1980	cgg Arg	ctg Leu	cgg Arg	5949
ggt Gly	gag Glu 1985	gca Ala	gag Glu	gcg Ala	gcg Ala	cgg Arg 1990	cga Arg	gct Ala	gcc Ala	gag Glu	gag Glu 1995	gcc Ala	gag Glu	gag Glu	5994
gcc Ala	cgg Arg 2000	gag Glu	cag Gln	gcc Ala	gaa Glu	cgg Arg 2005	gag Glu	gcg Ala	gct Ala	cag Gln	tct Ser 2010	cgg Arg	aaa Lys	caa Gln	6039
gtg Val	gaa Glu 2015	gag Glu	gcg Ala	gag Glu	cgg Arg	ctg Leu 2020	aaa Lys	cag Gln	tcg Ser	gcg Ala	gag Glu 2025	gag Glu	cag Gln	gcc Ala	6084
cag Gln	gcc Ala 2030	cgg Arg	gcc Ala	cag Gln	gcc Ala	cag Gln 2035	gcc Ala	gct Ala	gca Ala	gag Glu	aag Lys 2040	ctg Leu	cgt Arg	aag Lys	6129
gaa Glu	gct Ala 2045	gag Glu	cag Gln	gag Glu	gca Ala	gcg Ala 2050	cgt Arg	cgg Arg	gca Ala	cag Gln	gcg Ala 2055	gag Glu	cag Gln	gca Ala	6174
gcg Ala	ttg Leu 2060	aag Lys	cag Gln	aag Lys	caa Gln	gca Ala 2065	gcc Ala	gac Asp	gcg Ala	gag Glu	atg Met 2070	gag Glu	aag Lys	cac His	6219
aag Lys	aag Lys 2075	ttt Phe	gca Ala	gag Glu	cag Gln	acg Thr 2080	ctg Leu	cgg Arg	cag Gln	aag Lys	gcc Ala 2085	cag Gln	gtg Val	gag Glu	6264
cag Gln	gag Glu 2090	ctg Leu	acg Thr	acg Thr	ctg Leu	agg Arg 2095	ctg Leu	cag Gln	ctg Leu	gag Glu	gag Glu 2100	act Thr	gac Asp	cac His	6309
cag Gln	aag Lys 2105	agc Ser	atc Ile	ctg Leu	gac Asp	gag Glu 2110	gag Glu	ctg Leu	cag Gln	cgg Arg	ctg Leu 2115	aag Lys	gcc Ala	gag Glu	6354
gtg Val	acc Thr 2120	gag Glu	gct Ala	gcc Ala	cgg Arg	cag Gln 2125	cgt Arg	agc Ser	cag Gln	gta Val	gag Glu 2130	gag Glu	gag Glu	ctc Leu	6399
ttc Phe	tct Ser 2135	gtt Val	cgc Arg	gtg Val	cag Gln	atg Met 2140	gag Glu	gag Glu	ctg Leu	ggc Gly	aag Lys 2145	ctc Leu	aag Lys	gcc Ala	6444
cgc Arg	att Ile 2150	gaa Glu	gcc Ala	gaa Glu	aac Asn	cgg Arg 2155	gca Ala	ctc Leu	atc Ile	ctg Leu	cgt Arg 2160	gac Asp	aag Lys	gac Asp	6489
aac	acc	cag	cgc	ttc	ctg	gag	gag	gag	gct	gag	aag	atg	aaa	cag	6534

Asn	Thr	Gln	Arg	Phe	Leu	Glu	Glu	Glu	Ala	Glu	Lys	Met	Lys	Gln	
2165						2170					2175				
gtg	gcg	gag	gag	gct	gcg	cgg	ctg	agt	gtg	gct	gcc	cag	gag	gcg	6579
Val	Ala	Glu	Glu	Ala	Ala	Arg	Leu	Ser	Val	Ala	Ala	Gln	Glu	Ala	
2180						2185					2190				
gcc	cgg	ctg	cgg	cag	ctg	gcc	gag	gaa	gac	ctg	gcg	cag	cag	cgg	6624
Ala	Arg	Leu	Arg	Gln	Leu	Ala	Glu	Glu	Asp	Leu	Ala	Gln	Gln	Arg	
2195						2200					2205				
gcc	ctg	gca	gag	aag	atg	ctt	aag	gag	aag	atg	cag	gcg	gtg	cag	6669
Ala	Leu	Ala	Glu	Lys	Met	Leu	Lys	Glu	Lys	Met	Gln	Ala	Val	Gln	
2210						2215					2220				
gaa	gcc	acc	agg	ctc	aag	gcc	gag	gcc	gag	ctg	ctc	cag	cag	cag	6714
Glu	Ala	Thr	Arg	Leu	Lys	Ala	Glu	Ala	Glu	Leu	Leu	Gln	Gln	Gln	
2225						2230					2235				
aag	gag	ctt	gct	cag	gag	cag	gcc	cgg	cgg	ctg	cag	gaa	gac	aag	6759
Lys	Glu	Leu	Ala	Gln	Glu	Gln	Ala	Arg	Arg	Leu	Gln	Glu	Asp	Lys	
2240						2245					2250				
gag	cag	atg	gcc	cag	cag	ttg	gta	gag	gag	acg	cag	ggg	ttc	cag	6804
Glu	Gln	Met	Ala	Gln	Gln	Leu	Val	Glu	Glu	Thr	Gln	Gly	Phe	Gln	
2255						2260					2265				
cgg	acg	ctg	gag	gta	gag	cgg	cag	cgg	cag	ctg	gaa	atg	agc	gcg	6849
Arg	Thr	Leu	Glu	Val	Glu	Arg	Gln	Arg	Gln	Leu	Glu	Met	Ser	Ala	
2270						2275					2280				
gag	gcc	gag	cgc	ctc	aag	ctg	cgc	atg	gct	gag	atg	agc	cgg	gcg	6894
Glu	Ala	Glu	Arg	Leu	Lys	Leu	Arg	Met	Ala	Glu	Met	Ser	Arg	Ala	
2285						2290					2295				
cag	gcc	cgt	gcg	gag	gag	gat	gcc	cag	cgc	ttc	cgg	aag	cag	gct	6939
Gln	Ala	Arg	Ala	Glu	Glu	Asp	Ala	Gln	Arg	Phe	Arg	Lys	Gln	Ala	
2300						2305					2310				
gag	gag	att	ggc	gaa	aag	ctg	cac	cgc	act	gaa	ctt	gct	acg	cag	6984
Glu	Glu	Ile	Gly	Glu	Lys	Leu	His	Arg	Thr	Glu	Leu	Ala	Thr	Gln	
2315						2320					2325				
gag	aaa	gtg	aca	ttg	gtg	cag	acg	ctg	gag	atc	cag	cga	caa	cag	7029
Glu	Lys	Val	Thr	Leu	Val	Gln	Thr	Leu	Glu	Ile	Gln	Arg	Gln	Gln	
2330						2335					2340				
agc	gat	cac	gat	gcc	gag	cgt	ctg	agg	gag	gcc	att	gct	gag	ctg	7074
Ser	Asp	His	Asp	Ala	Glu	Arg	Leu	Arg	Glu	Ala	Ile	Ala	Glu	Leu	
2345						2350					2355				
gag	cgg	gag	aag	gag	aag	ctc	aag	caa	gag	gcc	aaa	ttg	ctg	cag	7119
Glu	Arg	Glu	Lys	Glu	Lys	Leu	Lys	Gln	Glu	Ala	Lys	Leu	Leu	Gln	
2360						2365					2370				
ctg	aag	tct	gag	gag	atg	cag	act	gtg	cag	cag	gag	cag	atc	ctg	7164
Leu	Lys	Ser	Glu	Glu	Met	Gln	Thr	Val	Gln	Gln	Glu	Gln	Ile	Leu	
2375						2380					2385				
cag	gag	acg	cag	gcg	ctg	cag	aag	agc	ttc	ctg	tct	gag	aag	gat	7209
Gln	Glu	Thr	Gln	Ala	Leu	Gln	Lys	Ser	Phe	Leu	Ser	Glu	Lys	Asp	
2390						2395					2400				
agc	ctg	ctg	cag	cgg	gaa	cgc	ttc	atc	gag	cag	gag	aag	gcc	aag	7254
Ser	Leu	Leu	Gln	Arg	Glu	Arg	Phe	Ile	Glu	Gln	Glu	Lys	Ala	Lys	
2405						2410					2415				
ctg	gaa	cag	ctt	ttc	cag	gac	gaa	gtg	gca	aaa	gcg	cag	cag	ctc	7299
Leu	Glu	Gln	Leu	Phe	Gln	Asp	Glu	Val	Ala	Lys	Ala	Gln	Gln	Leu	

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2420	2425	2430		
cgg gag gag cag cag cgg cag cag cgg cag atg gag cag gag aaa Arg Glu Glu Gln Gln Arg Gln Gln Arg Gln Met Glu Gln Glu Lys	2435	2440	2445	7344
cag gag ctg gtg gcc agc atg gag gag gcc agg agg cgg cag tgc Gln Glu Leu Val Ala Ser Met Glu Glu Ala Arg Arg Arg Gln Cys	2450	2455	2460	7389
gag gcc gag gag gcc gtg cgg cgc aag cag gag gag ctg cag cat Glu Ala Glu Glu Ala Val Arg Arg Lys Gln Glu Glu Leu Gln His	2465	2470	2475	7434
ctg gag ctg cag cgg cag cag cag gag aag ctg ctg gcc gag gag Leu Glu Leu Gln Arg Gln Gln Glu Lys Leu Leu Ala Glu Glu	2480	2485	2490	7479
aac cag agg ctg cga gag cgg ctg cag cgc ctg gag gag cac Asn Gln Arg Leu Arg Glu Arg Leu Gln Arg Leu Glu Glu Glu His	2495	2500	2505	7524
cgg gcc gcc ctg gct cac tct gag gag att gca gct act cag gct Arg Ala Ala Leu Ala His Ser Glu Glu Ile Ala Ala Thr Gln Ala	2510	2515	2520	7569
gcc gcc gcc aaa gcc ctg ccc aat ggc cgc gac gcc ctg gat ggc Ala Ala Ala Lys Ala Leu Pro Asn Gly Arg Asp Ala Leu Asp Gly	2525	2530	2535	7614
ccg tcc atg gag gtg gag cct gag cac gcc ttc gag gga ctg cgt Pro Ser Met Glu Val Glu Pro Glu His Ala Phe Glu Gly Leu Arg	2540	2545	2550	7659
cag aag gtg ccg gct ctg cag cta cgg gaa gcg gcc att ctg agc Gln Lys Val Pro Ala Leu Gln Leu Arg Glu Ala Gly Ile Leu Ser	2555	2560	2565	7704
gcg gag gaa ctg cag cgg ctg gaa cag ggc cac acc aca gtg gct Ala Glu Glu Leu Gln Arg Leu Glu Gln Gly His Thr Thr Val Ala	2570	2575	2580	7749
gag ctc tcg cag agg gaa gat gtg cgc cag tac ctg cag ggc cgc Glu Leu Ser Gln Arg Glu Asp Val Arg Gln Tyr Leu Gln Gly Arg	2585	2590	2595	7794
agc agc att gcg ggg ctg ctg cta aag ccc acc gat gag aaa ctg Ser Ser Ile Ala Gly Leu Leu Leu Lys Pro Thr Asp Glu Lys Leu	2600	2605	2610	7839
agt gtc tac aca gcc ctg cag agg cag ctg ctt agc ccc gga aca Ser Val Tyr Thr Ala Leu Gln Arg Gln Leu Leu Ser Pro Gly Thr	2615	2620	2625	7884
gct ctt atc ctt ctt gag gcc cag cag gcg gcc tca gcc ttc ctg ctg Ala Leu Ile Leu Leu Glu Ala Gln Ala Ala Ser Gly Phe Leu Leu	2630	2635	2640	7929
gac cct gtg cgg aac cgg cgg ctg act gtc aac gag ccc gtg aag Asp Pro Val Arg Asn Arg Arg Leu Thr Val Asn Glu Pro Val Lys	2645	2650	2655	7974
gag ggc gtc gtg ggt cct gag ctg cac cac aag ctc ctg tca gcc Glu Gly Val Val Gly Pro Glu Leu His His Lys Leu Leu Ser Ala	2660	2665	2670	8019
gag cgc gct gtc act ggc tac aag gac ccc tac acg ggg gag cag Glu Arg Ala Val Thr Gly Tyr Lys Asp Pro Tyr Thr Gly Glu Gln	2675	2680	2685	8064

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atc Ile	tcc Ser 2690	ctc Leu	ttc Phe	cag Gln	gcc Ala	atg Met 2695	aag Lys	aag Lys	gac Asp	ctc Leu	ctc Leu 2700	gtc Val	agg Arg	gac Asp	8109
cac His	gcc Ala 2705	atc Ile	cgg Arg	ctg Leu	ctg Leu	gag Glu 2710	gcc Ala	cag Gln	atc Ile	gcc Ala	acg Thr 2715	ggg Gly	ggc Gly	atc Ile	8154
atc Ile	gac Asp 2720	acc Thr	gtg Val	cac His	agc Ser	cac His 2725	cgc Arg	gtg Val	ccc Pro	gtg Val	gac Asp 2730	gtg Val	gcc Ala	tac Tyr	8199
cag Gln	cgc Arg 2735	ggc Gly	tac Tyr	ttc Phe	gac Asp	gag Glu 2740	gag Glu	atg Met	agc Ser	cgc Arg	atc Ile 2745	ctg Leu	gct Ala	gac Asp	8244
cct Pro	ggg Gly 2750	gac Asp	gac Asp	acc Thr	aag Lys	ggc Gly 2755	ttc Phe	ttc Phe	gac Asp	ccc Pro	aac Asn 2760	acg Thr	cat His	gag Glu	8289
aac Asn	ctc Leu 2765	acc Thr	tac Tyr	ctg Leu	cag Gln	ctg Leu 2770	ctg Leu	gag Glu	cgc Arg	tgc Cys	gtg Val 2775	gag Glu	gac Asp	ccc Pro	8334
gag Glu	acg Thr 2780	ggc Gly	ctg Leu	cac His	ctc Leu	ctg Leu 2785	ccg Pro	ctc Leu	aca Thr	gat Asp	aag Lys 2790	gcc Ala	gcc Ala	aag Lys	8379
ggt Gly	ggt Gly 2795	gag Glu	ctg Leu	gtg Val	tac Tyr	acg Thr 2800	gat Asp	aca Thr	gag Glu	gcc Ala	cgt Arg 2805	gac Asp	gtc Val	ttt Phe	8424
gag Glu	aag Lys 2810	gcc Ala	act Thr	gtg Val	tct Ser	gca Ala 2815	ccg Pro	ttt Phe	ggc Gly	aag Lys	ttc Phe 2820	cag Gln	ggc Gly	aag Lys	8469
acc Thr	gtg Val 2825	acc Thr	atc Ile	tgg Trp	gag Glu	atc Ile 2830	atc Ile	aac Asn	tca Ser	gag Glu	tac Tyr 2835	ttc Phe	aca Thr	gcg Ala	8514
gag Glu	cag Gln 2840	cgg Arg	cgg Arg	gat Asp	ctg Leu	ctg Leu 2845	cgg Arg	cag Gln	ttc Phe	cgc Arg	acg Thr 2850	ggc Gly	cgc Arg	atc Ile	8559
acg Thr	gtg Val 2855	gag Glu	aag Lys	atc Ile	atc Ile	aag Lys 2860	att Ile	gtc Val	atc Ile	acg Thr	gtg Val 2865	gtg Val	gag Glu	gag Glu	8604
cag Gln	gag Glu 2870	cgg Arg	aag Lys	ggc Gly	cag Gln	ctc Leu 2875	tgc Cys	ttc Phe	gag Glu	ggc Gly	ctc Leu 2880	cga Arg	gcc Ala	ctc Leu	8649
gtg Val	cct Pro 2885	gct Ala	gcg Ala	gag Glu	ctc Leu	ctg Leu 2890	gag Glu	agc Ser	ggg Gly	gtc Val	att Ile 2895	agc Ser	cac His	gaa Glu	8694
ctc Leu	tac Tyr 2900	cag Gln	cag Gln	ctg Leu	caa Gln	agg Arg 2905	ggg Gly	gag Glu	cgt Arg	tct Ser	gtg Val 2910	cgg Arg	gag Glu	gtg Val	8739
gcc Ala	gag Glu 2915	gca Ala	gac Asp	agc Ser	gtg Val	aga Arg 2920	cgg Arg	gcc Ala	ctg Leu	cgg Arg	ggt Gly 2925	gcc Ala	agc Ser	gtc Val	8784
att Ile	gca Ala 2930	gga Gly	gtg Val	tgg Trp	ctg Leu	gaa Glu 2935	gag Glu	gca Ala	ggg Gly	cag Gln	aag Lys 2940	ctg Leu	agc Ser	atc Ile	8829



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tat Tyr	gag Glu 2945	gcc Ala	ttg Leu	aag Lys	aaa Lys	gac Asp 2950	ttg Leu	ctg Leu	cag Gln	cca Pro	gac Asp 2955	gtg Val	gct Ala	gtg Val	8874
gcc Ala	ttg Leu 2960	ctg Leu	gag Glu	gcc Ala	cag Gln	gct Ala 2965	ggc Gly	act Thr	ggg Gly	cac His	atc Ile 2970	att Ile	gac Asp	cct Pro	8919
gcc Ala	act Thr 2975	agt Ser	gcc Ala	cgg Arg	ctg Leu	acc Thr 2980	gtg Val	gat Asp	gag Glu	gcg Ala	gtg Val 2985	cgc Arg	gcc Ala	ggc Gly	8964
cta Leu	gtg Val 2990	ggg Gly	ccc Pro	gag Glu	ctg Leu	cat His 2995	gag Glu	aag Lys	ctc Leu	ttg Leu	tca Ser 3000	gct Ala	gag Glu	aag Lys	9009
gct Ala	gtg Val 3005	aca Thr	ggc Gly	tat Tyr	agg Arg	gac Asp 3010	ccc Pro	tac Tyr	tcg Ser	gga Gly	caa Gln 3015	agc Ser	gtg Val	tca Ser	9054
ctg Leu	ttc Phe 3020	cag Gln	gcc Ala	ctg Leu	aag Lys	aag Lys 3025	ggc Gly	ctc Leu	atc Ile	ccc Pro	cga Arg 3030	gag Glu	cag Gln	ggc Gly	9099
ctg Leu	cgc Arg 3035	ctg Leu	ctg Leu	gac Asp	gcc Ala	cag Gln 3040	tta Leu	tcc Ser	acc Thr	ggc Gly	ggc Gly 3045	atg Met	gta Val	gac Asp	9144
ccc Pro	agc Ser 3050	aag Lys	agc Ser	cac His	cgt Arg	gtg Val 3055	cca Pro	ctg Leu	gat Asp	gtt Val	gcg Ala 3060	tat Tyr	gcc Ala	cgg Arg	9189
ggc Gly	tac Tyr 3065	ctg Leu	gac Asp	aag Lys	gag Glu	acc Thr 3070	aac Asn	agg Arg	gcc Ala	ctg Leu	acg Thr 3075	tca Ser	ccc Pro	agg Arg	9234
aat Asn	gat Asp 3080	gcc Ala	aga Arg	gtc Val	tac Tyr	ctt Leu 3085	gac Asp	ccc Pro	agc Ser	agc Ser	cag Gln 3090	gag Glu	cca Pro	gcc Ala	9279
acc Thr	tac Tyr 3095	agc Ser	cag Gln	ctg Leu	cag Gln	cag Gln 3100	cgg Arg	tgc Cys	cgt Arg	gct Ala	gac Asp 3105	cag Gln	ctg Leu	acc Thr	9324
ggg Gly	ctg Leu 3110	agc Ser	ctg Leu	ctg Leu	cca Pro	gtc Val 3115	tcg Ser	gag Glu	aag Lys	gcc Ala	gtc Val 3120	cgg Arg	gcc Ala	cgg Arg	9369
cag Gln	gag Glu 3125	gag Glu	gtc Val	tac Tyr	tct Ser	gag Glu 3130	ctc Leu	cag Gln	gcc Ala	cgt Arg	gag Glu 3135	acg Thr	ctg Leu	gag Glu	9414
aag Lys	gcc Ala 3140	cga Arg	gtt Val	gag Glu	gtc Val	ccc Pro 3145	gtg Val	ggc Gly	ggt Gly	ttt Phe	aag Lys 3150	ggc Gly	agg Arg	aca Thr	9459
atg Met	aca Thr 3155	gtg Val	tgg Trp	gag Glu	ctc Leu	ata Ile 3160	agc Ser	tct Ser	gag Glu	tac Tyr	ttc Phe 3165	acc Thr	cag Gln	gag Glu	9504
cag Gln	cgg Arg 3170	cag Gln	gag Glu	ctg Leu	ctg Leu	cgg Arg 3175	cag Gln	ttc Phe	cgc Arg	aca Thr	ggc Gly 3180	aag Lys	gtc Val	acc Thr	9549
gta Val	gag Glu 3185	aaa Lys	gtc Val	atc Ile	agg Arg	atc Ile 3190	gtc Val	atc Ile	acc Thr	atc Ile	gtg Val 3195	gag Glu	gag Glu	gtg Val	9594
gag	acc	cag	cgg	cag	gag	cga	ctg	tcc	ttt	agt	ggc	ctc	cgt	gcc	9639

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Glu	Thr	Gln	Arg	Gln	Glu	Arg	Leu	Ser	Phe	Ser	Gly	Leu	Arg	Ala	
	3200					3205					3210				
cct	gtg	ccg	gcc	agt	gag	ctc	ttg	gct	gcc	aag	atc	ctc	agc	aga	9684
Pro	Val	Pro	Ala	Ser	Glu	Leu	Leu	Ala	Ala	Lys	Ile	Leu	Ser	Arg	
	3215					3220					3225				
gct	cag	ttt	gac	cag	ctc	aag	gaa	ggc	aag	aca	tca	gtc	aaa	gac	9729
Ala	Gln	Phe	Asp	Gln	Leu	Lys	Glu	Gly	Lys	Thr	Ser	Val	Lys	Asp	
	3230					3235					3240				
ctg	tca	gag	gtg	ggc	tct	gtg	cgg	aca	ctc	ctg	caa	ggc	agc	ggc	9774
Leu	Ser	Glu	Val	Gly	Ser	Val	Arg	Thr	Leu	Leu	Gln	Gly	Ser	Gly	
	3245					3250					3255				
tgc	ctc	gct	ggc	gtc	tac	ctg	gag	gac	tct	aag	gag	aaa	gtg	acc	9819
Cys	Leu	Ala	Gly	Val	Tyr	Leu	Glu	Asp	Ser	Lys	Glu	Lys	Val	Thr	
	3260					3265					3270				
atc	tat	gag	gcc	atg	cgc	cgg	ggc	ctc	ctc	aga	ccc	agc	aca	gcc	9864
Ile	Tyr	Glu	Ala	Met	Arg	Arg	Gly	Leu	Leu	Arg	Pro	Ser	Thr	Ala	
	3275					3280					3285				
aca	ctc	ctg	ctg	gag	gcc	cag	gct	gcc	act	ggc	ttt	ctg	gtg	gac	9909
Thr	Leu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Leu	Val	Asp	
	3290					3295					3300				
cct	gtg	cgg	aac	cag	cgt	ctg	tat	gtg	cat	gag	gct	gtc	aag	gcg	9954
Pro	Val	Arg	Asn	Gln	Arg	Leu	Tyr	Val	His	Glu	Ala	Val	Lys	Ala	
	3305					3310					3315				
gga	gtc	gtg	ggt	cct	gag	ctc	cat	gag	aag	ctc	ctg	tcc	gct	gag	9999
Gly	Val	Val	Gly	Pro	Glu	Leu	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu	
	3320					3325					3330				
aag	gcg	gtc	acc	ggc	tat	aag	gac	ccc	tac	tca	ggc	acc	acc	atc	10044
Lys	Ala	Val	Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	Thr	Thr	Ile	
	3335					3340					3345				
tca	ctc	ttc	cag	gcc	atg	aag	aag	ggc	ttg	gtc	ctc	agg	gag	cac	10089
Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	Val	Leu	Arg	Glu	His	
	3350					3355					3360				
gcc	atc	cgc	ctg	ctg	gag	gcc	cag	atc	gcc	acg	ggg	ggc	atc	atc	10134
Ala	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	
	3365					3370					3375				
gac	ccc	gtg	cac	agc	cac	cgc	ctg	ccc	gtg	gac	gtg	gcc	tac	cag	10179
Asp	Pro	Val	His	Ser	His	Arg	Leu	Pro	Val	Asp	Val	Ala	Tyr	Gln	
	3380					3385					3390				
cgc	ggc	tac	ttc	gac	gag	gag	atg	agc	cgc	atc	ctg	gct	gac	ccg	10224
Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Ser	Arg	Ile	Leu	Ala	Asp	Pro	
	3395					3400					3405				
agc	gac	gac	acc	aag	ggc	ttc	ttc	gac	ccc	aac	acg	cac	gag	aac	10269
Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	
	3410					3415					3420				
ctc	acc	tac	ctg	cag	ctg	ctg	gag	cgc	tgc	gtg	gag	gac	ccc	gag	10314
Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro	Glu	
	3425					3430					3435				
acg	ggc	ctg	cgc	ctt	ctg	ccg	ctc	aaa	ggg	gca	gag	aag	aca	gag	10359
Thr	Gly	Leu	Arg	Leu	Leu	Pro	Leu	Lys	Gly	Ala	Glu	Lys	Thr	Glu	
	3440					3445					3450				
gtg	gtg	gaa	acc	aca	cag	gtg	tat	acg	gag	gag	gag	act	agg	agg	10404
Val	Val	Glu	Thr	Thr	Gln	Val	Tyr	Thr	Glu	Glu	Glu	Thr	Arg	Arg	

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3455		3460		3465		
gcg ttt gag gag acg cag att gac atc ccg ggt ggt ggc agc cac	10449					
Ala Phe Glu Glu Thr Gln Ile Asp Ile Pro Gly Gly Ser His						
3470		3475		3480		
ggt ggc tcc tcc atg tcc ctg tgg gag gtg atg cag tca gac atg	10494					
Gly Gly Ser Ser Met Ser Leu Trp Glu Val Met Gln Ser Asp Met						
3485		3490		3495		
atc cca gag gat cag cga gcc cgg ctc atg gct gac ttc cag gct	10539					
Ile Pro Glu Asp Gln Arg Ala Arg Leu Met Ala Asp Phe Gln Ala						
3500		3505		3510		
ggc cga gtg acc aag gag cgt atg atc atc att atc att gag atc	10584					
Gly Arg Val Thr Lys Glu Arg Met Ile Ile Ile Ile Ile Glu Ile						
3515		3520		3525		
atc gag aag acc gag atc atc cgc cag cag aac ctt gcc tcc tat	10629					
Ile Glu Lys Thr Glu Ile Ile Arg Gln Gln Asn Leu Ala Ser Tyr						
3530		3535		3540		
gac tac gtg cgc cgc cgc ctc act gcc gag gac ctg tac gag gcc	10674					
Asp Tyr Val Arg Arg Arg Leu Thr Ala Glu Asp Leu Tyr Glu Ala						
3545		3550		3555		
cgg atc atc tcc ctc gag acc tac aac ctc ttc cgg gaa ggc acc	10719					
Arg Ile Ile Ser Leu Glu Thr Arg Tyr Asn Leu Phe Arg Glu Gly Thr						
3560		3565		3570		
aag agc ctc cgt gaa gtt ctg gag atg gag tct gcc tgg cgc tac	10764					
Lys Ser Leu Arg Glu Val Leu Glu Met Glu Ser Ala Trp Arg Tyr						
3575		3580		3585		
ctt tat ggc aca ggg tca gtg gcc ggg gtc tac ctg cct ggc tct	10809					
Leu Tyr Gly Thr Gly Ser Val Ala Gly Val Tyr Leu Pro Gly Ser						
3590		3595		3600		
cgg cag acg ctg acc atc tac cag gcc ctt aag aag ggg ctg ctg	10854					
Arg Gln Thr Leu Thr Ile Tyr Gln Ala Leu Lys Lys Gly Leu Leu						
3605		3610		3615		
agt gct gag gtg gcc cgc ttg ttg ctg gaa gca cag gca gcc aca	10899					
Ser Ala Glu Val Ala Arg Leu Leu Leu Glu Ala Gln Ala Ala Thr						
3620		3625		3630		
ggc ttc ctg ctg gat cca gta aag ggt gag cgg ctg acc gtg gat	10944					
Gly Phe Leu Leu Asp Pro Val Lys Gly Glu Arg Leu Thr Val Asp						
3635		3640		3645		
gag gcc gtg cgg aag ggt ctg gta ggc ccc gag ctg cat gat cgg	10989					
Glu Ala Val Arg Lys Gly Leu Val Gly Pro Glu Leu His Asp Arg						
3650		3655		3660		
ctg ctg tcc gca gag cgg gct gtg act ggc tac cgt gac ccc tat	11034					
Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Arg Asp Pro Tyr						
3665		3670		3675		
acc gaa cag acc atc tca ctc ttc cag gcc atg aag aag gag ctg	11079					
Thr Glu Gln Thr Ile Ser Leu Phe Gln Ala Met Lys Lys Glu Leu						
3680		3685		3690		
atc cct gct gag gag gcg ctg agg ctg ctg gac gcc cag cta gcc	11124					
Ile Pro Ala Glu Glu Ala Leu Arg Leu Leu Asp Ala Gln Leu Ala						
3695		3700		3705		
aca gga ggc att gtg gac ccc cgc ctg ggg ttc cac ctc cct ctg	11169					
Thr Gly Gly Ile Val Asp Pro Arg Leu Gly Phe His Leu Pro Leu						
3710		3715		3720		

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gag Glu	gtg Val 3725	gct Ala	tac Tyr	caa Gln	cgc Arg	ggc Gly 3730	tac Tyr	ctc Leu	aat Asn	aag Lys	gac Asp 3735	aca Thr	cat His	gac Asp	11214
cag Gln	ctg Leu 3740	tca Ser	gag Glu	ccc Pro	agt Ser	gag Glu 3745	gtg Val	cgc Arg	agc Ser	tac Tyr	gtg Val 3750	gac Asp	ccc Pro	tcc Ser	11259
acg Thr	gat Asp 3755	gag Glu	cgc Arg	ctc Leu	agc Ser	tac Tyr 3760	aca Thr	cag Gln	ctg Leu	ctc Leu	aag Lys 3765	cgg Arg	tgc Cys	cgc Arg	11304
cgt Arg	gat Asp 3770	gac Asp	ggc Gly	agt Ser	ggc Gly	cag Gln 3775	atg Met	ctc Leu	ctg Leu	ccg Pro	ctc Leu 3780	tct Ser	gat Asp	gcc Ala	11349
cgc Arg	agg Arg 3785	ctg Leu	acc Thr	ttc Phe	cga Arg	ggc Gly 3790	ctg Leu	cgc Arg	aag Lys	cag Gln	atc Ile 3795	act Thr	gtg Val	gag Glu	11394
gag Glu	ctg Leu 3800	gtg Val	cgt Arg	tct Ser	cag Gln	gtc Val 3805	atg Met	gac Asp	gag Glu	gcc Ala	acg Thr 3810	gcg Ala	cta Leu	cag Gln	11439
ctg Leu	caa Gln 3815	gaa Glu	ggc Gly	ctg Leu	acc Thr	tcc Ser 3820	atc Ile	gag Glu	gag Glu	gtc Val	acc Thr 3825	aag Lys	acc Thr	ctg Leu	11484
cag Gln	aag Lys 3830	ttc Phe	ctt Leu	gag Glu	ggc Gly	acc Thr 3835	agc Ser	tgc Cys	atc Ile	gcc Ala	gga Gly 3840	gtc Val	ttc Phe	gtt Val	11529
gac Asp	gcc Ala 3845	acc Thr	aag Lys	gag Glu	cgg Arg	ctg Leu 3850	tca Ser	gtg Val	tac Tyr	cag Gln	gcc Ala 3855	atg Met	aag Lys	aag Lys	11574
ggc Gly	att Ile 3860	atc Ile	cgc Arg	ccc Pro	ggc Gly	acg Thr 3865	gcc Ala	ttt Phe	gag Glu	ctc Leu	ctg Leu 3870	gaa Glu	gca Ala	cag Gln	11619
gcg Ala	gcc Ala 3875	act Thr	ggc Gly	tat Tyr	gtc Val	att Ile 3880	gac Asp	cct Pro	atc Ile	aag Lys	gga Gly 3885	ctc Leu	aag Lys	ctg Leu	11664
act Thr	gtg Val 3890	gag Glu	gag Glu	gct Ala	gtg Val	cgc Arg 3895	atg Met	ggc Gly	atc Ile	gtg Val	ggc Gly 3900	ccc Pro	gag Glu	ttc Phe	11709
aaa Lys	gac Asp 3905	agg Arg	ctg Leu	ctg Leu	tca Ser	gcc Ala 3910	gag Glu	cgc Arg	gcc Ala	gtc Val	act Thr 3915	ggc Gly	tac Tyr	aag Lys	11754
gat Asp	ccc Pro 3920	tac Tyr	tct Ser	ggg Gly	aaa Lys	ctc Leu 3925	atc Ile	tct Ser	ctc Leu	ttc Phe	cag Gln 3930	gcc Ala	atg Met	aag Lys	11799
aag Lys	ggc Gly 3935	cta Leu	atc Ile	ctg Leu	aag Lys	gac Asp 3940	cac His	ggc Gly	atc Ile	cgt Arg	ctg Leu 3945	ctg Leu	gag Glu	gct Ala	11844
cag Gln	atc Ile 3950	gcc Ala	act Thr	ggc Gly	ggc Gly	atc Ile 3955	atc Ile	gac Asp	ccc Pro	gaa Glu	gag Glu 3960	agc Ser	cac His	cgc Arg	11889
cta Leu	cct Pro 3965	gtg Val	gaa Glu	gtg Val	gcc Ala	tat Tyr 3970	aag Lys	cgt Arg	ggc Gly	ctc Leu	ttc Phe 3975	gac Asp	gag Glu	gag Glu	11934

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atg Met	aat Asn 3980	gag Glu	atc Ile	ctg Leu	acc Thr	gat Asp 3985	ccc Pro	tca Ser	gat Asp	gac Asp	acc Thr 3990	aag Lys	ggc Gly	ttc Phe	11979
ttt Phe	gac Asp 3995	ccc Pro	aac Asn	aca Thr	gag Glu	gag Glu 4000	aac Asn	ctc Leu	acc Thr	tac Tyr	ctg Leu 4005	cag Gln	ctg Leu	atg Met	12024
gag Glu	cgc Arg 4010	tgc Cys	atc Ile	act Thr	gac Asp	ccc Pro 4015	cag Gln	act Thr	ggc Gly	ctg Leu	cgt Arg 4020	ctc Leu	ctg Leu	cca Pro	12069
ctg Leu	aag Lys 4025	gag Glu	aag Lys	aag Lys	cgg Arg	gag Glu 4030	cgg Arg	aag Lys	acg Thr	tcc Ser	tcc Ser 4035	aag Lys	tct Ser	tca Ser	12114
gtg Val	cgt Arg 4040	aag Lys	cgc Arg	cgt Arg	gtg Val	gtg Val 4045	att Ile	gtg Val	gac Asp	cct Pro	gag Glu 4050	aca Thr	agc Ser	aag Lys	12159
gag Glu	atg Met 4055	tcg Ser	gtg Val	tac Tyr	gag Glu	gcc Ala 4060	tac Tyr	cgc Arg	aag Lys	ggc Gly	ctc Leu 4065	att Ile	gac Asp	cac His	12204
cag Gln	acg Thr 4070	tac Tyr	ctg Leu	gag Glu	ctg Leu	tca Ser 4075	gag Glu	cag Gln	gag Glu	tgc Cys	gag Glu 4080	tgg Trp	gaa Glu	gaa Glu	12249
atc Ile	acc Thr 4085	atc Ile	tcc Ser	tcg Ser	tca Ser	gac Asp 4090	ggc Gly	gtg Val	gtc Val	aaa Lys	tct Ser 4095	atg Met	atc Ile	att Ile	12294
gac Asp	cgg Arg 4100	cgc Arg	tct Ser	ggc Gly	cga Arg	cag Gln 4105	tat Tyr	gac Asp	att Ile	gat Asp	gac Asp 4110	gcc Ala	atc Ile	acc Thr	12339
gag Glu	aac Asn 4115	ctc Leu	att Ile	gac Asp	cgc Arg	tcc Ser 4120	gca Ala	ctg Leu	gac Asp	cag Gln	tac Tyr 4125	cgt Arg	gcg Ala	ggc Gly	12384
aca Thr	ctt Leu 4130	tcc Ser	atc Ile	act Thr	gag Glu	ttt Phe 4135	gct Ala	gac Asp	atg Met	ctc Leu	tcg Ser 4140	ggc Gly	aat Asn	gct Ala	12429
ggc Gly	ggc Gly 4145	ttc Phe	cgc Arg	tcc Ser	cgc Arg	tcc Ser 4150	tcc Ser	tcc Ser	gtg Val	ggt Gly	tca Ser 4155	tca Ser	tct Ser	tcc Ser	12474
tac Tyr	ccc Pro 4160	atc Ile	agc Ser	cct Pro	gcc Ala	gtc Val 4165	tcg Ser	agg Arg	acc Thr	cag Gln	ttg Leu 4170	gct Ala	tcc Ser	tgg Trp	12519
tct Ser	gat Asp 4175	cct Pro	acc Thr	gag Glu	gag Glu	acc Thr 4180	ggc Gly	cca Pro	gtg Val	gct Ala	ggc Gly 4185	atc Ile	ctg Leu	gac Asp	12564
aca Thr	gag Glu 4190	act Thr	ctg Leu	gag Glu	aag Lys	gtg Val 4195	tcc Ser	atc Ile	acg Thr	gag Glu	gcc Ala 4200	atg Met	cac His	cgc Arg	12609
aac Asn	ctg Leu 4205	gta Val	gac Asp	aac Asn	atc Ile	act Thr 4210	ggc Gly	cag Gln	cgg Arg	ctg Leu	ctg Leu 4215	gag Glu	gca Ala	cag Gln	12654
gcc Ala	tgc Cys 4220	act Thr	ggg Gly	ggc Gly	atc Ile	atc Ile 4225	gat Asp	ccc Pro	agc Ser	acg Thr	ggt Gly 4230	gag Glu	cgc Arg	ttc Phe	12699
cca g	gtc t	act g	gag g	gct g	gtc a	aac a	aag g	ggc c	ctg g	gta g	gac a	aag a	atc a	atg a	12744

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Pro	Val	Thr	Glu	Ala	Val	Asn	Lys	Gly	Leu	Val	Asp	Lys	Ile	Met	
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Val	Asp	Arg	Ile	Asn	Leu	Ala	Gln	Lys	Ala	Phe	Cys	Gly	Phe	Glu	
	4250					4255					4260				
gac	cca	cgc	acc	aag	acc	aag	atg	tca	gcc	gcg	cag	gcc	ctg	aag	12834
Asp	Pro	Arg	Thr	Lys	Thr	Lys	Met	Ser	Ala	Ala	Gln	Ala	Leu	Lys	
	4265					4270					4275				
aag	ggc	tgg	ctg	tac	tac	gag	gca	ggc	cag	cgc	ttc	ctg	gag	gtg	12879
Lys	Gly	Trp	Leu	Tyr	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Val	
	4280					4285					4290				
cag	tac	cta	acg	ggt	ggt	ctg	att	gag	ccc	gac	acc	cct	ggc	cgt	12924
Gln	Tyr	Leu	Thr	Gly	Gly	Leu	Ile	Glu	Pro	Asp	Thr	Pro	Gly	Arg	
	4295					4300					4305				
gta	ccc	ctc	gat	gag	gcc	ctg	caa	cgt	ggc	acc	gtg	gat	gct	cgc	12969
Val	Pro	Leu	Asp	Glu	Ala	Leu	Gln	Arg	Gly	Thr	Val	Asp	Ala	Arg	
	4310					4315					4320				
acg	gcc	cag	aag	ctg	cgt	gac	gtc	agt	gcc	tac	tcc	aag	tac	ctc	13014
Thr	Ala	Gln	Lys	Leu	Arg	Asp	Val	Ser	Ala	Tyr	Ser	Lys	Tyr	Leu	
	4325					4330					4335				
acg	tgc	ccc	aag	acc	aag	ctc	aag	atc	tcc	tac	aag	gat	gct	ttg	13059
Thr	Cys	Pro	Lys	Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Leu	
	4340					4345					4350				
gac	cgc	agc	atg	gtg	gag	gag	ggc	acg	ggg	ctg	agg	ctg	ttg	gaa	13104
Asp	Arg	Ser	Met	Val	Glu	Glu	Gly	Thr	Gly	Leu	Arg	Leu	Leu	Glu	
	4355					4360					4365				
gcc	gca	gca	cag	tcc	agc	aag	ggc	tac	tac	agt	ccc	tac	agt	gtc	13149
Ala	Ala	Ala	Gln	Ser	Ser	Lys	Gly	Tyr	Tyr	Ser	Pro	Tyr	Ser	Val	
	4370					4375					4380				
agc	ggc	tct	ggc	tcc	acc	acc	ggc	tca	cgc	act	ggc	tca	cgc	acc	13194
Ser	Gly	Ser	Gly	Ser	Thr	Thr	Gly	Ser	Arg	Thr	Gly	Ser	Arg	Thr	
	4385					4390					4395				
ggc	tcc	cgg	gcc	ggc	tcc	cgc	cgt	ggc	agc	ttt	gat	gcc	act	ggc	13239
Gly	Ser	Arg	Ala	Gly	Ser	Arg	Arg	Gly	Ser	Phe	Asp	Ala	Thr	Gly	
	4400					4405					4410				
tct	ggc	ttc	tcc	atg	acc	ttc	tgc	tct	tcc	tct	tac	tct	tcc	tcc	13284
Ser	Gly	Phe	Ser	Met	Thr	Phe	Ser	Ser	Ser	Ser	Tyr	Ser	Ser	Ser	
	4415					4420					4425				
ggg	tat	ggc	cgc	cgc	tac	gcc	tca	ggg	cct	cca	gcc	tct	tta	ggg	13329
Gly	Tyr	Gly	Arg	Arg	Tyr	Ala	Ser	Gly	Pro	Pro	Ala	Ser	Leu	Gly	
	4430					4435					4440				
ggt	cct	gag	tcc	gcg	gtg	gcc									13350
Gly	Pro	Glu	Ser	Ala	Val	Ala									
	4445					4450									

<210> 84  
 <211> 4450  
 <212> PRT  
 <213> Cricetulus griseus

<400> 84

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Arg His Arg Gln Val Lys Leu Val Asn Ile Arg Asn Asp Asp Ile Ala  
20 25 30

Asp Gly Asn Pro Lys Leu Thr Leu Gly Leu Ile Trp Thr Ile Ile Leu  
35 40 45

His Phe Gln Ile Ser Asp Ile Gln Val Ser Gly Gln Ser Glu Asp Met  
50 55 60

Thr Ala Lys Glu Lys Leu Leu Leu Trp Ser Gln Arg Met Val Glu Gly  
65 70 75 80

Tyr Gln Gly Leu Arg Cys Asp Asn Phe Thr Thr Ser Trp Arg Asp Gly  
85 90 95

Arg Leu Phe Asn Ala Ile Ile His Arg His Lys Pro Met Leu Ile Asp  
100 105 110

Met Asn Lys Val Tyr Arg Gln Thr Asn Leu Glu Asn Leu Asp Gln Ala  
115 120 125

Phe Ser Val Ala Glu Arg Asp Leu Gly Val Thr Arg Leu Leu Asp Pro  
130 135 140

Glu Asp Val Asp Val Pro Gln Pro Asp Glu Lys Ser Ile Ile Thr Tyr  
145 150 155 160

Val Ser Ser Leu Tyr Asp Ala Met Pro Arg Val Pro Gly Ala Gln Asn  
165 170 175

Gly Val Arg Ala Asn Glu Leu Gln Leu Arg Trp Gln Glu Tyr Arg Glu  
180 185 190

Leu Val Leu Leu Leu Leu Gln Trp Ile Arg His His Thr Ala Ala Phe  
195 200 205

Glu Glu Arg Lys Phe Pro Ser Ser Phe Glu Glu Ile Glu Ile Leu Trp  
210 215 220

Cys Gln Phe Leu Lys Phe Lys Glu Thr Glu Leu Pro Ala Lys Glu Ala  
225 230 235 240

Asp Lys Ser Arg Ser Lys Gly Ile Tyr Gln Ser Leu Glu Gly Ala Val  
245 250 255

Gln Ala Gly Gln Leu Gln Ile Pro Pro Gly Phe His Pro Leu Asp Val  
260 265 270

Glu Lys Glu Trp Gly Lys Leu His Val Ala Ile Leu Glu Arg Glu Lys  
275 280 285

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Gln Leu Arg Gly Glu Phe Glu Arg Leu Glu Cys Leu Gln Arg Ile Val  
290 295 300

Ser Lys Leu Gln Met Glu Ala Gly Leu Cys Glu Glu Gln Leu Asn Gln  
305 310 315 320

Ala Asp Ser Leu Leu Gln Ser Asp Ile Arg Leu Leu Ala Ser Gly Lys  
325 330 335

Val Ala Gln Arg Ala Gly Glu Val Glu Arg Asp Leu Asp Lys Ala Asp  
340 345 350

Gly Met Ile Arg Leu Leu Phe Asn Asp Val Gln Thr Leu Lys Asp Gly  
355 360 365

Arg His Pro Gln Gly Glu Gln Met Tyr Arg Arg Val Tyr Arg Leu His  
370 375 380

Glu Arg Leu Val Ala Ile Arg Thr Glu Tyr Asn Leu Arg Leu Lys Ala  
385 390 395 400

Gly Val Ala Ala Pro Val Thr Gln Val Thr Val Gln Ser Thr Gln Arg  
405 410 415

Arg Pro Glu Leu Glu Asp Ser Thr Leu Arg Tyr Leu Gln Asp Leu Leu  
420 425 430

Ala Trp Val Glu Glu Asn Gln Arg Arg Ile Asp Ser Ala Glu Trp Gly  
435 440 445

Val Asp Leu Pro Ser Val Glu Ala Gln Leu Gly Ser His Arg Gly Met  
450 455 460

His Gln Ser Ile Glu Glu Phe Arg Ala Lys Ile Glu Arg Ala Arg Asn  
465 470 475 480

Asp Glu Ser Gln Leu Ser Pro Ala Thr Arg Gly Ala Tyr Arg Glu Cys  
485 490 495

Leu Gly Arg Leu Asp Leu Gln Tyr Ala Lys Leu Leu Asn Ser Ser Lys  
500 505 510

Ala Arg Leu Arg Ser Leu Glu Ser Leu His Gly Phe Val Ala Ala Ala  
515 520 525

Thr Lys Glu Leu Met Trp Leu Asn Glu Lys Glu Glu Glu Val Gly  
530 535 540

Phe Asp Trp Ser Asp Arg Asn Thr Asn Met Ala Ala Lys Lys Glu Ser  
545 550 555 560



Tyr Ser Ala Leu Met Arg Glu Leu Glu Met Lys Glu Lys Lys Ile Lys  
565 570 575

Glu Thr Gln Asn Thr Gly Asp Arg Leu Leu Arg Glu Asp His His Ala  
580 585 590

Arg Pro Thr Val Glu Ser Phe Gln Ala Ala Leu Gln Thr Gln Trp Ser  
595 600 605

Trp Met Leu Gln Leu Cys Cys Cys Ile Glu Ala His Leu Lys Glu Asn  
610 615 620

Thr Ala Tyr Phe Gln Phe Phe Ser Asp Val Arg Glu Ala Glu Glu Gln  
625 630 635 640

Leu Gln Lys Leu Gln Glu Thr Met Arg Arg Glu Tyr Ser Cys Asp Arg  
645 650 655

Ser Ile Thr Val Thr Arg Leu Glu Asp Leu Leu Gln Asp Ala Gln Asp  
660 665 670

Glu Arg Glu Gln Leu Asn Glu Tyr Lys Gly His Leu Ser Gly Leu Ala  
675 680 685

Lys Arg Ala Lys Ala Ile Val Gln Leu Lys Pro Arg Asn Pro Ala His  
690 695 700

Pro Val Arg Gly His Val Pro Leu Met Ala Val Cys Asp Tyr Lys Gln  
705 710 715 720

Val Glu Val Thr Val His Lys Gly Asp Gln Cys Gln Leu Val Gly Pro  
725 730 735

Ala Gln Pro Ser His Trp Lys Val Leu Arg Gly Pro Ser Ser Glu Ala  
740 745 750

Ala Val Pro Ser Val Cys Phe Leu Val Pro Pro Pro Asn Gln Glu Ala  
755 760 765

Gln Glu Ala Val Ala Arg Leu Glu Ala Gln His Gln Ala Leu Val Thr  
770 775 780

Leu Trp His Gln Leu His Val Asp Met Lys Ser Leu Leu Ala Trp Gln  
785 790 795 800

Asn Leu Ser Arg Asp Ile Gln Leu Ile Arg Ser Trp Ser Leu Val Thr  
805 810 815

Phe Arg Thr Leu Lys Pro Glu Glu Gln Arg Gln Ala Leu Arg Asn Leu  
820 825 830

Glu Leu His Tyr Gln Ala Phe Leu Arg Asp Ser Gln Asp Ala Gly Gly  
Seite 469

835

840

845

Phe Gly Pro Glu Asp Arg Leu Val Ala Glu Arg Glu Tyr Gly Ser Cys  
 850 855 860

Ser Arg His Tyr Gln Gln Leu Leu Gln Ser Leu Glu Gln Gly Glu Gln  
 865 870 875 880

Glu Glu Ser Arg Cys Gln Arg Cys Ile Ser Glu Leu Lys Asp Ile Arg  
 885 890 895

Leu Gln Leu Glu Ala Cys Glu Thr Arg Thr Val His Arg Leu Arg Leu  
 900 905 910

Pro Leu Asp Lys Glu Pro Ala Arg Glu Cys Ala Gln Arg Ile Ala Glu  
 915 920 925

Gln Gln Lys Ala Gln Ala Glu Val Glu Gly Leu Gly Lys Gly Val Ala  
 930 935 940

Arg Leu Ser Ala Glu Ala Glu Lys Val Leu Ala Leu Pro Glu Pro Ser  
 945 950 955 960

Pro Ala Ala Pro Thr Leu Arg Ser Glu Leu Glu Leu Thr Leu Gly Lys  
 965 970 975

Leu Glu Gln Val Arg Ser Leu Ser Ala Ile Tyr Leu Glu Lys Leu Lys  
 980 985 990

Thr Ile Ser Leu Val Ile Arg Ser Thr Gln Gly Ala Glu Glu Val Leu  
 995 1000 1005

Lys Ala His Glu Glu Gln Leu Lys Glu Ala Gln Ala Val Pro Ala  
 1010 1015 1020

Thr Leu Gln Glu Leu Glu Ala Thr Lys Ala Ser Leu Lys Lys Leu  
 1025 1030 1035

Arg Ala Gln Ala Glu Ala Gln Gln Pro Val Phe Asp Thr Leu Arg  
 1040 1045 1050

Asp Glu Leu Arg Gly Ala Gln Glu Val Gly Glu Arg Leu Gln Gln  
 1055 1060 1065

Arg His Gly Glu Arg Asp Val Glu Val Glu Arg Trp Arg Glu Arg  
 1070 1075 1080

Val Asn Gln Leu Leu Glu Arg Trp Gln Ala Val Leu Ala Gln Ile  
 1085 1090 1095

Asp Val Arg Gln Arg Glu Leu Glu Gln Leu Gly Arg Gln Leu Arg  
 1100 1105 1110

Tyr	Tyr	Arg	Glu	Ser	Ala	Asp	Pro	Leu	Ser	Ser	Trp	Leu	Gln	Asp
	1115					1120					1125			
Ala	Lys	Arg	Arg	Gln	Glu	Gln	Ile	Gln	Ala	Val	Pro	Ile	Pro	Asn
	1130					1135					1140			
Ser	Gln	Ala	Ala	Arg	Glu	Gln	Leu	Arg	Gln	Glu	Lys	Ala	Leu	Leu
	1145					1150					1155			
Glu	Glu	Ile	Glu	Arg	His	Gly	Glu	Lys	Val	Glu	Glu	Cys	Gln	Lys
	1160					1165					1170			
Phe	Ala	Lys	Gln	Tyr	Ile	Asn	Ala	Ile	Lys	Asp	Tyr	Glu	Leu	Gln
	1175					1180					1185			
Leu	Val	Thr	Tyr	Lys	Ala	Gln	Leu	Glu	Pro	Val	Ala	Ser	Pro	Ala
	1190					1195					1200			
Lys	Lys	Pro	Lys	Val	Gln	Ser	Gly	Ser	Glu	Ser	Val	Ile	Gln	Glu
	1205					1210					1215			
Tyr	Val	Asp	Leu	Arg	Thr	Arg	Tyr	Ser	Glu	Leu	Thr	Thr	Leu	Thr
	1220					1225					1230			
Ser	Gln	Tyr	Ile	Lys	Phe	Ile	Ser	Glu	Thr	Leu	Arg	Arg	Met	Glu
	1235					1240					1245			
Glu	Glu	Glu	Arg	Leu	Ala	Glu	Gln	Gln	Arg	Ala	Glu	Glu	Arg	Glu
	1250					1255					1260			
Arg	Leu	Ala	Glu	Gly	Glu	Ala	Ala	Leu	Glu	Lys	Gln	Arg	Gln	Leu
	1265					1270					1275			
Ala	Glu	Ala	His	Ala	Gln	Ala	Lys	Ala	Gln	Ala	Glu	Leu	Glu	Ala
	1280					1285					1290			
Gln	Glu	Leu	Gln	Arg	Arg	Met	Gln	Glu	Glu	Val	Ala	Arg	Arg	Glu
	1295					1300					1305			
Glu	Ala	Ala	Val	Asn	Ala	Gln	Gln	Gln	Lys	Arg	Ser	Ile	Gln	Glu
	1310					1315					1320			
Glu	Leu	Gln	His	Leu	Arg	Gln	Ser	Ser	Glu	Ala	Glu	Ile	Gln	Ala
	1325					1330					1335			
Lys	Ala	Gln	Gln	Val	Glu	Ala	Ala	Glu	Arg	Ser	Arg	Met	Arg	Ile
	1340					1345					1350			
Glu	Glu	Glu	Ile	Arg	Val	Val	Arg	Leu	Gln	Leu	Glu	Thr	Thr	Glu
	1355					1360					1365			

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Arg Gln Arg Gly Gly Ala Glu Gly Glu Leu Gln Ala Leu Arg Ala  
1370 1375 1380

Arg Ala Glu Glu Ala Glu Ala Gln Lys Arg Gln Ala Gln Glu Glu  
1385 1390 1395

Ala Glu Arg Leu Arg Arg Gln Val Gln Asp Glu Ser Gln Arg Lys  
1400 1405 1410

Arg Gln Ala Glu Ala Glu Leu Ala Leu Arg Val Lys Ala Gln Ala  
1415 1420 1425

Glu Ala Ala Gln Glu Lys Gln Arg Ala Leu Gln Ala Leu Glu Glu  
1430 1435 1440

Leu Arg Leu Gln Ala Glu Glu Ala Glu Arg Arg Leu Arg Gln Ala  
1445 1450 1455

Gln Ala Glu Arg Ala Arg Gln Val Gln Val Ala Leu Glu Thr Ala  
1460 1465 1470

Gln Arg Ser Ala Glu Val Glu Leu Gln Ser Lys Arg Ala Ser Phe  
1475 1480 1485

Ala Glu Lys Thr Ala Gln Leu Glu Arg Thr Leu Gln Glu Glu His  
1490 1495 1500

Val Thr Val Thr Gln Leu Arg Glu Lys Ala Glu Arg Arg Ala Gln  
1505 1510 1515

Gln Gln Ala Glu Ala Glu Arg Ala Arg Glu Glu Ala Glu Arg Glu  
1520 1525 1530

Leu Glu Arg Trp Gln Leu Lys Ala Asn Glu Ala Leu Arg Leu Arg  
1535 1540 1545

Leu Gln Ala Glu Glu Val Ala Gln Gln Arg Ser Leu Ala Gln Ala  
1550 1555 1560

Asp Ala Glu Lys Gln Lys Glu Glu Ala Glu Arg Glu Ala Arg Arg  
1565 1570 1575

Arg Gly Lys Ala Glu Glu Gln Ala Val Arg Gln Arg Glu Leu Ala  
1580 1585 1590

Glu Gln Glu Leu Glu Lys Gln Arg Gln Leu Ala Glu Gly Thr Ala  
1595 1600 1605

Gln Gln Arg Leu Ala Ala Glu Gln Glu Leu Ile Arg Leu Arg Ala  
1610 1615 1620

Glu Thr Glu Gln Gly Glu Gln Gln Arg Gln Leu Leu Glu Glu Glu  
1625 1630 1635

Leu Ala Arg Leu Gln Arg Glu Ala Thr Ala Ala Thr His Lys Arg  
1640 1645 1650

Gln Glu Leu Glu Ala Glu Leu Ala Lys Val Arg Ala Glu Met Glu  
1655 1660 1665

Val Leu Leu Ala Ser Lys Ala Arg Ala Glu Glu Glu Ser Arg Ser  
1670 1675 1680

Thr Ser Glu Lys Ser Lys Gln Arg Leu Glu Ala Glu Ala Asp Arg  
1685 1690 1695

Phe Arg Glu Leu Ala Glu Glu Ala Ala Arg Leu Arg Ala Leu Ala  
1700 1705 1710

Glu Glu Ala Lys Arg Gln Arg Gln Leu Ala Glu Glu Asp Ala Ala  
1715 1720 1725

Arg Gln Arg Ala Glu Ala Glu Arg Val Leu Thr Glu Lys Leu Ala  
1730 1735 1740

Ala Ile Ser Glu Ala Thr Arg Leu Lys Thr Glu Ala Glu Ile Ala  
1745 1750 1755

Leu Lys Glu Lys Glu Ala Glu Asn Glu Arg Leu Arg Arg Leu Ala  
1760 1765 1770

Glu Asp Glu Ala Phe Gln Arg Arg Arg Leu Glu Glu Gln Ala Ala  
1775 1780 1785

Leu His Lys Ala Asp Ile Glu Glu Arg Leu Ala Gln Leu Arg Lys  
1790 1795 1800

Ala Ser Glu Ser Glu Leu Glu Arg Gln Lys Gly Leu Val Glu Asp  
1805 1810 1815

Thr Leu Arg Gln Arg Arg Gln Val Glu Glu Glu Ile Leu Ala Leu  
1820 1825 1830

Lys Val Ser Phe Glu Lys Ala Ala Ala Gly Lys Ala Glu Leu Glu  
1835 1840 1845

Leu Glu Leu Gly Arg Ile Arg Ser Ser Ala Glu Asp Thr Met Arg  
1850 1855 1860

Ser Lys Glu Gln Ala Glu Gln Glu Ala Ala Arg Gln Arg Gln Leu  
1865 1870 1875

Ala Ala Glu Glu Glu Gln Arg Arg Arg Glu Ala Glu Glu Arg Val

1880

1885

1890

Gln Lys Ser Leu Ala Ala Glu Glu Glu Ala Ala Arg Gln Arg Lys  
1895 1900 1905

Ala Ala Leu Glu Glu Val Glu Arg Leu Lys Ala Lys Val Glu Glu  
1910 1915 1920

Ala Arg Arg Leu Arg Glu Arg Ala Glu Gln Glu Ser Ala Arg Gln  
1925 1930 1935

Leu Gln Leu Ala Gln Glu Ala Ala Gln Lys Arg Leu Gln Ala Glu  
1940 1945 1950

Glu Lys Ala His Ala Phe Val Val Gln Gln Arg Glu Glu Glu Leu  
1955 1960 1965

Gln Gln Thr Leu Gln Gln Glu Gln Ser Met Leu Glu Arg Leu Arg  
1970 1975 1980

Gly Glu Ala Glu Ala Ala Arg Arg Ala Ala Glu Glu Ala Glu Glu  
1985 1990 1995

Ala Arg Glu Gln Ala Glu Arg Glu Ala Ala Gln Ser Arg Lys Gln  
2000 2005 2010

Val Glu Glu Ala Glu Arg Leu Lys Gln Ser Ala Glu Glu Gln Ala  
2015 2020 2025

Gln Ala Arg Ala Gln Ala Gln Ala Ala Ala Glu Lys Leu Arg Lys  
2030 2035 2040

Glu Ala Glu Gln Glu Ala Ala Arg Arg Ala Gln Ala Glu Gln Ala  
2045 2050 2055

Ala Leu Lys Gln Lys Gln Ala Ala Asp Ala Glu Met Glu Lys His  
2060 2065 2070

Lys Lys Phe Ala Glu Gln Thr Leu Arg Gln Lys Ala Gln Val Glu  
2075 2080 2085

Gln Glu Leu Thr Thr Leu Arg Leu Gln Leu Glu Glu Thr Asp His  
2090 2095 2100

Gln Lys Ser Ile Leu Asp Glu Glu Leu Gln Arg Leu Lys Ala Glu  
2105 2110 2115

Val Thr Glu Ala Ala Arg Gln Arg Ser Gln Val Glu Glu Glu Leu  
2120 2125 2130

Phe Ser Val Arg Val Gln Met Glu Glu Leu Gly Lys Leu Lys Ala  
2135 2140 2145

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Arg	Ile	Glu	Ala	Glu	Asn	Arg	Ala	Leu	Ile	Leu	Arg	Asp	Lys	Asp
	2150					2155					2160			
Asn	Thr	Gln	Arg	Phe	Leu	Glu	Glu	Glu	Ala	Glu	Lys	Met	Lys	Gln
	2165					2170					2175			
Val	Ala	Glu	Glu	Ala	Ala	Arg	Leu	Ser	Val	Ala	Ala	Gln	Glu	Ala
	2180					2185					2190			
Ala	Arg	Leu	Arg	Gln	Leu	Ala	Glu	Glu	Asp	Leu	Ala	Gln	Gln	Arg
	2195					2200					2205			
Ala	Leu	Ala	Glu	Lys	Met	Leu	Lys	Glu	Lys	Met	Gln	Ala	Val	Gln
	2210					2215					2220			
Glu	Ala	Thr	Arg	Leu	Lys	Ala	Glu	Ala	Glu	Leu	Leu	Gln	Gln	Gln
	2225					2230					2235			
Lys	Glu	Leu	Ala	Gln	Glu	Gln	Ala	Arg	Arg	Leu	Gln	Glu	Asp	Lys
	2240					2245					2250			
Glu	Gln	Met	Ala	Gln	Gln	Leu	Val	Glu	Glu	Thr	Gln	Gly	Phe	Gln
	2255					2260					2265			
Arg	Thr	Leu	Glu	Val	Glu	Arg	Gln	Arg	Gln	Leu	Glu	Met	Ser	Ala
	2270					2275					2280			
Glu	Ala	Glu	Arg	Leu	Lys	Leu	Arg	Met	Ala	Glu	Met	Ser	Arg	Ala
	2285					2290					2295			
Gln	Ala	Arg	Ala	Glu	Glu	Asp	Ala	Gln	Arg	Phe	Arg	Lys	Gln	Ala
	2300					2305					2310			
Glu	Glu	Ile	Gly	Glu	Lys	Leu	His	Arg	Thr	Glu	Leu	Ala	Thr	Gln
	2315					2320					2325			
Glu	Lys	Val	Thr	Leu	Val	Gln	Thr	Leu	Glu	Ile	Gln	Arg	Gln	Gln
	2330					2335					2340			
Ser	Asp	His	Asp	Ala	Glu	Arg	Leu	Arg	Glu	Ala	Ile	Ala	Glu	Leu
	2345					2350					2355			
Glu	Arg	Glu	Lys	Glu	Lys	Leu	Lys	Gln	Glu	Ala	Lys	Leu	Leu	Gln
	2360					2365					2370			
Leu	Lys	Ser	Glu	Glu	Met	Gln	Thr	Val	Gln	Gln	Glu	Gln	Ile	Leu
	2375					2380					2385			
Gln	Glu	Thr	Gln	Ala	Leu	Gln	Lys	Ser	Phe	Leu	Ser	Glu	Lys	Asp
	2390					2395					2400			

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Ser Leu Leu Gln Arg Glu Arg Phe Ile Glu Gln Glu Lys Ala Lys  
2405 2410 2415

Leu Glu Gln Leu Phe Gln Asp Glu Val Ala Lys Ala Gln Gln Leu  
2420 2425 2430

Arg Glu Glu Gln Gln Arg Gln Gln Arg Gln Met Glu Gln Glu Lys  
2435 2440 2445

Gln Glu Leu Val Ala Ser Met Glu Glu Ala Arg Arg Arg Gln Cys  
2450 2455 2460

Glu Ala Glu Glu Ala Val Arg Arg Lys Gln Glu Glu Leu Gln His  
2465 2470 2475

Leu Glu Leu Gln Arg Gln Gln Gln Glu Lys Leu Leu Ala Glu Glu  
2480 2485 2490

Asn Gln Arg Leu Arg Glu Arg Leu Gln Arg Leu Glu Glu Glu His  
2495 2500 2505

Arg Ala Ala Leu Ala His Ser Glu Glu Ile Ala Ala Thr Gln Ala  
2510 2515 2520

Ala Ala Ala Lys Ala Leu Pro Asn Gly Arg Asp Ala Leu Asp Gly  
2525 2530 2535

Pro Ser Met Glu Val Glu Pro Glu His Ala Phe Glu Gly Leu Arg  
2540 2545 2550

Gln Lys Val Pro Ala Leu Gln Leu Arg Glu Ala Gly Ile Leu Ser  
2555 2560 2565

Ala Glu Glu Leu Gln Arg Leu Glu Gln Gly His Thr Thr Val Ala  
2570 2575 2580

Glu Leu Ser Gln Arg Glu Asp Val Arg Gln Tyr Leu Gln Gly Arg  
2585 2590 2595

Ser Ser Ile Ala Gly Leu Leu Leu Lys Pro Thr Asp Glu Lys Leu  
2600 2605 2610

Ser Val Tyr Thr Ala Leu Gln Arg Gln Leu Leu Ser Pro Gly Thr  
2615 2620 2625

Ala Leu Ile Leu Leu Glu Ala Gln Ala Ala Ser Gly Phe Leu Leu  
2630 2635 2640

Asp Pro Val Arg Asn Arg Arg Leu Thr Val Asn Glu Pro Val Lys  
2645 2650 2655



Glu	Gly	Val	Val	Gly	Pro	Glu	Leu	His	His	Lys	Leu	Leu	Ser	Ala
	2660					2665					2670			
Glu	Arg	Ala	Val	Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Thr	Gly	Glu	Gln
	2675					2680					2685			
Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Asp	Leu	Leu	Val	Arg	Asp
	2690					2695					2700			
His	Ala	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile
	2705					2710					2715			
Ile	Asp	Thr	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr
	2720					2725					2730			
Gln	Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Ser	Arg	Ile	Leu	Ala	Asp
	2735					2740					2745			
Pro	Gly	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu
	2750					2755					2760			
Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro
	2765					2770					2775			
Glu	Thr	Gly	Leu	His	Leu	Leu	Pro	Leu	Thr	Asp	Lys	Ala	Ala	Lys
	2780					2785					2790			
Gly	Gly	Glu	Leu	Val	Tyr	Thr	Asp	Thr	Glu	Ala	Arg	Asp	Val	Phe
	2795					2800					2805			
Glu	Lys	Ala	Thr	Val	Ser	Ala	Pro	Phe	Gly	Lys	Phe	Gln	Gly	Lys
	2810					2815					2820			
Thr	Val	Thr	Ile	Trp	Glu	Ile	Ile	Asn	Ser	Glu	Tyr	Phe	Thr	Ala
	2825					2830					2835			
Glu	Gln	Arg	Arg	Asp	Leu	Leu	Arg	Gln	Phe	Arg	Thr	Gly	Arg	Ile
	2840					2845					2850			
Thr	Val	Glu	Lys	Ile	Ile	Lys	Ile	Val	Ile	Thr	Val	Val	Glu	Glu
	2855					2860					2865			
Gln	Glu	Arg	Lys	Gly	Gln	Leu	Cys	Phe	Glu	Gly	Leu	Arg	Ala	Leu
	2870					2875					2880			
Val	Pro	Ala	Ala	Glu	Leu	Leu	Glu	Ser	Gly	Val	Ile	Ser	His	Glu
	2885					2890					2895			
Leu	Tyr	Gln	Gln	Leu	Gln	Arg	Gly	Glu	Arg	Ser	Val	Arg	Glu	Val
	2900					2905					2910			
Ala	Glu	Ala	Asp	Ser	Val	Arg	Arg	Ala	Leu	Arg	Gly	Ala	Ser	Val

2915

2920

2925

Ile Ala Gly Val Trp Leu Glu Glu Ala Gly Gln Lys Leu Ser Ile  
 2930 2935 2940

Tyr Glu Ala Leu Lys Lys Asp Leu Leu Gln Pro Asp Val Ala Val  
 2945 2950 2955

Ala Leu Leu Glu Ala Gln Ala Gly Thr Gly His Ile Ile Asp Pro  
 2960 2965 2970

Ala Thr Ser Ala Arg Leu Thr Val Asp Glu Ala Val Arg Ala Gly  
 2975 2980 2985

Leu Val Gly Pro Glu Leu His Glu Lys Leu Leu Ser Ala Glu Lys  
 2990 2995 3000

Ala Val Thr Gly Tyr Arg Asp Pro Tyr Ser Gly Gln Ser Val Ser  
 3005 3010 3015

Leu Phe Gln Ala Leu Lys Lys Gly Leu Ile Pro Arg Glu Gln Gly  
 3020 3025 3030

Leu Arg Leu Leu Asp Ala Gln Leu Ser Thr Gly Gly Met Val Asp  
 3035 3040 3045

Pro Ser Lys Ser His Arg Val Pro Leu Asp Val Ala Tyr Ala Arg  
 3050 3055 3060

Gly Tyr Leu Asp Lys Glu Thr Asn Arg Ala Leu Thr Ser Pro Arg  
 3065 3070 3075

Asn Asp Ala Arg Val Tyr Leu Asp Pro Ser Ser Gln Glu Pro Ala  
 3080 3085 3090

Thr Tyr Ser Gln Leu Gln Gln Arg Cys Arg Ala Asp Gln Leu Thr  
 3095 3100 3105

Gly Leu Ser Leu Leu Pro Val Ser Glu Lys Ala Val Arg Ala Arg  
 3110 3115 3120

Gln Glu Glu Val Tyr Ser Glu Leu Gln Ala Arg Glu Thr Leu Glu  
 3125 3130 3135

Lys Ala Arg Val Glu Val Pro Val Gly Gly Phe Lys Gly Arg Thr  
 3140 3145 3150

Met Thr Val Trp Glu Leu Ile Ser Ser Glu Tyr Phe Thr Gln Glu  
 3155 3160 3165

Gln Arg Gln Glu Leu Leu Arg Gln Phe Arg Thr Gly Lys Val Thr  
 3170 3175 3180

Val	Glu	Lys	Val	Ile	Arg	Ile	Val	Ile	Thr	Ile	Val	Glu	Glu	Val
	3185					3190					3195			
Glu	Thr	Gln	Arg	Gln	Glu	Arg	Leu	Ser	Phe	Ser	Gly	Leu	Arg	Ala
	3200					3205					3210			
Pro	Val	Pro	Ala	Ser	Glu	Leu	Leu	Ala	Ala	Lys	Ile	Leu	Ser	Arg
	3215					3220					3225			
Ala	Gln	Phe	Asp	Gln	Leu	Lys	Glu	Gly	Lys	Thr	Ser	Val	Lys	Asp
	3230					3235					3240			
Leu	Ser	Glu	Val	Gly	Ser	Val	Arg	Thr	Leu	Leu	Gln	Gly	Ser	Gly
	3245					3250					3255			
Cys	Leu	Ala	Gly	Val	Tyr	Leu	Glu	Asp	Ser	Lys	Glu	Lys	Val	Thr
	3260					3265					3270			
Ile	Tyr	Glu	Ala	Met	Arg	Arg	Gly	Leu	Leu	Arg	Pro	Ser	Thr	Ala
	3275					3280					3285			
Thr	Leu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Leu	Val	Asp
	3290					3295					3300			
Pro	Val	Arg	Asn	Gln	Arg	Leu	Tyr	Val	His	Glu	Ala	Val	Lys	Ala
	3305					3310					3315			
Gly	Val	Val	Gly	Pro	Glu	Leu	His	Glu	Lys	Leu	Leu	Ser	Ala	Glu
	3320					3325					3330			
Lys	Ala	Val	Thr	Gly	Tyr	Lys	Asp	Pro	Tyr	Ser	Gly	Thr	Thr	Ile
	3335					3340					3345			
Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Gly	Leu	Val	Leu	Arg	Glu	His
	3350					3355					3360			
Ala	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile
	3365					3370					3375			
Asp	Pro	Val	His	Ser	His	Arg	Leu	Pro	Val	Asp	Val	Ala	Tyr	Gln
	3380					3385					3390			
Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Ser	Arg	Ile	Leu	Ala	Asp	Pro
	3395					3400					3405			
Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn
	3410					3415					3420			
Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro	Glu
	3425					3430					3435			

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Thr	Gly	Leu	Arg	Leu	Leu	Pro	Leu	Lys	Gly	Ala	Glu	Lys	Thr	Glu
	3440					3445					3450			
Val	Val	Glu	Thr	Thr	Gln	Val	Tyr	Thr	Glu	Glu	Glu	Thr	Arg	Arg
	3455					3460					3465			
Ala	Phe	Glu	Glu	Thr	Gln	Ile	Asp	Ile	Pro	Gly	Gly	Gly	Ser	His
	3470					3475					3480			
Gly	Gly	Ser	Ser	Met	Ser	Leu	Trp	Glu	Val	Met	Gln	Ser	Asp	Met
	3485					3490					3495			
Ile	Pro	Glu	Asp	Gln	Arg	Ala	Arg	Leu	Met	Ala	Asp	Phe	Gln	Ala
	3500					3505					3510			
Gly	Arg	Val	Thr	Lys	Glu	Arg	Met	Ile	Ile	Ile	Ile	Ile	Glu	Ile
	3515					3520					3525			
Ile	Glu	Lys	Thr	Glu	Ile	Ile	Arg	Gln	Gln	Asn	Leu	Ala	Ser	Tyr
	3530					3535					3540			
Asp	Tyr	Val	Arg	Arg	Arg	Leu	Thr	Ala	Glu	Asp	Leu	Tyr	Glu	Ala
	3545					3550					3555			
Arg	Ile	Ile	Ser	Leu	Glu	Thr	Tyr	Asn	Leu	Phe	Arg	Glu	Gly	Thr
	3560					3565					3570			
Lys	Ser	Leu	Arg	Glu	Val	Leu	Glu	Met	Glu	Ser	Ala	Trp	Arg	Tyr
	3575					3580					3585			
Leu	Tyr	Gly	Thr	Gly	Ser	Val	Ala	Gly	Val	Tyr	Leu	Pro	Gly	Ser
	3590					3595					3600			
Arg	Gln	Thr	Leu	Thr	Ile	Tyr	Gln	Ala	Leu	Lys	Lys	Gly	Leu	Leu
	3605					3610					3615			
Ser	Ala	Glu	Val	Ala	Arg	Leu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr
	3620					3625					3630			
Gly	Phe	Leu	Leu	Asp	Pro	Val	Lys	Gly	Glu	Arg	Leu	Thr	Val	Asp
	3635					3640					3645			
Glu	Ala	Val	Arg	Lys	Gly	Leu	Val	Gly	Pro	Glu	Leu	His	Asp	Arg
	3650					3655					3660			
Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Arg	Asp	Pro	Tyr
	3665					3670					3675			
Thr	Glu	Gln	Thr	Ile	Ser	Leu	Phe	Gln	Ala	Met	Lys	Lys	Glu	Leu
	3680					3685					3690			

Ile Pro Ala Glu Glu Ala Leu Arg Leu Leu Asp Ala Gln Leu Ala  
 3695 3700 3705  
 Thr Gly Gly Ile Val Asp Pro Arg Leu Gly Phe His Leu Pro Leu  
 3710 3715 3720  
 Glu Val Ala Tyr Gln Arg Gly Tyr Leu Asn Lys Asp Thr His Asp  
 3725 3730 3735  
 Gln Leu Ser Glu Pro Ser Glu Val Arg Ser Tyr Val Asp Pro Ser  
 3740 3745 3750  
 Thr Asp Glu Arg Leu Ser Tyr Thr Gln Leu Leu Lys Arg Cys Arg  
 3755 3760 3765  
 Arg Asp Asp Gly Ser Gly Gln Met Leu Leu Pro Leu Ser Asp Ala  
 3770 3775 3780  
 Arg Arg Leu Thr Phe Arg Gly Leu Arg Lys Gln Ile Thr Val Glu  
 3785 3790 3795  
 Glu Leu Val Arg Ser Gln Val Met Asp Glu Ala Thr Ala Leu Gln  
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 Leu Gln Glu Gly Leu Thr Ser Ile Glu Glu Val Thr Lys Thr Leu  
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 Gln Lys Phe Leu Glu Gly Thr Ser Cys Ile Ala Gly Val Phe Val  
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 Asp Ala Thr Lys Glu Arg Leu Ser Val Tyr Gln Ala Met Lys Lys  
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 Gly Ile Ile Arg Pro Gly Thr Ala Phe Glu Leu Leu Glu Ala Gln  
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 Ala Ala Thr Gly Tyr Val Ile Asp Pro Ile Lys Gly Leu Lys Leu  
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 Thr Val Glu Glu Ala Val Arg Met Gly Ile Val Gly Pro Glu Phe  
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 Lys Asp Arg Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Lys  
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 Asp Pro Tyr Ser Gly Lys Leu Ile Ser Leu Phe Gln Ala Met Lys  
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 Lys Gly Leu Ile Leu Lys Asp His Gly Ile Arg Leu Leu Glu Ala  
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 Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Glu Glu Ser His Arg  
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 Met Asn Glu Ile Leu Thr Asp Pro Ser Asp Asp Thr Lys Gly Phe  
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 Phe Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Met  
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 Glu Met Ser Val Tyr Glu Ala Tyr Arg Lys Gly Leu Ile Asp His  
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 Glu Asn Leu Ile Asp Arg Ser Ala Leu Asp Gln Tyr Arg Ala Gly  
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 Thr Leu Ser Ile Thr Glu Phe Ala Asp Met Leu Ser Gly Asn Ala  
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 Gly Gly Phe Arg Ser Arg Ser Ser Val Gly Ser Ser Ser Ser  
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 Tyr Pro Ile Ser Pro Ala Val Ser Arg Thr Gln Leu Ala Ser Trp  
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 Ser Asp Pro Thr Glu Glu Thr Gly Pro Val Ala Gly Ile Leu Asp  
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 Thr Glu Thr Leu Glu Lys Val Ser Ile Thr Glu Ala Met His Arg  
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Ala Cys Thr Gly Gly Ile Ile Asp Pro Ser Thr Gly Glu Arg Phe  
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Pro Val Thr Glu Ala Val Asn Lys Gly Leu Val Asp Lys Ile Met  
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Val Asp Arg Ile Asn Leu Ala Gln Lys Ala Phe Cys Gly Phe Glu  
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Asp Pro Arg Thr Lys Thr Lys Met Ser Ala Ala Gln Ala Leu Lys  
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Lys Gly Trp Leu Tyr Tyr Glu Ala Gly Gln Arg Phe Leu Glu Val  
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Gln Tyr Leu Thr Gly Gly Leu Ile Glu Pro Asp Thr Pro Gly Arg  
4295 4300 4305

Val Pro Leu Asp Glu Ala Leu Gln Arg Gly Thr Val Asp Ala Arg  
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Thr Ala Gln Lys Leu Arg Asp Val Ser Ala Tyr Ser Lys Tyr Leu  
4325 4330 4335

Thr Cys Pro Lys Thr Lys Leu Lys Ile Ser Tyr Lys Asp Ala Leu  
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Asp Arg Ser Met Val Glu Glu Gly Thr Gly Leu Arg Leu Leu Glu  
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Ala Ala Ala Gln Ser Ser Lys Gly Tyr Tyr Ser Pro Tyr Ser Val  
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Ser Gly Ser Gly Ser Thr Thr Gly Ser Arg Thr Gly Ser Arg Thr  
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Gly Ser Arg Ala Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr Gly  
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Ser Gly Phe Ser Met Thr Phe Ser Ser Ser Ser Tyr Ser Ser Ser  
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<212> DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(5268)

&lt;400&gt; 85

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Met	Asn	Ser	Leu	Phe	Arg	Lys	Arg	Asn	Lys	Gly	Lys	Tyr	Ser	Pro	Thr	
1				5					10					15		

gtg	cag	acc	cgg	agc	atc	tct	aac	aag	gag	ctc	tcg	gag	ctg	atc	gag	96
Val	Gln	Thr	Arg	Ser	Ile	Ser	Asn	Lys	Glu	Leu	Ser	Glu	Leu	Ile	Glu	
			20					25					30			

cag	ctg	cag	aag	aat	gcc	gac	cag	gtg	gag	aag	aac	atc	gtg	gac	aca	144
Gln	Leu	Gln	Lys	Asn	Ala	Asp	Gln	Val	Glu	Lys	Asn	Ile	Val	Asp	Thr	
		35					40					45				

gag	gcc	aag	atg	cag	agt	gac	ctg	gct	cgg	ctg	cag	gag	ggt	cgg	cag	192
Glu	Ala	Lys	Met	Gln	Ser	Asp	Leu	Ala	Arg	Leu	Gln	Glu	Gly	Arg	Gln	
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cct	gag	cac	cgg	gac	gtg	acc	ctg	cag	aag	gtg	ttg	gac	tct	gag	aag	240
Pro	Glu	His	Arg	Asp	Val	Thr	Leu	Gln	Lys	Val	Leu	Asp	Ser	Glu	Lys	
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ctg	ctc	tat	gtg	cta	gag	gcg	gat	gcg	gcc	att	gcc	aag	cac	atg	aag	288
Leu	Leu	Tyr	Val	Leu	Glu	Ala	Asp	Ala	Ala	Ile	Ala	Lys	His	Met	Lys	
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cac	cca	cag	ggg	gac	atg	atc	gcc	gag	gat	atc	cgc	cag	ctg	aag	gag	336
His	Pro	Gln	Gly	Asp	Met	Ile	Ala	Glu	Asp	Ile	Arg	Gln	Leu	Lys	Glu	
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cgt	gtg	acc	aac	ctg	cgc	ggg	aaa	cac	aag	cag	atc	tac	agg	ctg	gcg	384
Arg	Val	Thr	Asn	Leu	Arg	Gly	Lys	His	Lys	Gln	Ile	Tyr	Arg	Leu	Ala	
		115					120					125				

gtg	aag	gaa	gtg	gat	cca	cag	gtc	aac	tgg	gcg	gca	ctg	gtg	gag	gag	432
Val	Lys	Glu	Val	Asp	Pro	Gln	Val	Asn	Trp	Ala	Ala	Leu	Val	Glu	Glu	
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Lys	Leu	Asp	Lys	Leu	Asn	Asn	Gln	Ser	Phe	Gly	Thr	Asp	Leu	Pro	Leu	
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Val	Asp	His	Gln	Val	Glu	Glu	His	Asn	Ile	Phe	His	Asn	Glu	Val	Lys	
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gcc	atc	ggg	ccc	cac	ctg	gcc	aag	gac	ggg	gac	aag	gag	cag	aac	agc	576
Ala	Ile	Gly	Pro	His	Leu	Ala	Lys	Asp	Gly	Asp	Lys	Glu	Gln	Asn	Ser	
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gaa	ctc	cgg	gcc	aag	tac	cag	aaa	ctg	ctg	gca	gca	tca	cag	gcc	cgg	624
Glu	Leu	Arg	Ala	Lys	Tyr	Gln	Lys	Leu	Leu	Ala	Ala	Ser	Gln	Ala	Arg	
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cag	cag	cac	ctg	agt	tcg	ctg	cag	gac	tac	atg	cag	cgc	tgc	acc	aat	672
Gln	Gln	His	Leu	Ser	Ser	Leu	Gln	Asp	Tyr	Met	Gln	Arg	Cys	Thr	Asn	
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Glu	Leu	Tyr	Trp	Leu	Asp	Gln	Gln	Ala	Lys	Gly	Arg	Met	Gln	Tyr	Asp	
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tgg	agt	gac	cgc	aac	ctc	gac	tac	ccc	agc	cgc	cgg	cgc	cag	tat	gag	768



Trp	Ser	Asp	Arg	Asn 245	Leu	Asp	Tyr	Pro	Ser 250	Arg	Arg	Arg	Gln	Tyr 255	Glu	
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Asn	Phe	Ile	Asn 260	Arg	Asn	Leu	Glu	Ala 265	Lys	Glu	Glu	Arg	Ile 270	Asn	Lys	
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Leu	His	Ser 275	Glu	Gly	Asp	Gln	Leu 280	Leu	Ala	Ala	Glu	His 285	Pro	Gly	Arg	
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Asn	Ser 290	Ile	Glu	Ala	His	Met 295	Glu	Ala	Val	His	Ala 300	Asp	Trp	Lys	Glu	
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Tyr 305	Leu	Asn	Leu	Leu	Ile 310	Cys	Glu	Glu	Ser	His 315	Leu	Lys	Tyr	Met	Glu 320	
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Pro	Ile	Pro	Val	Glu 405	Ala	Leu	Cys	Asp	Phe 410	Glu	Gly	Glu	Gln	Gly 415	Leu	
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Ile	Ser	Arg	Gly 420	Tyr	Ser	Tyr	Thr	Leu 425	Gln	Lys	Asn	Asn	Gly 430	Glu	Ser	
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Trp	Glu	Leu 435	Met	Asp	Ser	Ala	Gly 440	Asn	Lys	Leu	Ile	Ala 445	Pro	Ala	Val	
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Cys	Phe 450	Val	Ile	Pro	Pro	Thr 455	Asp	Pro	Glu	Ala	Leu 460	Ala	Leu	Ala	Asp	
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Ser 465	Leu	Gly	Ser	Gln	Tyr 470	Arg	Ser	Val	Arg	Gln 475	Lys	Ala	Ala	Gly	Ser 480	
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Gly	Asp	Ala	Ser 500	Asp	Leu	Gln	Gly	Arg 505	Gln	Leu	Leu	Ala	Gly 510	Leu	Asp	
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Lys	Val	Ala	Ser	Asp	Leu	Asp	Arg	Gln	Glu	Lys	Ala	Ile	Thr	Gly	Ile	

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ctg Leu	cgg Arg 530	cca Pro	cca Pro	ctg Leu	gag Glu	caa Gln 535	ggc Gly	cgg Arg	gct Ala	gtg Val	cag Gln 540	gac Asp	agt Ser	gcc Ala	gag Glu	1632
cgg Arg 545	gcc Ala	aag Lys	gac Asp	ctc Leu	aag Lys 550	aac Asn	atc Ile	acc Thr	aac Asn	gag Glu 555	cta Leu	ctg Leu	cgg Arg	att Ile	gaa Glu 560	1680
cct Pro	gag Glu	aag Lys	acg Thr	cgg Arg 565	agc Ser	acg Thr	gct Ala	gag Glu	ggc Gly 570	gaa Glu	gcc Ala	ttc Phe	atc Ile	cag Gln 575	gcc Ala	1728
ctc Leu	cca Pro	ggc Gly	agt Ser 580	ggc Gly	acc Thr	aca Thr	ccc Pro	ctg Leu 585	ctg Leu	agg Arg	acc Thr	cgg Arg	gtg Val 590	gag Glu	gac Asp	1776
acc Thr	aac Asn	cgg Arg 595	aaa Lys	tac Tyr	gag Glu	cac His	ctc Leu 600	ctg Leu	cag Gln	ctg Leu	ctg Leu	gac Asp 605	ttg Leu	gcc Ala	cag Gln	1824
gag Glu	aag Lys 610	gtt Val	gat Asp	gtg Val	gcc Ala	aac Asn 615	cgc Arg	ctg Leu	gag Glu	aag Lys	agc Ser 620	ctg Leu	cag Gln	cag Gln	agc Ser	1872
tgg Trp 625	gag Glu	ttg Leu	ctg Leu	gcc Ala	aca Thr 630	cac His	gag Glu	aac Asn	cat His	ctg Leu 635	aat Asn	cag Gln	gat Asp	gac Asp	aca Thr 640	1920
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gcc Ala	atg Met	gcc Ala	tgt Cys 660	gag Glu	tta Leu	cag Gln	gcc Ala	cag Gln 665	aag Lys	tcc Ser	ctc Leu	ctg Leu	ggg Gly 670	gag Glu	gtg Val	2016
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cgc Arg	ttc Phe 690	cag Gln	gag Glu	cac His	tgc Cys	ccg Pro 695	gac Asp	ctg Leu	gag Glu	cgc Arg	cag Gln 700	gag Glu	gcc Ala	gag Glu	gtg Val	2112
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cgc Arg	ggc Gly	cat His	gac Asp 740	cac His	gtg Val	ctg Leu	cag Gln	ttc Phe 745	cta Leu	gtc Val	agc Ser	atc Ile	ccc Pro 750	agt Ser	tac Tyr	2256
gag Glu	ccc Pro	cag Gln 755	gag Glu	aca Thr	gac Asp	agc Ser	ctc Leu 760	agc Ser	cag Gln	atg Met	gag Glu	acc Thr 765	aag Lys	ctg Leu	aag Lys	2304
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Gly	Arg	Ser	Ser	His	Val	Ser	Lys	Arg	Ala	Arg	Leu	Gln	Ser	Pro	Ala	
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Thr	Lys	Val	Lys	Glu	Glu	Glu	Ala	Ala	Leu	Ala	Ala	Lys	Phe	Thr	Glu	
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Asn	Leu	Leu	Arg	Gln	Gln	Pro	Glu	Val	Glu	Val	Thr	His	Glu	Thr	Leu	
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Gln	Arg	Asn	Arg	Pro	Asp	Ser	Gly	Val	Glu	Glu	Ala	Trp	Lys	Ile	Arg	
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Lys	Glu	Leu	Asp	Glu	Glu	Thr	Glu	Arg	Arg	Arg	Gln	Leu	Glu	Asn	Glu	
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Val	Lys	Ser	Thr	Gln	Glu	Glu	Ile	Trp	Thr	Leu	Arg	Asn	Gln	Gly	Pro	
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Lys	Gly	Ala	Arg	Glu	Ala	Glu	Val	Leu	Leu	Leu	Gln	Gln	Arg	Val		
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Ala	Ala	Leu	Ala	Glu	Glu	Lys	Ser	Arg	Ala	Gln	Glu	Lys	Val	Thr		
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Glu	Lys	Glu	Val	Val	Lys	Leu	Gln	Asn	Asp	Pro	Gln	Leu	Glu	Ala		
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gag Glu	gtc Val 1130	agc Ser	gat Asp	ctc Leu	acc Thr	cgc Arg 1135	caa Gln	tat Tyr	gag Glu	gac Asp	gag Glu 1140	gct Ala	gcc Ala	aag Lys	3429
gct Ala	cgc Arg 1145	gct Ala	agc Ser	cag Gln	agg Arg	gag Glu 1150	aag Lys	acg Thr	gag Glu	ctg Leu	ctc Leu 1155	cga Arg	aag Lys	ata Ile	3474
tgg Trp	gcc Ala 1160	ttg Leu	gag Glu	gag Glu	gag Glu	aac Asn 1165	gcc Ala	aaa Lys	gtg Val	gtg Val	gtg Val 1170	cag Gln	gag Glu	aag Lys	3519
gtg Val	cgg Arg 1175	gag Glu	atc Ile	gtg Val	cgg Arg	cca Pro 1180	gac Asp	ccc Pro	aag Lys	gcg Ala	gaa Glu 1185	agt Ser	gaa Glu	gtg Val	3564
gcg Ala	aac Asn 1190	ctc Leu	cgc Arg	ctg Leu	gag Glu	ctt Leu 1195	gtg Val	gag Glu	cag Gln	gag Glu	cga Arg 1200	aag Lys	tac Tyr	cgg Arg	3609
ggt Gly	gcc Ala 1205	gag Glu	gag Glu	cag Gln	ctc Leu	cgg Arg 1210	agc Ser	tac Tyr	cag Gln	agt Ser	gag Glu 1215	ctg Leu	gag Glu	gcc Ala	3654
ctc Leu	agg Arg 1220	agg Arg	cga Arg	ggc Gly	ccc Pro	cag Gln 1225	gtg Val	gaa Glu	gtc Val	aaa Lys	gag Glu 1230	gtg Val	act Thr	aag Lys	3699
gaa Glu	gtc Val 1235	att Ile	aag Lys	tac Tyr	aag Lys	act Thr 1240	gac Asp	cct Pro	gag Glu	atg Met	gag Glu 1245	aag Lys	gag Glu	ctt Leu	3744
cag Gln	cgg Arg 1250	ctc Leu	agg Arg	gag Glu	gag Glu	atc Ile 1255	gtg Val	gac Asp	aag Lys	acc Thr	aga Arg 1260	ctg Leu	atc Ile	gaa Glu	3789
agg Arg	tgt Cys 1265	gat Asp	tta Leu	gag Glu	atc Ile	tac Tyr 1270	cag Gln	ctg Leu	aaa Lys	aag Lys	gaa Glu 1275	atc Ile	cag Gln	gcc Ala	3834
ctg Leu	aaa Lys 1280	gac Asp	acc Thr	aaa Lys	ccc Pro	cag Gln 1285	gtc Val	cag Gln	acc Thr	aaa Lys	gag Glu 1290	gtg Val	gtc Val	cag Gln	3879
gag Glu	atc Ile 1295	ctc Leu	caa Gln	ttc Phe	caa Gln	gaa Glu 1300	gac Asp	cct Pro	caa Gln	acc Thr	aag Lys 1305	gag Glu	gag Glu	gtg Val	3924
gcg Ala	tct Ser 1310	ctg Leu	agg Arg	gca Ala	aag Lys	ctc Leu 1315	tca Ser	gag Glu	gag Glu	cag Gln	aag Lys 1320	aaa Lys	caa Gln	gtg Val	3969
gat	ctg	gag	agg	gaa	aga	gct	tcc	cag	gaa	gag	cag	atc	gcc	cgg	4014

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Asp	Leu	Glu	Arg	Glu	Arg	Ala	Ser	Gln	Glu	Glu	Gln	Ile	Ala	Arg		
	1325					1330					1335					
aaa	gag	gag	gag	ctc	tcg	cgg	gtg	aag	gaa	agg	gtg	gtg	cag	cag		4059
Lys	Glu	Glu	Glu	Leu	Ser	Arg	Val	Lys	Glu	Arg	Val	Val	Gln	Gln		
	1340					1345					1350					
gag	gtg	gtc	agg	tat	gag	gag	gag	cca	ggc	ctg	cgg	gcc	gag	gcg		4104
Glu	Val	Val	Arg	Tyr	Glu	Glu	Glu	Pro	Gly	Leu	Arg	Ala	Glu	Ala		
	1355					1360					1365					
agc	gcc	ttt	gcc	gag	agc	atc	gat	gtg	gag	ctg	cgg	cag	att	gac		4149
Ser	Ala	Phe	Ala	Glu	Ser	Ile	Asp	Val	Glu	Leu	Arg	Gln	Ile	Asp		
	1370					1375					1380					
aag	ctg	cgg	gca	gag	ctg	cgg	cgg	ctg	cag	cgc	cgg	cgc	acc	gag		4194
Lys	Leu	Arg	Ala	Glu	Leu	Arg	Arg	Leu	Gln	Arg	Arg	Arg	Thr	Glu		
	1385					1390					1395					
ctt	gag	cgg	cag	ctg	gag	gag	cta	gag	cgc	gag	cgg	cag	gcc	cgc		4239
Leu	Glu	Arg	Gln	Leu	Glu	Glu	Leu	Glu	Arg	Glu	Arg	Gln	Ala	Arg		
	1400					1405					1410					
agg	gag	gcc	gag	cgc	gag	gta	cag	cgg	ttg	cag	cag	cgg	ctg	gca		4284
Arg	Glu	Ala	Glu	Arg	Glu	Val	Gln	Arg	Leu	Gln	Gln	Arg	Leu	Ala		
	1415					1420					1425					
gcg	ctg	gag	cag	gaa	gaa	gct	gag	gcc	cgt	gag	aag	gta	acc	cat		4329
Ala	Leu	Glu	Gln	Glu	Glu	Ala	Glu	Ala	Arg	Glu	Lys	Val	Thr	His		
	1430					1435					1440					
acg	cag	aag	gtg	gtg	ctg	cag	cag	gac	ccg	cag	cag	gcg	cga	gag		4374
Thr	Gln	Lys	Val	Val	Leu	Gln	Gln	Asp	Pro	Gln	Gln	Ala	Arg	Glu		
	1445					1450					1455					
cat	gcc	ctg	ctc	cga	ctc	cag	ctg	gaa	gaa	gag	cag	cac	cgg	cgg		4419
His	Ala	Leu	Leu	Arg	Leu	Gln	Leu	Glu	Glu	Glu	Gln	His	Arg	Arg		
	1460					1465					1470					
cag	ctc	ctg	gag	ggg	gag	ctc	gag	acc	ctc	cgg	agg	aaa	ctg	gct		4464
Gln	Leu	Leu	Glu	Gly	Glu	Leu	Glu	Thr	Leu	Arg	Arg	Lys	Leu	Ala		
	1475					1480					1485					
gca	ctg	gag	aag	gcg	gag	gtc	aag	gag	aag	gtg	gtg	ctc	tcc	gag		4509
Ala	Leu	Glu	Lys	Ala	Glu	Val	Lys	Glu	Lys	Val	Val	Leu	Ser	Glu		
	1490					1495					1500					
agt	gtc	cag	gtg	gag	aag	ggc	gac	acc	gag	caa	gag	atc	cag	agg		4554
Ser	Val	Gln	Val	Glu	Lys	Gly	Asp	Thr	Glu	Gln	Glu	Ile	Gln	Arg		
	1505					1510					1515					
ctc	aag	agc	agc	ctg	gag	gag	gag	agc	cgc	agc	aag	cgc	gag	ctg		4599
Leu	Lys	Ser	Ser	Leu	Glu	Glu	Glu	Ser	Arg	Ser	Lys	Arg	Glu	Leu		
	1520					1525					1530					
gac	gtc	gag	gtg	agc	cgg	ctg	gaa	gcc	agg	ctt	tcg	gag	ctg	gaa		4644
Asp	Val	Glu	Val	Ser	Arg	Leu	Glu	Ala	Arg	Leu	Ser	Glu	Leu	Glu		
	1535					1540					1545					
ttc	cat	aac	tcc	aag	tca	tcc	aag	gaa	cta	gac	ttt	ctg	agg	gaa		4689
Phe	His	Asn	Ser	Lys	Ser	Ser	Lys	Glu	Leu	Asp	Phe	Leu	Arg	Glu		
	1550					1555					1560					
gag	aac	cac	aaa	tta	cag	ctg	gag	agg	caa	aac	ctg	cag	ctg	gag		4734
Glu	Asn	His	Lys	Leu	Gln	Leu	Glu	Arg	Gln	Asn	Leu	Gln	Leu	Glu		
	1565					1570					1575					
acc	cga	agg	ctc	caa	tcg	gaa	atc	aac	atg	gca	gcg	acg	gaa	aca		4779
Thr	Arg	Arg	Leu	Gln	Ser	Glu	Ile	Asn	Met	Ala	Ala	Thr	Glu	Thr		

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1580	1585	1590	
cga gac ctg cgg aac atg acc gtg gcg gac tct ggg acc aac cat	Arg Asp Leu Arg Asn Met Thr Val Ala Asp Ser Gly Thr Asn His	1595 1600 1605	4824
gac tcc aga ctg tgg tcc ctg gag agg gaa ctg gat gac ctc aag	Asp Ser Arg Leu Trp Ser Leu Glu Arg Glu Leu Asp Asp Leu Lys	1610 1615 1620	4869
agg ctc tcc aag gac aaa gac ctc gag atc gac gag ctg cag aag	Arg Leu Ser Lys Asp Lys Asp Leu Glu Ile Asp Glu Leu Gln Lys	1625 1630 1635	4914
cgc ctg ggc tcc gtg gcc gtc aag cgg gag cag cgg gag aac cac	Arg Leu Gly Ser Val Ala Val Lys Arg Glu Gln Arg Glu Asn His	1640 1645 1650	4959
ctg cgg cgc tcc atc gta gtc atc cac cct gac aca ggc cgc gag	Leu Arg Arg Ser Ile Val Val Ile His Pro Asp Thr Gly Arg Glu	1655 1660 1665	5004
ctg tcc ccg gag gaa gcc cac cgt gcc ggg ctc att gac tgg aac	Leu Ser Pro Glu Glu Ala His Arg Ala Gly Leu Ile Asp Trp Asn	1670 1675 1680	5049
atg ttc gtg aaa ctc aga agc cag gag tgc gac tgg gag gag atc	Met Phe Val Lys Leu Arg Ser Gln Glu Cys Asp Trp Glu Glu Ile	1685 1690 1695	5094
tca gtg aag ggt ccc aat ggg gag tcc tca gtg ata cac gac agg	Ser Val Lys Gly Pro Asn Gly Glu Ser Ser Val Ile His Asp Arg	1700 1705 1710	5139
aag tct ggc aag aag ttc tcc atc gaa gag gcc ctg cag agt ggc	Lys Ser Gly Lys Lys Phe Ser Ile Glu Glu Ala Leu Gln Ser Gly	1715 1720 1725	5184
agg ctg acc cct gct cag tat gac cgc tat gtc aac aag gat atg	Arg Leu Thr Pro Ala Gln Tyr Asp Arg Tyr Val Asn Lys Asp Met	1730 1735 1740	5229
tcc atc cag gag ctg gcg gtc ttg gta tct ggg cag aag	Ser Ile Gln Glu Leu Ala Val Leu Val Ser Gly Gln Lys	1745 1750 1755	5268

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 <212> PRT  
 <213> Homo sapiens

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Val Gln Thr Arg Ser Ile Ser Asn Lys Glu Leu Ser Glu Leu Ile Glu  
 20 25 30

Gln Leu Gln Lys Asn Ala Asp Gln Val Glu Lys Asn Ile Val Asp Thr  
 35 40 45

Glu Ala Lys Met Gln Ser Asp Leu Ala Arg Leu Gln Glu Gly Arg Gln  
 50 55 60

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Pro Glu His Arg Asp Val Thr Leu Gln Lys Val Leu Asp Ser Glu Lys  
65 70 75 80

Leu Leu Tyr Val Leu Glu Ala Asp Ala Ala Ile Ala Lys His Met Lys  
85 90 95

His Pro Gln Gly Asp Met Ile Ala Glu Asp Ile Arg Gln Leu Lys Glu  
100 105 110

Arg Val Thr Asn Leu Arg Gly Lys His Lys Gln Ile Tyr Arg Leu Ala  
115 120 125

Val Lys Glu Val Asp Pro Gln Val Asn Trp Ala Ala Leu Val Glu Glu  
130 135 140

Lys Leu Asp Lys Leu Asn Asn Gln Ser Phe Gly Thr Asp Leu Pro Leu  
145 150 155 160

Val Asp His Gln Val Glu Glu His Asn Ile Phe His Asn Glu Val Lys  
165 170 175

Ala Ile Gly Pro His Leu Ala Lys Asp Gly Asp Lys Glu Gln Asn Ser  
180 185 190

Glu Leu Arg Ala Lys Tyr Gln Lys Leu Leu Ala Ala Ser Gln Ala Arg  
195 200 205

Gln Gln His Leu Ser Ser Leu Gln Asp Tyr Met Gln Arg Cys Thr Asn  
210 215 220

Glu Leu Tyr Trp Leu Asp Gln Gln Ala Lys Gly Arg Met Gln Tyr Asp  
225 230 235 240

Trp Ser Asp Arg Asn Leu Asp Tyr Pro Ser Arg Arg Arg Gln Tyr Glu  
245 250 255

Asn Phe Ile Asn Arg Asn Leu Glu Ala Lys Glu Glu Arg Ile Asn Lys  
260 265 270

Leu His Ser Glu Gly Asp Gln Leu Leu Ala Ala Glu His Pro Gly Arg  
275 280 285

Asn Ser Ile Glu Ala His Met Glu Ala Val His Ala Asp Trp Lys Glu  
290 295 300

Tyr Leu Asn Leu Leu Ile Cys Glu Glu Ser His Leu Lys Tyr Met Glu  
305 310 315 320

Asp Tyr His Gln Phe His Glu Asp Val Lys Asp Ala Gln Glu Leu Leu  
325 330 335

Arg Lys Val Asp Ser Asp Leu Asn Gln Lys Tyr Gly Pro Asp Phe Lys  
340 345 350

Asp Arg Tyr Gln Ile Glu Leu Leu Arg Glu Leu Asp Asp Gln Glu  
355 360 365

Lys Val Leu Asp Lys Tyr Glu Asp Val Val Gln Gly Leu Gln Lys Arg  
370 375 380

Gly Gln Gln Val Val Pro Leu Lys Tyr Arg Arg Glu Thr Pro Leu Lys  
385 390 395 400

Pro Ile Pro Val Glu Ala Leu Cys Asp Phe Glu Gly Glu Gln Gly Leu  
405 410 415

Ile Ser Arg Gly Tyr Ser Tyr Thr Leu Gln Lys Asn Asn Gly Glu Ser  
420 425 430

Trp Glu Leu Met Asp Ser Ala Gly Asn Lys Leu Ile Ala Pro Ala Val  
435 440 445

Cys Phe Val Ile Pro Pro Thr Asp Pro Glu Ala Leu Ala Leu Ala Asp  
450 455 460

Ser Leu Gly Ser Gln Tyr Arg Ser Val Arg Gln Lys Ala Ala Gly Ser  
465 470 475 480

Lys Arg Thr Leu Gln Gln Arg Tyr Glu Val Leu Lys Thr Glu Asn Pro  
485 490 495

Gly Asp Ala Ser Asp Leu Gln Gly Arg Gln Leu Leu Ala Gly Leu Asp  
500 505 510

Lys Val Ala Ser Asp Leu Asp Arg Gln Glu Lys Ala Ile Thr Gly Ile  
515 520 525

Leu Arg Pro Pro Leu Glu Gln Gly Arg Ala Val Gln Asp Ser Ala Glu  
530 535 540

Arg Ala Lys Asp Leu Lys Asn Ile Thr Asn Glu Leu Leu Arg Ile Glu  
545 550 555 560

Pro Glu Lys Thr Arg Ser Thr Ala Glu Gly Glu Ala Phe Ile Gln Ala  
565 570 575

Leu Pro Gly Ser Gly Thr Thr Pro Leu Leu Arg Thr Arg Val Glu Asp  
580 585 590

Thr Asn Arg Lys Tyr Glu His Leu Leu Gln Leu Leu Asp Leu Ala Gln  
595 600 605

Glu Lys Val Asp Val Ala Asn Arg Leu Glu Lys Ser Leu Gln Gln Ser  
Seite 492



610

615

620

Trp Glu Leu Leu Ala Thr His Glu Asn His Leu Asn Gln Asp Asp Thr  
625 630 635 640

Val Pro Glu Ser Ser Arg Val Leu Asp Ser Lys Gly Gln Glu Leu Ala  
645 650 655

Ala Met Ala Cys Glu Leu Gln Ala Gln Lys Ser Leu Leu Gly Glu Val  
660 665 670

Glu Gln Asn Leu Gln Ala Ala Lys Gln Cys Ser Ser Thr Leu Ala Ser  
675 680 685

Arg Phe Gln Glu His Cys Pro Asp Leu Glu Arg Gln Glu Ala Glu Val  
690 695 700

His Lys Leu Gly Gln Arg Phe Asn Asn Leu Arg Gln Gln Val Glu Arg  
705 710 715 720

Arg Ala Gln Ser Leu Gln Ser Ala Lys Ala Ala Tyr Glu His Phe His  
725 730 735

Arg Gly His Asp His Val Leu Gln Phe Leu Val Ser Ile Pro Ser Tyr  
740 745 750

Glu Pro Gln Glu Thr Asp Ser Leu Ser Gln Met Glu Thr Lys Leu Lys  
755 760 765

Asn Gln Lys Asn Leu Leu Asp Glu Ile Ala Ser Arg Glu Gln Glu Val  
770 775 780

Gln Lys Ile Cys Ala Asn Ser Gln Gln Tyr Gln Gln Ala Val Lys Asp  
785 790 795 800

Tyr Glu Leu Glu Ala Glu Lys Leu Arg Ser Leu Leu Asp Leu Glu Asn  
805 810 815

Gly Arg Ser Ser His Val Ser Lys Arg Ala Arg Leu Gln Ser Pro Ala  
820 825 830

Thr Lys Val Lys Glu Glu Glu Ala Ala Leu Ala Ala Lys Phe Thr Glu  
835 840 845

Val Tyr Ala Ile Asn Arg Gln Arg Leu Gln Asn Leu Glu Phe Ala Leu  
850 855 860

Asn Leu Leu Arg Gln Gln Pro Glu Val Glu Val Thr His Glu Thr Leu  
865 870 875 880

Gln Arg Asn Arg Pro Asp Ser Gly Val Glu Glu Ala Trp Lys Ile Arg  
885 890 895

Lys Glu Leu Asp Glu Glu Thr Glu Arg Arg Arg Gln Leu Glu Asn Glu  
                   900                                  905                                  910  
 Val Lys Ser Thr Gln Glu Glu Ile Trp Thr Leu Arg Asn Gln Gly Pro  
                   915                                  920                                  925  
 Gln Glu Ser Val Val Arg Lys Glu Val Leu Lys Lys Val Pro Asp Pro  
                   930                                  935                                  940  
 Val Leu Glu Glu Ser Phe Gln Gln Leu Gln Arg Thr Leu Ala Glu Glu  
   945                                  950                                  955                                  960  
 Gln His Lys Asn Gln Leu Leu Gln Glu Glu Leu Glu Ala Leu Gln Leu  
                   965                                  970                                  975  
 Gln Leu Arg Ala Leu Glu Gln Glu Thr Arg Asp Gly Gly Gln Glu Tyr  
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 Val Val Lys Glu Val Leu Arg Ile Glu Pro Asp Arg Ala Gln Ala Asp  
                   995                                 1000                                 1005  
 Glu Val Leu Gln Leu Arg Glu Glu Leu Glu Ala Leu Arg Arg Gln  
                  1010                                 1015                                 1020  
 Lys Gly Ala Arg Glu Ala Glu Val Leu Leu Leu Gln Gln Arg Val  
                  1025                                 1030                                 1035  
 Ala Ala Leu Ala Glu Glu Lys Ser Arg Ala Gln Glu Lys Val Thr  
                  1040                                 1045                                 1050  
 Glu Lys Glu Val Val Lys Leu Gln Asn Asp Pro Gln Leu Glu Ala  
                  1055                                 1060                                 1065  
 Glu Tyr Gln Gln Leu Gln Glu Asp His Gln Arg Gln Asp Gln Leu  
                  1070                                 1075                                 1080  
 Arg Glu Lys Gln Glu Glu Glu Leu Ser Phe Leu Gln Asp Lys Leu  
                  1085                                 1090                                 1095  
 Lys Arg Leu Glu Lys Glu Arg Ala Met Ala Glu Gly Lys Ile Thr  
                  1100                                 1105                                 1110  
 Val Lys Glu Val Leu Lys Val Glu Lys Asp Ala Ala Thr Glu Arg  
                  1115                                 1120                                 1125  
 Glu Val Ser Asp Leu Thr Arg Gln Tyr Glu Asp Glu Ala Ala Lys  
                  1130                                 1135                                 1140  
 Ala Arg Ala Ser Gln Arg Glu Lys Thr Glu Leu Leu Arg Lys Ile  
                  1145                                 1150                                 1155

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Trp	Ala	Leu	Glu	Glu	Glu	Asn	Ala	Lys	Val	Val	Val	Gln	Glu	Lys
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Val	Arg	Glu	Ile	Val	Arg	Pro	Asp	Pro	Lys	Ala	Glu	Ser	Glu	Val
	1175					1180					1185			
Ala	Asn	Leu	Arg	Leu	Glu	Leu	Val	Glu	Gln	Glu	Arg	Lys	Tyr	Arg
	1190					1195					1200			
Gly	Ala	Glu	Glu	Gln	Leu	Arg	Ser	Tyr	Gln	Ser	Glu	Leu	Glu	Ala
	1205					1210					1215			
Leu	Arg	Arg	Arg	Gly	Pro	Gln	Val	Glu	Val	Lys	Glu	Val	Thr	Lys
	1220					1225					1230			
Glu	Val	Ile	Lys	Tyr	Lys	Thr	Asp	Pro	Glu	Met	Glu	Lys	Glu	Leu
	1235					1240					1245			
Gln	Arg	Leu	Arg	Glu	Glu	Ile	Val	Asp	Lys	Thr	Arg	Leu	Ile	Glu
	1250					1255					1260			
Arg	Cys	Asp	Leu	Glu	Ile	Tyr	Gln	Leu	Lys	Lys	Glu	Ile	Gln	Ala
	1265					1270					1275			
Leu	Lys	Asp	Thr	Lys	Pro	Gln	Val	Gln	Thr	Lys	Glu	Val	Val	Gln
	1280					1285					1290			
Glu	Ile	Leu	Gln	Phe	Gln	Glu	Asp	Pro	Gln	Thr	Lys	Glu	Glu	Val
	1295					1300					1305			
Ala	Ser	Leu	Arg	Ala	Lys	Leu	Ser	Glu	Glu	Gln	Lys	Lys	Gln	Val
	1310					1315					1320			
Asp	Leu	Glu	Arg	Glu	Arg	Ala	Ser	Gln	Glu	Glu	Gln	Ile	Ala	Arg
	1325					1330					1335			
Lys	Glu	Glu	Glu	Leu	Ser	Arg	Val	Lys	Glu	Arg	Val	Val	Gln	Gln
	1340					1345					1350			
Glu	Val	Val	Arg	Tyr	Glu	Glu	Glu	Pro	Gly	Leu	Arg	Ala	Glu	Ala
	1355					1360					1365			
Ser	Ala	Phe	Ala	Glu	Ser	Ile	Asp	Val	Glu	Leu	Arg	Gln	Ile	Asp
	1370					1375					1380			
Lys	Leu	Arg	Ala	Glu	Leu	Arg	Arg	Leu	Gln	Arg	Arg	Arg	Thr	Glu
	1385					1390					1395			
Leu	Glu	Arg	Gln	Leu	Glu	Glu	Leu	Glu	Arg	Glu	Arg	Gln	Ala	Arg
	1400					1405					1410			

Arg	Glu	Ala	Glu	Arg	Glu	Val	Gln	Arg	Leu	Gln	Gln	Arg	Leu	Ala
	1415					1420							1425	
Ala	Leu	Glu	Gln	Glu	Glu	Ala	Glu	Ala	Arg	Glu	Lys	Val	Thr	His
	1430					1435					1440			
Thr	Gln	Lys	Val	Val	Leu	Gln	Gln	Asp	Pro	Gln	Gln	Ala	Arg	Glu
	1445					1450					1455			
His	Ala	Leu	Leu	Arg	Leu	Gln	Leu	Glu	Glu	Glu	Gln	His	Arg	Arg
	1460					1465					1470			
Gln	Leu	Leu	Glu	Gly	Glu	Leu	Glu	Thr	Leu	Arg	Arg	Lys	Leu	Ala
	1475					1480					1485			
Ala	Leu	Glu	Lys	Ala	Glu	Val	Lys	Glu	Lys	Val	Val	Leu	Ser	Glu
	1490					1495					1500			
Ser	Val	Gln	Val	Glu	Lys	Gly	Asp	Thr	Glu	Gln	Glu	Ile	Gln	Arg
	1505					1510					1515			
Leu	Lys	Ser	Ser	Leu	Glu	Glu	Glu	Ser	Arg	Ser	Lys	Arg	Glu	Leu
	1520					1525					1530			
Asp	Val	Glu	Val	Ser	Arg	Leu	Glu	Ala	Arg	Leu	Ser	Glu	Leu	Glu
	1535					1540					1545			
Phe	His	Asn	Ser	Lys	Ser	Ser	Lys	Glu	Leu	Asp	Phe	Leu	Arg	Glu
	1550					1555					1560			
Glu	Asn	His	Lys	Leu	Gln	Leu	Glu	Arg	Gln	Asn	Leu	Gln	Leu	Glu
	1565					1570					1575			
Thr	Arg	Arg	Leu	Gln	Ser	Glu	Ile	Asn	Met	Ala	Ala	Thr	Glu	Thr
	1580					1585					1590			
Arg	Asp	Leu	Arg	Asn	Met	Thr	Val	Ala	Asp	Ser	Gly	Thr	Asn	His
	1595					1600					1605			
Asp	Ser	Arg	Leu	Trp	Ser	Leu	Glu	Arg	Glu	Leu	Asp	Asp	Leu	Lys
	1610					1615					1620			
Arg	Leu	Ser	Lys	Asp	Lys	Asp	Leu	Glu	Ile	Asp	Glu	Leu	Gln	Lys
	1625					1630					1635			
Arg	Leu	Gly	Ser	Val	Ala	Val	Lys	Arg	Glu	Gln	Arg	Glu	Asn	His
	1640					1645					1650			
Leu	Arg	Arg	Ser	Ile	Val	Val	Ile	His	Pro	Asp	Thr	Gly	Arg	Glu
	1655					1660					1665			
Leu	Ser	Pro	Glu	Glu	Ala	His	Arg	Ala	Gly	Leu	Ile	Asp	Trp	Asn

1670

1675

1680

Met Phe Val Lys Leu Arg Ser Gln Glu Cys Asp Trp Glu Glu Ile  
 1685 1690 1695

Ser Val Lys Gly Pro Asn Gly Glu Ser Ser Val Ile His Asp Arg  
 1700 1705 1710

Lys Ser Gly Lys Lys Phe Ser Ile Glu Glu Ala Leu Gln Ser Gly  
 1715 1720 1725

Arg Leu Thr Pro Ala Gln Tyr Asp Arg Tyr Val Asn Lys Asp Met  
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Ser Ile Gln Glu Leu Ala Val Leu Val Ser Gly Gln Lys  
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 Val Gln Thr Arg Ser Ile Ser Asn Lys Glu Leu Ser Asp Leu Ile Glu  
 20 25 30  
 cag ctg cag aag aat gca gac cag gtg gaa agg aac att gtg gac acc 144  
 Gln Leu Gln Lys Asn Ala Asp Gln Val Glu Arg Asn Ile Val Asp Thr  
 35 40 45  
 gag gcc aag atg cag agc gac ttg gcc cgg atg caa gag ggg cag ctc 192  
 Glu Ala Lys Met Gln Ser Asp Leu Ala Arg Met Gln Glu Gly Gln Leu  
 50 55 60  
 cct gag cac cgg gac gcg gcc ctg cag aac gtg tct gac tca gaa aag 240  
 Pro Glu His Arg Asp Ala Leu Gln Asn Val Ser Asp Ser Glu Lys  
 65 70 75 80  
 ctg ctg tac gtg ctg gag gca gat tcg gcc atc gcc aag cac atg aag 288  
 Leu Leu Tyr Val Leu Glu Ala Asp Ser Ala Ile Ala Lys His Met Lys  
 85 90 95  
 cac cca cag ggg gac atg atc gcc gag gac atc cgc cag ctg aaa gag 336  
 His Pro Gln Gly Asp Met Ile Ala Glu Asp Ile Arg Gln Leu Lys Glu  
 100 105 110  
 cgc gtg acc aac ctg cgg ggg aaa cac aag cag atg tac agc ctg gca 384  
 Arg Val Thr Asn Leu Arg Gly Lys His Lys Gln Met Tyr Ser Leu Ala  
 115 120 125  
 gtg aaa gag gcc gac ccg aga gtc aac tgg gac aca ctg gtg gac gag 432  
 Val Lys Glu Ala Asp Pro Val Asn Trp Asp Thr Leu Val Asp Glu  
 130 135 140

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aag Lys 145	ctg Leu	gac Asp	aag Lys	ctg Leu	agc Ser 150	agc Ser	cag Gln	agc Ser	ttt Phe	ggg Gly 155	act Thr	gac Asp	ctt Leu	cct Pro	ctg Leu 160	480
gtg Val	gat Asp	agc Ser	cag Gln	gtg Val 165	gag Glu	caa Gln	cac His	aac Asn	atc Ile 170	ttc Phe	cac His	aat Asn	gaa Glu	gtc Val 175	aaa Lys	528
gcc Ala	atc Ile	ggg Gly	ccc Pro 180	cac His	ctg Leu	gcc Ala	aag Lys	gac Asp 185	aag Lys	gag Glu	cag Gln	aac Asn	agt Ser 190	gaa Glu	ctc Leu	576
caa Gln	gcc Ala	aag Lys 195	tat Tyr	cag Gln	aag Lys	ttg Leu 200	ctg Leu	aca Thr	gca Ala	tca Ser	cag Gln	gca Ala 205	cgg Arg	cag Gln	cag Gln	624
cac His 210	ctg Leu	agc Ser	tcg Ser	ctg Leu	cag Gln	gat Asp 215	tac Tyr	atg Met	cag Gln	cgc Arg	tgc Cys 220	acc Thr	aat Asn	gag Glu	ctg Leu	672
tac Tyr 225	tgg Trp	ctg Leu	gac Asp	cag Gln	caa Gln 230	gcc Ala	aag Lys	ggc Gly	cgc Arg	atg Met 235	cag Gln	tat Tyr	gac Asp	tgg Trp	agc Ser 240	720
gac Asp	cgc Arg	aac Asn	ctc Leu	gac Asp 245	tac Tyr	ccc Pro	agc Ser	cgc Arg	cgc Arg 250	cgc Arg	cag Gln	tac Tyr	gag Glu	aat Asn 255	ttc Phe	768
atc Ile	aac Asn	cgg Arg	aac Asn 260	ctg Leu	gag Glu	gcc Ala	aaa Lys	gaa Glu 265	gaa Glu	aga Arg	atc Ile	aac Asn	aaa Lys 270	ctg Leu	cac His	816
act Thr	gaa Glu	ggt Gly 275	gac Asp	caa Gln	ctg Leu	ctg Leu	aca Thr 280	gct Ala	gag Glu	cac His	cca Pro	ggg Gly 285	agg Arg	aac Asn	tcc Ser	864
att Ile 290	gag Glu	gca Ala	cac His	atg Met	gag Glu	gct Ala 295	gtg Val	cat His	gct Ala	gag Glu	tgg Trp 300	aag Lys	gag Glu	tac Tyr	ctg Leu	912
aac Asn 305	ctg Leu	ctc Leu	atc Ile	tgt Cys	gag Glu 310	gag Glu	agc Ser	cat His	ctg Leu	aaa Lys 315	tac Tyr	atg Met	gaa Glu	gac Asp	tac Tyr 320	960
cac His	caa Gln	ttt Phe	cac His	aaa Lys 325	gac Asp	atg Met	aag Lys	gat Asp	gct Ala 330	cag Gln	gag Glu	ctg Leu	cta Leu	cgc Arg 335	aag Lys	1008
gtg Val	gac Asp	tca Ser	gac Asp 340	ttg Leu	aac Asn	cag Gln	aaa Lys	tat Tyr 345	agc Ser	cct Pro	gac Asp	ttc Phe	aaa Lys 350	gac Asp	cgg Arg	1056
tat Tyr	cag Gln	ata Ile 355	gag Glu	ctg Leu	ttg Leu	ctt Leu	cgg Arg 360	gaa Glu	ctg Leu	gat Asp	gac Asp	cag Gln 365	gag Glu	aag Lys	gct Ala	1104
ctg Leu 370	gac Asp	aag Lys	tat Tyr	gag Glu	gat Asp	gtg Val 375	gtg Val	cga Arg	ggg Gly	ctg Leu	cag Gln 380	agg Arg	cga Arg	ggg Gly	cag Gln	1152
caa Gln 385	gtg Val	gtg Val	cca Pro	ctc Leu	aag Lys 390	tac Tyr	cgc Arg	cgc Arg	gag Glu	acg Thr 395	ccg Pro	ctc Leu	aag Lys	ccc Pro	atc Ile 400	1200
cct Pro	gtg Val	gag Glu	gct Ala	ctc Leu 405	tgt Cys	gac Asp	ttt Phe	gag Glu	agt Ser 410	gac Asp	cag Gln	ggc Gly	ctc Leu	atc Ile 415	tcg Ser	1248

cg	gg	tat	agc	tac	aca	ctg	cag	aag	aac	aac	ggg	gag	agc	tgg	gag	1296
Arg	Gly	Tyr	Ser	Tyr	Thr	Leu	Gln	Lys	Asn	Asn	Gly	Glu	Ser	Trp	Glu	
			420					425					430			
ctg	aca	gac	agc	act	ggg	aag	aag	ctg	gct	gcc	cca	gcc	gtc	tgc	ttc	1344
Leu	Thr	Asp	Ser	Thr	Gly	Lys	Lys	Leu	Ala	Ala	Pro	Ala	Val	Cys	Phe	
		435					440					445				
atc	att	ccc	ccc	acc	gac	ccc	gag	gcc	ttg	gct	ctt	gct	gac	agc	ctg	1392
Ile	Ile	Pro	Pro	Thr	Asp	Pro	Glu	Ala	Leu	Ala	Leu	Ala	Asp	Ser	Leu	
	450					455					460					
ggc	agc	cag	tac	cga	agt	gtg	agg	cag	aag	gcg	act	ggg	agc	aaa	cat	1440
Gly	Ser	Gln	Tyr	Arg	Ser	Val	Arg	Gln	Lys	Ala	Thr	Gly	Ser	Lys	His	
465					470					475					480	
gca	ctc	cag	cag	cgg	cat	gag	gtg	cta	agg	acg	gag	aac	cct	gga	gat	1488
Ala	Leu	Gln	Gln	Arg	His	Glu	Val	Leu	Arg	Thr	Glu	Asn	Pro	Gly	Asp	
				485					490					495		
gcc	tct	gat	ctt	cag	gga	cga	cag	ctg	ctg	gct	ggc	ttg	gac	aaa	gtg	1536
Ala	Ser	Asp	Leu	Gln	Gly	Arg	Gln	Leu	Leu	Ala	Gly	Leu	Asp	Lys	Val	
			500					505					510			
gcc	agt	gac	ctg	gac	cgg	cag	gaa	aag	gct	atc	aca	ggg	atc	cta	cgg	1584
Ala	Ser	Asp	Leu	Asp	Arg	Gln	Glu	Lys	Ala	Ile	Thr	Gly	Ile	Leu	Arg	
		515					520					525				
cca	cca	ctt	gag	cag	gga	cgg	gca	att	gag	gat	agt	gcg	gag	cgg	gcc	1632
Pro	Pro	Leu	Glu	Gln	Gly	Arg	Ala	Ile	Glu	Asp	Ser	Ala	Glu	Arg	Ala	
	530					535					540					
aag	ggt	ctc	aag	aac	att	acc	aat	gag	ctg	cta	cag	att	gag	cca	gag	1680
Lys	Gly	Leu	Lys	Asn	Ile	Thr	Asn	Glu	Leu	Leu	Gln	Ile	Glu	Pro	Glu	
545					550				555						560	
aag	acg	cag	tgc	aca	gcc	gag	tgt	gaa	gcc	ttt	gtg	cag	gcc	ctc	ccg	1728
Lys	Thr	Gln	Cys	Thr	Ala	Glu	Cys	Glu	Ala	Phe	Val	Gln	Ala	Leu	Pro	
				565				570						575		
gcc	agc	ggc	acc	gca	ccc	ttg	ctg	aag	acc	cgg	gta	gaa	gac	acc	aac	1776
Ala	Ser	Gly	Thr	Ala	Pro	Leu	Leu	Lys	Thr	Arg	Val	Glu	Asp	Thr	Asn	
			580					585					590			
cag	aaa	tat	gag	cga	cta	gta	tgg	ttg	cta	gag	gca	gcc	cag	gag	aag	1824
Gln	Lys	Tyr	Glu	Arg	Leu	Val	Trp	Leu	Leu	Glu	Ala	Ala	Gln	Glu	Lys	
		595					600					605				
gtg	gac	gtg	gcc	aac	cgc	ctg	gag	aac	agt	ctg	cag	cgg	ggc	agg	gag	1872
Val	Asp	Val	Ala	Asn	Arg	Leu	Glu	Asn	Ser	Leu	Gln	Arg	Gly	Arg	Glu	
	610					615					620					
ctg	ctg	gcc	tca	tac	gag	aac	agg	ctg	att	cag	gac	gac	aca	atg	cct	1920
Leu	Leu	Ala	Ser	Tyr	Glu	Asn	Arg	Leu	Ile	Gln	Asp	Asp	Thr	Met	Pro	
625					630					635					640	
gaa	agt	ggt	cat	gtg	ttg	gac	agg	aag	agg	cag	gag	ctg	gag	gcc	atg	1968
Glu	Ser	Gly	His	Val	Leu	Asp	Arg	Lys	Arg	Gln	Glu	Leu	Glu	Ala	Met	
				645					650					655		
gct	tct	gag	ctg	cag	gcc	cac	aag	tcc	ctc	ctg	ggt	gag	gtg	gga	aag	2016
Ala	Ser	Glu	Leu	Gln	Ala	His	Lys	Ser	Leu	Leu	Gly	Glu	Val	Gly	Lys	
			660					665					670			
aac	cta	cag	gtg	gcc	aag	cag	tgt	tcc	agc	tca	ctg	gcc	agc	cgc	ttc	2064
Asn	Leu	Gln	Val	Ala	Lys	Gln	Cys	Ser	Ser	Ser	Leu	Ala	Ser	Arg	Phe	
		675					680					685				
caa	gag	cac	tgc	cct	gac	ctg	gag	cgg	cag	gag	gcc	gag	gtg	cac	aag	2112

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Gln	Glu	His	Cys	Pro	Asp	Leu	Glu	Arg	Gln	Glu	Ala	Glu	Val	His	Lys	
690						695					700					
ctc	aac	caa	cgt	ttc	aac	aac	ctc	agc	cag	cag	gtg	gaa	cgg	agg	gcc	2160
Leu	Asn	Gln	Arg	Phe	Asn	Asn	Leu	Ser	Gln	Gln	Val	Glu	Arg	Arg	Ala	
705					710					715					720	
cag	agc	ctg	cag	agt	gcc	agg	gct	gcc	tac	gat	gaa	tac	tgc	agt	ggg	2208
Gln	Ser	Leu	Gln	Ser	Ala	Arg	Ala	Ala	Tyr	Asp	Glu	Tyr	Cys	Ser	Gly	
				725					730					735		
tac	aac	cgt	gtg	ctc	cag	ttt	ttg	gcc	aag	act	ccc	agt	tat	gag	ccc	2256
Tyr	Asn	Arg	Val	Leu	Gln	Phe	Leu	Ala	Lys	Thr	Pro	Ser	Tyr	Glu	Pro	
			740					745					750			
cag	gag	aca	gac	agc	ctc	ggc	cag	atg	gag	acc	aag	ctc	aag	aac	cag	2304
Gln	Glu	Thr	Asp	Ser	Leu	Gly	Gln	Met	Glu	Thr	Lys	Leu	Lys	Asn	Gln	
		755					760					765				
aag	aac	ttg	ctt	gat	gag	cta	gca	agc	agg	gaa	cag	gag	gtg	cag	aag	2352
Lys	Asn	Leu	Leu	Asp	Glu	Leu	Ala	Ser	Arg	Glu	Gln	Glu	Val	Gln	Lys	
	770					775					780					
gtc	tat	gca	gat	tcc	cag	cag	tac	cag	caa	gcg	gtg	aag	gac	tat	gaa	2400
Val	Tyr	Ala	Asp	Ser	Gln	Gln	Tyr	Gln	Gln	Ala	Val	Lys	Asp	Tyr	Glu	
785					790					795					800	
ctt	gaa	gca	gag	aag	cta	agg	tcc	ttg	ctg	gac	ctg	gag	aat	gga	cgg	2448
Leu	Glu	Ala	Glu	Lys	Leu	Arg	Ser	Leu	Leu	Asp	Leu	Glu	Asn	Gly	Arg	
				805				810						815		
aac	agc	cat	gtg	aac	aag	aga	gcc	agg	ctg	cag	tct	cct	gct	gcc	aaa	2496
Asn	Ser	His	Val	Asn	Lys	Arg	Ala	Arg	Leu	Gln	Ser	Pro	Ala	Ala	Lys	
			820					825					830			
gtg	aag	gaa	gag	gaa	gct	gct	ctt	gct	gcc	aag	ttc	aca	gag	gtt	aat	2544
Val	Lys	Glu	Glu	Glu	Ala	Ala	Leu	Ala	Ala	Lys	Phe	Thr	Glu	Val	Asn	
		835					840					845				
gcc	atc	aac	aga	cag	agg	cta	cag	aat	ttg	gag	ttt	gca	ctg	aat	ctc	2592
Ala	Ile	Asn	Arg	Gln	Arg	Leu	Gln	Asn	Leu	Glu	Phe	Ala	Leu	Asn	Leu	
	850					855					860					
ttg	aga	cag	caa	cca	gaa	gca	gga	gtg	acc	cat	gag	acc	cta	caa	ggg	2640
Leu	Arg	Gln	Gln	Pro	Glu	Ala	Gly	Val	Thr	His	Glu	Thr	Leu	Gln	Gly	
865					870				875						880	
gga	aag	cta	agc	tct	ggc	atg	gag	gaa	aca	tgg	aag	att	aag	aag	gaa	2688
Gly	Lys	Leu	Ser	Ser	Gly	Met	Glu	Glu	Thr	Trp	Lys	Ile	Lys	Lys	Glu	
				885				890						895		
ctg	gag	gag	gag	ata	gag	cga	agg	caa	cag	ctg	gaa	aat	gag	gtc	aag	2736
Leu	Glu	Glu	Glu	Ile	Glu	Arg	Arg	Gln	Gln	Leu	Glu	Asn	Glu	Val	Lys	
			900					905					910			
agt	gcc	cag	gag	gaa	atc	cag	acc	ctg	aag	gat	cag	ggg	cct	cag	gag	2784
Ser	Ala	Gln	Glu	Glu	Ile	Gln	Thr	Leu	Lys	Asp	Gln	Gly	Pro	Gln	Glu	
		915					920					925				
tca	ttg	gtg	agg	aag	gag	gtg	ctg	aag	aag	gtg	cca	gac	cct	gcc	ctg	2832
Ser	Leu	Val	Arg	Lys	Glu	Val	Leu	Lys	Lys	Val	Pro	Asp	Pro	Ala	Leu	
	930					935					940					
gag	gag	agc	ttc	cag	cag	ctg	cag	cag	acg	ctg	gct	gag	gaa	cag	cac	2880
Glu	Glu	Ser	Phe	Gln	Gln	Leu	Gln	Gln	Thr	Leu	Ala	Glu	Glu	Gln	His	
945					950					955					960	
aag	aac	cag	cta	ttg	cag	gag	gag	ctg	gga	gca	ctg	cag	ctc	cgg	ctg	2928
Lys	Asn	Gln	Leu	Leu	Gln	Glu	Glu	Leu	Gly	Ala	Leu	Gln	Leu	Arg	Leu	



cag gct cta gag cag gag acc agg gat ggg gga cag gag tat gtg gtc Gln Ala Leu Glu Gln Glu Thr Arg Asp Gly Gly Gln Glu Tyr Val Val	2976
980 985 990	
aag gag gtc ttg cgc att gag cca gac aga gcc cag gag gat gag gtc Lys Glu Val Leu Arg Ile Glu Pro Asp Arg Ala Gln Glu Asp Glu Val	3024
995 1000 1005	
ttg cag ctt cgg gag gag ctg gag gca ctg cgg cgc cag aaa ggc Leu Gln Leu Arg Glu Glu Leu Glu Ala Leu Arg Arg Gln Lys Gly	3069
1010 1015 1020	
gcc cga gag gct gaa gtg cta ctc tta cag cag cgt gta gca gcc Ala Arg Glu Ala Glu Val Leu Leu Leu Gln Gln Arg Val Ala Ala	3114
1025 1030 1035	
ctg gct gct gag aag agc agg gtg cag gaa aag gtc act gag aga Leu Ala Ala Glu Lys Ser Arg Val Gln Glu Lys Val Thr Glu Arg	3159
1040 1045 1050	
gag gtg gta aag cta cag aat gac ccc caa ctg gag gca gaa tac Glu Val Val Lys Leu Gln Asn Asp Pro Gln Leu Glu Ala Glu Tyr	3204
1055 1060 1065	
cgg agg ctg cag gag gag cac cag cgg gag ggc aca ctc agg gag Arg Arg Leu Gln Glu Glu His Gln Arg Glu Gly Thr Leu Arg Glu	3249
1070 1075 1080	
aag cag gag gag gag ctg agt ttc cta cag gct aag ctc agg aga Lys Gln Glu Glu Glu Leu Ser Phe Leu Gln Ala Lys Leu Arg Arg	3294
1085 1090 1095	
ctg gag aaa gaa cga gcc atg gca gaa ggc aag atc act gtc aaa Leu Glu Lys Glu Arg Ala Met Ala Glu Gly Lys Ile Thr Val Lys	3339
1100 1105 1110	
gag gtg ctc aag gta gag aaa gat gca gct gtg gag aga gaa gtc Glu Val Leu Lys Val Glu Lys Asp Ala Ala Val Glu Arg Glu Val	3384
1115 1120 1125	
aat gac ctc acc cgc cag tat gag gac gag gct gcc aag gca cgc Asn Asp Leu Thr Arg Gln Tyr Glu Asp Glu Ala Ala Lys Lys Ala Arg	3429
1130 1135 1140	
tct ggc cag cgg gag aag aca gaa ctt ctc aga aag ata tgg gcc Ser Gly Gln Arg Glu Lys Thr Glu Leu Leu Arg Lys Ile Trp Ala	3474
1145 1150 1155	
ctg gaa gag gaa aat gct aag gtg gtg gta cag gag aag gtc cga Leu Glu Glu Glu Asn Ala Lys Val Val Val Gln Glu Lys Val Arg	3519
1160 1165 1170	
gag atc gtg cgg cca gat ccc aag gca gag agt gaa gtg gcc aac Glu Ile Val Arg Pro Asp Pro Lys Ala Glu Ser Glu Val Ala Asn	3564
1175 1180 1185	
ctc cgc ctg gag ctg gtg gag cag gag cgc aaa ttc agg ggt gct Leu Arg Leu Glu Leu Val Glu Gln Glu Arg Lys Phe Arg Gly Ala	3609
1190 1195 1200	
gag gag cag ctg aag agc tac cag agt gag ctg gag gcc cta cgg Glu Glu Gln Leu Lys Ser Tyr Gln Ser Glu Leu Glu Ala Leu Arg	3654
1205 1210 1215	
aac cgt gga cca cag gta gaa gtc aaa gag gtg acc aaa gag gtc Asn Arg Gly Pro Gln Val Glu Val Lys Glu Val Thr Lys Glu Val	3699
1220 1225 1230	

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att Ile	aaa Lys 1235	tat Tyr	aca Thr	act Thr	gac Asp	cca Pro 1240	gag Glu	aca Thr	gag Glu	cag Gln	gaa Glu 1245	ctc Leu	cag Gln	agg Arg	3744
ctc Leu	agg Arg 1250	gag Glu	gag Glu	atc Ile	atg Met	gac Asp 1255	aag Lys	acc Thr	agg Arg	tta Leu	ata Ile 1260	gaa Glu	agg Arg	tgt Cys	3789
gac Asp	cta Leu 1265	gag Glu	att Ile	tac Tyr	cag Gln	ctg Leu 1270	aag Lys	cag Gln	gag Glu	atc Ile	cag Gln 1275	gcc Ala	ctt Leu	aag Lys	3834
gac Asp	acc Thr 1280	aag Lys	cca Pro	cag Gln	gtg Val	cag Gln 1285	act Thr	aga Arg	gag Glu	gta Val	gtc Val 1290	cag Gln	gag Glu	atc Ile	3879
ctg Leu	cag Gln 1295	ttc Phe	cag Gln	gaa Glu	gac Asp	ccc Pro 1300	caa Gln	acc Thr	aag Lys	aag Lys	gag Glu 1305	gta Val	gag Glu	tct Ser	3924
ctg Leu	cgt Arg 1310	ata Ile	cag Gln	ctg Leu	tca Ser	gaa Glu 1315	gaa Glu	cag Gln	aag Lys	aaa Lys	cag Gln 1320	gtg Val	gac Asp	ctg Leu	3969
gaa Glu	ggg Gly 1325	gag Glu	cgg Arg	gca Ala	tcc Ser	cag Gln 1330	gaa Glu	gag Glu	aag Lys	atc Ile	aaa Lys 1335	cgc Arg	aag Lys	gag Glu	4014
gaa Glu	gag Glu 1340	ctg Leu	gca Ala	cag Gln	cag Gln	agg Arg 1345	aag Lys	gaa Glu	agg Arg	gtt Val	gta Val 1350	cgc Arg	cag Gln	gag Glu	4059
gta Val	gta Val 1355	cag Gln	tat Tyr	gaa Glu	gat Asp	gag Glu 1360	cca Pro	gat Asp	ttg Leu	cga Arg	gct Ala 1365	gag Glu	gtg Val	act Thr	4104
gcc Ala	ttc Phe 1370	aca Thr	aac Asn	agc Ser	att Ile	gat Asp 1375	gct Ala	gag Glu	ctg Leu	cgg Arg	cag Gln 1380	att Ile	gat Asp	aaa Lys	4149
ctg Leu	cat His 1385	gtg Val	gag Glu	cta Leu	cgg Arg	cgg Arg 1390	tta Leu	cag Gln	cat His	cgc Arg	cga Arg 1395	gca Ala	gag Glu	ctg Leu	4194
gag Glu	agg Arg 1400	cag Gln	ttg Leu	gag Glu	gag Glu	ctg Leu 1405	gag Glu	cgg Arg	gag Glu	agg Arg	cag Gln 1410	gca Ala	cgt Arg	agg Arg	4239
gca Ala	gcc Ala 1415	gag Glu	ctg Leu	gag Glu	gta Val	cag Gln 1420	agg Arg	ctg Leu	caa Gln	cag Gln	cgg Arg 1425	ctg Leu	gct Ala	gca Ala	4284
ttg Leu	gag Glu 1430	cag Gln	gag Glu	gag Glu	gcc Ala	aag Lys 1435	act Thr	ggt Gly	gag Glu	aag Lys	gtg Val 1440	acc Thr	cac His	aca Thr	4329
caa Gln	aag Lys 1445	gtg Val	gtg Val	ctg Leu	cag Gln	cag Gln 1450	gac Asp	cca Pro	cag Gln	cag Gln	acc Thr 1455	agg Arg	gag Glu	cat His	4374
gcc Ala	ctg Leu 1460	ctc Leu	cga Arg	gcc Ala	cag Gln	ctg Leu 1465	gag Glu	gaa Glu	gag Glu	cgg Arg	cac His 1470	cgg Arg	agg Arg	cag Gln	4419
cta Leu	ctg Leu 1475	gag Glu	ggt Gly	gag Glu	ctt Leu	gag Glu 1480	ccg Pro	ctg Leu	cgt Arg	aga Arg	aag Lys 1485	ttg Leu	gct Ala	gcc Ala	4464

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ctg Leu	gag Glu 1490	aag Lys	gca Ala	gag Glu	atc Ile	aaa Lys 1495	gaa Glu	aag Lys	gtg Val	gtc Val	ttc Phe 1500	tct Ser	gag Glu	agt Ser	4509
gtc Val	cag Gln 1505	gta Val	gaa Glu	aaa Lys	ggg Gly	gac Asp 1510	act Thr	gag Glu	caa Gln	gag Glu	atc Ile 1515	cag Gln	cgc Arg	ctc Leu	4554
aag Lys	aag Lys 1520	agc Ser	ctg Leu	gaa Glu	gag Glu	gag Glu 1525	agc Ser	cag Gln	agc Ser	aag Lys	agg Arg 1530	gag Glu	ctg Leu	gat Asp	4599
tca Ser	gag Glu 1535	gtg Val	acc Thr	cgg Arg	cta Leu	gaa Glu 1540	gcc Ala	aag Lys	tta Leu	tct Ser	gag Glu 1545	cta Leu	gaa Glu	ttc Phe	4644
tat Tyr	aat Asn 1550	tcc Ser	aag Lys	tca Ser	tcc Ser	aag Lys 1555	gaa Glu	ctg Leu	gac Asp	ttc Phe	ctg Leu 1560	aga Arg	gaa Glu	gaa Glu	4689
aac Asn	cac His 1565	aag Lys	cta Leu	cag Gln	cta Leu	gag Glu 1570	cgg Arg	caa Gln	aac Asn	ctg Leu	cag Gln 1575	cta Leu	gag Glu	acc Thr	4734
cgg Arg	aga Arg 1580	ctc Leu	caa Gln	tca Ser	gag Glu	att Ile 1585	gag Glu	atg Met	gca Ala	gca Ala	aca Thr 1590	gaa Glu	act Thr	cga Arg	4779
gat Asp	ctg Leu 1595	aag Lys	aac Asn	ata Ile	acc Thr	acg Thr 1600	ata Ile	gac Asp	tct Ser	ggg Gly	acc Thr 1605	cac His	cta Leu	aac Asn	4824
tct Ser	agg Arg 1610	ctg Leu	tgg Trp	tcc Ser	cta Leu	gag Glu 1615	aag Lys	gaa Glu	ctg Leu	gat Asp	gac Asp 1620	ctc Leu	aag Lys	aag Lys	4869
atg Met	tcc Ser 1625	aag Lys	gac Asp	aag Lys	gat Asp	ctg Leu 1630	gag Glu	atc Ile	gat Asp	gaa Glu	cta Leu 1635	cag Gln	agg Arg	cgc Arg	4914
ctg Leu	ggc Gly 1640	tct Ser	gtg Val	gct Ala	gtc Val	aag Lys 1645	aga Arg	gag Glu	cag Gln	agg Arg	gag Glu 1650	aac Asn	cac His	ctg Leu	4959
agg Arg	cgc Arg 1655	tcc Ser	ata Ile	gtg Val	gtc Val	ata Ile 1660	gac Asp	cct Pro	gac Asp	aca Thr	ggg Gly 1665	cgt Arg	gag Glu	ctg Leu	5004
tcc Ser	cca Pro 1670	gag Glu	gag Glu	gct Ala	cac His	cgg Arg 1675	gct Ala	ggg Gly	ctt Leu	atc Ile	gac Asp 1680	tgg Trp	aaa Lys	atg Met	5049
ttt Phe	gtg Val 1685	aag Lys	ctc Leu	aga Arg	agc Ser	cag Gln 1690	gag Glu	tgc Cys	gac Asp	tgg Trp	gag Glu 1695	gag Glu	ata Ile	tca Ser	5094
gtg Val	aaa Lys 1700	ggg Gly	cct Pro	aat Asn	ggg Gly	gag Glu 1705	tca Ser	tca Ser	gta Val	att Ile	cat His 1710	gac Asp	agg Arg	aag Lys	5139
tca Ser	ggc Gly 1715	aag Lys	aag Lys	ttc Phe	tcc Ser	att Ile 1720	gag Glu	gac Asp	gct Ala	ctt Leu	cag Gln 1725	agt Ser	ggc Gly	agg Arg	5184
cta Leu	acc Thr 1730	gct Ala	gct Ala	caa Gln	tat Tyr	gac Asp 1735	cgc Arg	tat Tyr	gtc Val	aac Asn	aag Lys 1740	gat Asp	atg Met	tcc Ser	5229
att cag	gag ctg	gca gtc	ttg	gtg	tct	ggg	cag	aag							5265

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<211> 1755  
<212> PRT  
<213> Mus musculus

<400> 88

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Val Gln Thr Arg Ser Ile Ser Asn Lys Glu Leu Ser Asp Leu Ile Glu  
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Gln Leu Gln Lys Asn Ala Asp Gln Val Glu Arg Asn Ile Val Asp Thr  
35 40 45

Glu Ala Lys Met Gln Ser Asp Leu Ala Arg Met Gln Glu Gly Gln Leu  
50 55 60

Pro Glu His Arg Asp Ala Ala Leu Gln Asn Val Ser Asp Ser Glu Lys  
65 70 75 80

Leu Leu Tyr Val Leu Glu Ala Asp Ser Ala Ile Ala Lys His Met Lys  
85 90 95

His Pro Gln Gly Asp Met Ile Ala Glu Asp Ile Arg Gln Leu Lys Glu  
100 105 110

Arg Val Thr Asn Leu Arg Gly Lys His Lys Gln Met Tyr Ser Leu Ala  
115 120 125

Val Lys Glu Ala Asp Pro Arg Val Asn Trp Asp Thr Leu Val Asp Glu  
130 135 140

Lys Leu Asp Lys Leu Ser Ser Gln Ser Phe Gly Thr Asp Leu Pro Leu  
145 150 155 160

Val Asp Ser Gln Val Glu Gln His Asn Ile Phe His Asn Glu Val Lys  
165 170 175

Ala Ile Gly Pro His Leu Ala Lys Asp Lys Glu Gln Asn Ser Glu Leu  
180 185 190

Gln Ala Lys Tyr Gln Lys Leu Leu Thr Ala Ser Gln Ala Arg Gln Gln  
195 200 205

His Leu Ser Ser Leu Gln Asp Tyr Met Gln Arg Cys Thr Asn Glu Leu  
210 215 220

Tyr Trp Leu Asp Gln Gln Ala Lys Gly Arg Met Gln Tyr Asp Trp Ser  
225 230 235 240

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Asp Arg Asn Leu Asp<sub>245</sub> Tyr Pro Ser Arg Arg<sub>250</sub> Arg Gln Tyr Glu Asn<sub>255</sub> Phe  
 Ile Asn Arg Asn<sub>260</sub> Leu Glu Ala Lys Glu<sub>265</sub> Glu Arg Ile Asn Lys<sub>270</sub> Leu His  
 Thr Glu Gly<sub>275</sub> Asp Gln Leu Leu Thr<sub>280</sub> Ala Glu His Pro Gly<sub>285</sub> Arg Asn Ser  
 Ile Glu<sub>290</sub> Ala His Met Glu Ala<sub>295</sub> Val His Ala Glu Trp<sub>300</sub> Lys Glu Tyr Leu  
 Asn<sub>305</sub> Leu Leu Ile Cys Glu<sub>310</sub> Glu Ser His Leu Lys<sub>315</sub> Tyr Met Glu Asp Tyr<sub>320</sub>  
 His Gln Phe His Lys<sub>325</sub> Asp Met Lys Asp Ala<sub>330</sub> Gln Glu Leu Leu Arg<sub>335</sub> Lys  
 Val Asp Ser Asp<sub>340</sub> Leu Asn Gln Lys Tyr<sub>345</sub> Ser Pro Asp Phe Lys<sub>350</sub> Asp Arg  
 Tyr Gln Ile<sub>355</sub> Glu Leu Leu Leu Arg<sub>360</sub> Glu Leu Asp Asp Gln<sub>365</sub> Glu Lys Ala  
 Leu Asp<sub>370</sub> Lys Tyr Glu Asp Val<sub>375</sub> Val Arg Gly Leu Gln<sub>380</sub> Arg Arg Gly Gln  
 Gln<sub>385</sub> Val Val Pro Leu Lys<sub>390</sub> Tyr Arg Arg Glu Thr<sub>395</sub> Pro Leu Lys Pro Ile<sub>400</sub>  
 Pro Val Glu Ala Leu<sub>405</sub> Cys Asp Phe Glu Ser<sub>410</sub> Asp Gln Gly Leu Ile<sub>415</sub> Ser  
 Arg Gly Tyr Ser<sub>420</sub> Tyr Thr Leu Gln Lys<sub>425</sub> Asn Asn Gly Glu Ser<sub>430</sub> Trp Glu  
 Leu Thr Asp<sub>435</sub> Ser Thr Gly Lys Lys<sub>440</sub> Leu Ala Ala Pro Ala<sub>445</sub> Val Cys Phe  
 Ile Ile<sub>450</sub> Pro Pro Thr Asp Pro<sub>455</sub> Glu Ala Leu Ala Leu<sub>460</sub> Ala Asp Ser Leu  
 Gly Ser Gln Tyr Arg Ser<sub>470</sub> Val Arg Gln Lys Ala<sub>475</sub> Thr Gly Ser Lys His<sub>480</sub>  
 Ala Leu Gln Gln Arg<sub>485</sub> His Glu Val Leu Arg<sub>490</sub> Thr Glu Asn Pro Gly<sub>495</sub> Asp  
 Ala Ser Asp Leu<sub>500</sub> Gln Gly Arg Gln Leu<sub>505</sub> Leu Ala Gly Leu Asp<sub>510</sub> Lys Val

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Ala Ser Asp Leu Asp Arg Gln Glu Lys Ala Ile Thr Gly Ile Leu Arg  
515 520 525

Pro Pro Leu Glu Gln Gly Arg Ala Ile Glu Asp Ser Ala Glu Arg Ala  
530 535 540

Lys Gly Leu Lys Asn Ile Thr Asn Glu Leu Leu Gln Ile Glu Pro Glu  
545 550 555 560

Lys Thr Gln Cys Thr Ala Glu Cys Glu Ala Phe Val Gln Ala Leu Pro  
565 570 575

Ala Ser Gly Thr Ala Pro Leu Leu Lys Thr Arg Val Glu Asp Thr Asn  
580 585 590

Gln Lys Tyr Glu Arg Leu Val Trp Leu Leu Glu Ala Ala Gln Glu Lys  
595 600 605

Val Asp Val Ala Asn Arg Leu Glu Asn Ser Leu Gln Arg Gly Arg Glu  
610 615 620

Leu Leu Ala Ser Tyr Glu Asn Arg Leu Ile Gln Asp Asp Thr Met Pro  
625 630 635 640

Glu Ser Gly His Val Leu Asp Arg Lys Arg Gln Glu Leu Glu Ala Met  
645 650 655

Ala Ser Glu Leu Gln Ala His Lys Ser Leu Leu Gly Glu Val Gly Lys  
660 665 670

Asn Leu Gln Val Ala Lys Gln Cys Ser Ser Ser Leu Ala Ser Arg Phe  
675 680 685

Gln Glu His Cys Pro Asp Leu Glu Arg Gln Glu Ala Glu Val His Lys  
690 695 700

Leu Asn Gln Arg Phe Asn Asn Leu Ser Gln Gln Val Glu Arg Arg Ala  
705 710 715 720

Gln Ser Leu Gln Ser Ala Arg Ala Ala Tyr Asp Glu Tyr Cys Ser Gly  
725 730 735

Tyr Asn Arg Val Leu Gln Phe Leu Ala Lys Thr Pro Ser Tyr Glu Pro  
740 745 750

Gln Glu Thr Asp Ser Leu Gly Gln Met Glu Thr Lys Leu Lys Asn Gln  
755 760 765

Lys Asn Leu Leu Asp Glu Leu Ala Ser Arg Glu Gln Glu Val Gln Lys  
770 775 780

Val Tyr Ala Asp Ser Gln Gln Tyr Gln Gln Ala Val Lys Asp Tyr Glu  
 785 790 795 800

Leu Glu Ala Glu Lys Leu Arg Ser Leu Leu Asp Leu Glu Asn Gly Arg  
 805 810 815

Asn Ser His Val Asn Lys Arg Ala Arg Leu Gln Ser Pro Ala Ala Lys  
 820 825 830

Val Lys Glu Glu Glu Ala Ala Leu Ala Ala Lys Phe Thr Glu Val Asn  
 835 840 845

Ala Ile Asn Arg Gln Arg Leu Gln Asn Leu Glu Phe Ala Leu Asn Leu  
 850 855 860

Leu Arg Gln Gln Pro Glu Ala Gly Val Thr His Glu Thr Leu Gln Gly  
 865 870 875 880

Gly Lys Leu Ser Ser Gly Met Glu Glu Thr Trp Lys Ile Lys Lys Glu  
 885 890 895

Leu Glu Glu Glu Ile Glu Arg Arg Gln Gln Leu Glu Asn Glu Val Lys  
 900 905 910

Ser Ala Gln Glu Glu Ile Gln Thr Leu Lys Asp Gln Gly Pro Gln Glu  
 915 920 925

Ser Leu Val Arg Lys Glu Val Leu Lys Lys Val Pro Asp Pro Ala Leu  
 930 935 940

Glu Glu Ser Phe Gln Gln Leu Gln Gln Thr Leu Ala Glu Glu Gln His  
 945 950 955 960

Lys Asn Gln Leu Leu Gln Glu Glu Leu Gly Ala Leu Gln Leu Arg Leu  
 965 970 975

Gln Ala Leu Glu Gln Glu Thr Arg Asp Gly Gly Gln Glu Tyr Val Val  
 980 985 990

Lys Glu Val Leu Arg Ile Glu Pro Asp Arg Ala Gln Glu Asp Glu Val  
 995 1000 1005

Leu Gln Leu Arg Glu Glu Leu Glu Ala Leu Arg Arg Gln Lys Gly  
 1010 1015 1020

Ala Arg Glu Ala Glu Val Leu Leu Leu Gln Gln Arg Val Ala Ala  
 1025 1030 1035

Leu Ala Ala Glu Lys Ser Arg Val Gln Glu Lys Val Thr Glu Arg  
 1040 1045 1050

Glu Val Val Lys Leu Gln Asn Asp Pro Gln Leu Glu Ala Glu Tyr  
 1055

1055						1060						1065			
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1070						1075					1080				
Lys	Gln	Glu	Glu	Glu	Leu	Ser	Phe	Leu	Gln	Ala	Lys	Leu	Arg	Arg	
1085						1090					1095				
Leu	Glu	Lys	Glu	Arg	Ala	Met	Ala	Glu	Gly	Lys	Ile	Thr	Val	Lys	
1100						1105					1110				
Glu	Val	Leu	Lys	Val	Glu	Lys	Asp	Ala	Ala	Val	Glu	Arg	Glu	Val	
1115						1120					1125				
Asn	Asp	Leu	Thr	Arg	Gln	Tyr	Glu	Asp	Glu	Ala	Ala	Lys	Ala	Arg	
1130						1135					1140				
Ser	Gly	Gln	Arg	Glu	Lys	Thr	Glu	Leu	Leu	Arg	Lys	Ile	Trp	Ala	
1145						1150					1155				
Leu	Glu	Glu	Glu	Asn	Ala	Lys	Val	Val	Val	Gln	Glu	Lys	Val	Arg	
1160						1165					1170				
Glu	Ile	Val	Arg	Pro	Asp	Pro	Lys	Ala	Glu	Ser	Glu	Val	Ala	Asn	
1175						1180					1185				
Leu	Arg	Leu	Glu	Leu	Val	Glu	Gln	Glu	Arg	Lys	Phe	Arg	Gly	Ala	
1190						1195					1200				
Glu	Glu	Gln	Leu	Lys	Ser	Tyr	Gln	Ser	Glu	Leu	Glu	Ala	Leu	Arg	
1205						1210					1215				
Asn	Arg	Gly	Pro	Gln	Val	Glu	Val	Lys	Glu	Val	Thr	Lys	Glu	Val	
1220						1225					1230				
Ile	Lys	Tyr	Thr	Thr	Asp	Pro	Glu	Thr	Glu	Gln	Glu	Leu	Gln	Arg	
1235						1240					1245				
Leu	Arg	Glu	Glu	Ile	Met	Asp	Lys	Thr	Arg	Leu	Ile	Glu	Arg	Cys	
1250						1255					1260				
Asp	Leu	Glu	Ile	Tyr	Gln	Leu	Lys	Gln	Glu	Ile	Gln	Ala	Leu	Lys	
1265						1270					1275				
Asp	Thr	Lys	Pro	Gln	Val	Gln	Thr	Arg	Glu	Val	Val	Gln	Glu	Ile	
1280						1285					1290				
Leu	Gln	Phe	Gln	Glu	Asp	Pro	Gln	Thr	Lys	Lys	Glu	Val	Glu	Ser	
1295						1300					1305				
Leu	Arg	Ile	Gln	Leu	Ser	Glu	Glu	Gln	Lys	Lys	Gln	Val	Asp	Leu	
1310						1315					1320				



Glu	Gly	Glu	Arg	Ala	Ser	Gln	Glu	Glu	Lys	Ile	Lys	Arg	Lys	Glu
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Glu	Glu	Leu	Ala	Gln	Gln	Arg	Lys	Glu	Arg	Val	Val	Arg	Gln	Glu
	1340					1345					1350			
Val	Val	Gln	Tyr	Glu	Asp	Glu	Pro	Asp	Leu	Arg	Ala	Glu	Val	Thr
	1355					1360					1365			
Ala	Phe	Thr	Asn	Ser	Ile	Asp	Ala	Glu	Leu	Arg	Gln	Ile	Asp	Lys
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Leu	His	Val	Glu	Leu	Arg	Arg	Leu	Gln	His	Arg	Arg	Ala	Glu	Leu
	1385					1390					1395			
Glu	Arg	Gln	Leu	Glu	Glu	Leu	Glu	Arg	Glu	Arg	Gln	Ala	Arg	Arg
	1400					1405					1410			
Ala	Ala	Glu	Leu	Glu	Val	Gln	Arg	Leu	Gln	Gln	Arg	Leu	Ala	Ala
	1415					1420					1425			
Leu	Glu	Gln	Glu	Glu	Ala	Lys	Thr	Gly	Glu	Lys	Val	Thr	His	Thr
	1430					1435					1440			
Gln	Lys	Val	Val	Leu	Gln	Gln	Asp	Pro	Gln	Gln	Thr	Arg	Glu	His
	1445					1450					1455			
Ala	Leu	Leu	Arg	Ala	Gln	Leu	Glu	Glu	Glu	Arg	His	Arg	Arg	Gln
	1460					1465					1470			
Leu	Leu	Glu	Gly	Glu	Leu	Glu	Pro	Leu	Arg	Arg	Lys	Leu	Ala	Ala
	1475					1480					1485			
Leu	Glu	Lys	Ala	Glu	Ile	Lys	Glu	Lys	Val	Val	Phe	Ser	Glu	Ser
	1490					1495					1500			
Val	Gln	Val	Glu	Lys	Gly	Asp	Thr	Glu	Gln	Glu	Ile	Gln	Arg	Leu
	1505					1510					1515			
Lys	Lys	Ser	Leu	Glu	Glu	Glu	Ser	Gln	Ser	Lys	Arg	Glu	Leu	Asp
	1520					1525					1530			
Ser	Glu	Val	Thr	Arg	Leu	Glu	Ala	Lys	Leu	Ser	Glu	Leu	Glu	Phe
	1535					1540					1545			
Tyr	Asn	Ser	Lys	Ser	Ser	Lys	Glu	Leu	Asp	Phe	Leu	Arg	Glu	Glu
	1550					1555					1560			
Asn	His	Lys	Leu	Gln	Leu	Glu	Arg	Gln	Asn	Leu	Gln	Leu	Glu	Thr
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Arg Arg Leu Gln Ser Glu Ile Glu Met Ala Ala Thr Glu Thr Arg  
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Asp Leu Lys Asn Ile Thr Thr Ile Asp Ser Gly Thr His Leu Asn  
1595 1600 1605

Ser Arg Leu Trp Ser Leu Glu Lys Glu Leu Asp Asp Leu Lys Lys  
1610 1615 1620

Met Ser Lys Asp Lys Asp Leu Glu Ile Asp Glu Leu Gln Arg Arg  
1625 1630 1635

Leu Gly Ser Val Ala Val Lys Arg Glu Gln Arg Glu Asn His Leu  
1640 1645 1650

Arg Arg Ser Ile Val Val Ile Asp Pro Asp Thr Gly Arg Glu Leu  
1655 1660 1665

Ser Pro Glu Glu Ala His Arg Ala Gly Leu Ile Asp Trp Lys Met  
1670 1675 1680

Phe Val Lys Leu Arg Ser Gln Glu Cys Asp Trp Glu Glu Ile Ser  
1685 1690 1695

Val Lys Gly Pro Asn Gly Glu Ser Ser Val Ile His Asp Arg Lys  
1700 1705 1710

Ser Gly Lys Lys Phe Ser Ile Glu Asp Ala Leu Gln Ser Gly Arg  
1715 1720 1725

Leu Thr Ala Ala Gln Tyr Asp Arg Tyr Val Asn Lys Asp Met Ser  
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Ile Gln Glu Leu Ala Val Leu Val Ser Gly Gln Lys  
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Gly Ser Pro Ala Lys Gly Ser Pro Lys Gly Ser Pro Ser Arg His Ser  
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cgg gct gcc acc cag gag ctg gcc ctt ctc atc tcc cgc atg caa gcc 144

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aac	gcc	gac	cag	gtg	gag	cgg	gac	atc	ctg	gag	acg	cag	aag	agg	ctg		192
Asn	Ala	Asp	Gln	Val	Glu	Arg	Asp	Ile	Leu	Glu	Thr	Gln	Lys	Arg	Leu		
	50					55				60							
cag	cag	gac	cgg	ctg	aac	agt	gag	cag	agc	cag	gcc	ctg	cag	cac	cag		240
Gln	Gln	Asp	Arg	Leu	Asn	Ser	Glu	Gln	Ser	Gln	Ala	Leu	Gln	His	Gln		
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cag	gag	acg	ggc	cgc	agc	ctg	aag	gag	gct	gag	gtg	ctg	ctc	aag	gac		288
Gln	Glu	Thr	Gly	Arg	Ser	Leu	Lys	Glu	Ala	Glu	Val	Leu	Leu	Lys	Asp		
				85				90						95			
ctc	ttc	ctg	gac	gtg	gac	aag	gcc	cgg	cgg	ctc	aag	cac	ccg	cag	gct		336
Leu	Phe	Leu	Asp	Val	Asp	Lys	Ala	Arg	Arg	Leu	Lys	His	Pro	Gln	Ala		
			100					105					110				
gag	gag	att	gag	aag	gac	atc	aag	cag	ctg	cac	gag	cgg	gtg	acc	cag		384
Glu	Glu	Ile	Glu	Lys	Asp	Ile	Lys	Gln	Leu	His	Glu	Arg	Val	Thr	Gln		
		115					120					125					
gag	tgt	gcg	gag	tac	cgt	gcc	ctg	tac	gag	aag	atg	gtg	ctg	ccc	ccc		432
Glu	Cys	Ala	Glu	Tyr	Arg	Ala	Leu	Tyr	Glu	Lys	Met	Val	Leu	Pro	Pro		
	130					135					140						
gac	gtg	gga	ccc	agg	gtc	gac	tgg	gca	cgc	gtg	ctg	gag	cag	aaa	cag		480
Asp	Val	Gly	Pro	Arg	Val	Asp	Trp	Ala	Arg	Val	Leu	Glu	Gln	Lys	Gln		
					150					155					160		
aag	cag	gtc	tgc	gca	ggc	cag	tac	ggg	ccg	ggc	atg	gcg	gag	ctg	gag		528
Lys	Gln	Val	Cys	Ala	Gly	Gln	Tyr	Gly	Pro	Gly	Met	Ala	Glu	Leu	Glu		
				165				170						175			
caa	cag	atc	gcc	gag	cac	aac	atc	ctg	cag	aag	gag	atc	gac	gcc	tat		576
Gln	Gln	Ile	Ala	Glu	His	Asn	Ile	Leu	Gln	Lys	Glu	Ile	Asp	Ala	Tyr		
			180					185					190				
ggg	cag	cag	ctg	cgg	agc	ctc	gtg	ggg	ccg	gat	gca	gcc	acc	atc	cgg		624
Gly	Gln	Gln	Leu	Arg	Ser	Leu	Val	Gly	Pro	Asp	Ala	Ala	Thr	Ile	Arg		
		195					200				205						
agc	caa	tac	cga	gac	cta	ctg	aag	gcg	gcg	tcg	tgg	cgc	ggg	cag	agc		672
Ser	Gln	Tyr	Arg	Asp	Leu	Leu	Lys	Ala	Ala	Ser	Trp	Arg	Gly	Gln	Ser		
	210					215					220						
ctg	ggc	agc	ctg	tac	acg	cac	ctc	cag	ggc	tgc	acg	cgg	cag	ctg	agc		720
Leu	Gly	Ser	Leu	Tyr	Thr	His	Leu	Gln	Gly	Cys	Thr	Arg	Gln	Leu	Ser		
					230					235					240		
gcc	ctg	gct	gag	cag	cag	cgc	cgc	atc	ctg	cag	cag	gac	tgg	agc	gac		768
Ala	Leu	Ala	Glu	Gln	Gln	Arg	Arg	Ile	Leu	Gln	Gln	Asp	Trp	Ser	Asp		
				245					250					255			
ctc	atg	gcc	gac	cct	gcg	ggc	gtg	cgg	cgg	gag	tac	gag	cac	ttc	aag		816
Leu	Met	Ala	Asp	Pro	Ala	Gly	Val	Arg	Arg	Glu	Tyr	Glu	His	Phe	Lys		
			260					265					270				
cag	cac	gag	ctg	ctg	agc	cag	gag	cag	agc	gtg	aac	cag	ctg	gag	gac		864
Gln	His	Glu	Leu	Leu	Ser	Gln	Glu	Gln	Ser	Val	Asn	Gln	Leu	Glu	Asp		
		275					280					285					
gac	ggc	gag	cgc	atg	gtg	gag	ctg	cgg	cac	ccc	gcg	gtg	ggg	ccc	atc		912
Asp	Gly	Glu	Arg	Met	Val	Glu	Leu	Arg	His	Pro	Ala	Val	Gly	Pro	Ile		
	290					295				300							
cag	gcc	cac	cag	gag	gcc	ctg	aag	atg	gag	tgg	cag	aac	ttc	ctg	aac		960
Gln	Ala	His	Gln	Glu	Ala	Leu	Lys	Met	Glu	Trp	Gln	Asn	Phe	Leu	Asn		

305		310		315		320										
ctg	tgt	atc	tgc	cag	gag	acc	cag	ctg	cag	cac	gtg	gag	gac	tac	cgc	1008
Leu	Cys	Ile	Cys	Gln	Glu	Thr	Gln	Leu	Gln	His	Val	Glu	Asp	Tyr	Arg	
				325				330						335		
cgg	ttc	cag	gaa	gag	gcc	gac	tca	gtc	agc	cag	acc	ctg	gcg	aag	ctc	1056
Arg	Phe	Gln	Glu	Glu	Ala	Asp	Ser	Val	Ser	Gln	Thr	Leu	Ala	Lys	Leu	
			340					345					350			
aac	tcc	aac	ttg	gat	gcc	aag	tac	agc	cct	gca	cct	ggg	ggc	ccc	cct	1104
Asn	Ser	Asn	Leu	Asp	Ala	Lys	Tyr	Ser	Pro	Ala	Pro	Gly	Gly	Pro	Pro	
			355				360					365				
ggc	gcc	ccc	aca	gag	ctg	ctg	caa	cag	ctg	gag	gca	gag	gaa	aaa	cgg	1152
Gly	Ala	Pro	Thr	Glu	Leu	Leu	Gln	Gln	Leu	Glu	Ala	Glu	Glu	Lys	Arg	
	370					375					380					
ctg	gcc	gtc	acc	gag	agg	gcc	act	ggg	gac	ctg	cag	cgg	cga	agc	cgg	1200
Leu	Ala	Val	Thr	Glu	Arg	Ala	Thr	Gly	Asp	Leu	Gln	Arg	Arg	Ser	Arg	
	385				390					395					400	
gat	gtg	gcc	cct	ctg	cca	cag	cga	aga	aac	ccc	cct	cag	cag	ccc	ctg	1248
Asp	Val	Ala	Pro	Leu	Pro	Gln	Arg	Arg	Asn	Pro	Pro	Gln	Gln	Pro	Leu	
				405					410					415		
cac	gtg	gac	agc	atc	tgc	gac	tgg	gac	tca	gga	gaa	gtg	cag	ctg	ctg	1296
His	Val	Asp	Ser	Ile	Cys	Asp	Trp	Asp	Ser	Gly	Glu	Val	Gln	Leu	Leu	
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cag	ggt	gag	cgg	tat	aag	ctg	gta	gat	aac	act	gaa	ccg	cac	gcc	tgg	1344
Gln	Gly	Glu	Arg	Tyr	Lys	Leu	Val	Asp	Asn	Thr	Glu	Pro	His	Ala	Trp	
		435					440					445				
gtc	gtg	cag	ggc	cct	ggc	ggg	gag	acc	aag	cgt	gct	ccc	gcc	gcc	tgc	1392
Val	Val	Gln	Gly	Pro	Gly	Gly	Glu	Thr	Lys	Arg	Ala	Pro	Ala	Ala	Cys	
	450					455					460					
ttc	tgc	atc	cca	gca	cca	gac	cct	gat	gct	gtg	gcc	agg	gcc	tcc	cgg	1440
Phe	Cys	Ile	Pro	Ala	Pro	Asp	Pro	Asp	Ala	Val	Ala	Arg	Ala	Ser	Arg	
	465				470					475					480	
ctg	gcc	tca	gag	ctg	cag	gcc	ctg	aag	cag	aaa	ttg	gcc	aca	gtc	cag	1488
Leu	Ala	Ser	Glu	Leu	Gln	Ala	Leu	Lys	Gln	Lys	Leu	Ala	Thr	Val	Gln	
				485				490						495		
agc	cgc	ctg	aag	gcc	agt	gct	gtg	gag	tct	ctt	cgg	ccc	agc	cag	cag	1536
Ser	Arg	Leu	Lys	Ala	Ser	Ala	Val	Glu	Ser	Leu	Arg	Pro	Ser	Gln	Gln	
			500					505					510			
gct	cca	tct	ggc	tca	gac	ctg	gcc	aac	cca	cag	gcc	cag	aag	ctc	ctg	1584
Ala	Pro	Ser	Gly	Ser	Asp	Leu	Ala	Asn	Pro	Gln	Ala	Gln	Lys	Leu	Leu	
		515					520					525				
aca	cag	atg	acc	cgg	ctg	gat	gga	gac	ctg	gga	cag	ata	gag	agg	cag	1632
Thr	Gln	Met	Thr	Arg	Leu	Asp	Gly	Asp	Leu	Gly	Gln	Ile	Glu	Arg	Gln	
						535					540					
gtg	ctg	gcc	tgg	gcg	cgg	gcc	ccg	ctg	agc	cgc	ccc	aca	ccc	ttg	gag	1680
Val	Leu	Ala	Trp	Ala	Arg	Ala	Pro	Leu	Ser	Arg	Pro	Thr	Pro	Leu	Glu	
	545				550					555					560	
gac	ttg	gag	ggc	cgc	atc	cac	agc	cat	gag	ggc	aca	gcc	cag	cgc	ctg	1728
Asp	Leu	Glu	Gly	Arg	Ile	His	Ser	His	Glu	Gly	Thr	Ala	Gln	Arg	Leu	
				565					570					575		
cag	agc	ctg	gga	acg	gag	aag	gag	aca	gcc	cag	aag	gag	tgc	gag	gcg	1776
Gln	Ser	Leu	Gly	Thr	Glu	Lys	Glu	Thr	Ala	Gln	Lys	Glu	Cys	Glu	Ala	
			580					585					590			

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ttt	ctg	tcc	acg	cgg	ccc	gtg	ggc	ccc	gct	gcc	ctg	cag	ctg	ccc	gta	1824
Phe	Leu	Ser	Thr	Arg	Pro	Val	Gly	Pro	Ala	Ala	Leu	Gln	Leu	Pro	Val	
		595					600					605				
gcc	ctc	aac	agc	gtg	aag	aac	aag	ttc	agt	gac	gtg	cag	ggt	ctg	tgc	1872
Ala	Leu	Asn	Ser	Val	Lys	Asn	Lys	Phe	Ser	Asp	Val	Gln	Val	Leu	Cys	
	610					615					620					
agc	ctc	tac	ggg	gag	aaa	gcc	aag	gct	gcc	ctg	gat	ctg	gag	cgg	cag	1920
Ser	Leu	Tyr	Gly	Glu	Lys	Ala	Lys	Ala	Ala	Leu	Asp	Leu	Glu	Arg	Gln	
	625				630					635					640	
atc	cag	gat	gcg	gac	agg	gtc	atc	cga	ggc	ttc	gag	gcc	acc	ctg	gtg	1968
Ile	Gln	Asp	Ala	Asp	Arg	Val	Ile	Arg	Gly	Phe	Glu	Ala	Thr	Leu	Val	
				645					650					655		
cag	gag	gcc	ccc	atc	cct	gct	gaa	ccg	ggg	gct	ctg	cag	gag	agg	gtc	2016
Gln	Glu	Ala	Pro	Ile	Pro	Ala	Glu	Pro	Gly	Ala	Leu	Gln	Glu	Arg	Val	
			660					665					670			
agc	gag	ctg	cag	cgc	cag	cgg	agg	gag	ctg	ctg	gaa	cag	cag	acc	tgc	2064
Ser	Glu	Leu	Gln	Arg	Gln	Arg	Arg	Glu	Leu	Leu	Glu	Gln	Gln	Thr	Cys	
		675					680					685				
gtg	ctg	cgg	cta	cac	cgc	gcg	ctg	aag	gcc	tgc	gag	cac	gca	tgc	gct	2112
Val	Leu	Arg	Leu	His	Arg	Ala	Leu	Lys	Ala	Ser	Glu	His	Ala	Cys	Ala	
	690					695					700					
gcc	ctg	cag	aac	aac	ttc	cag	gag	ttc	tgc	caa	gac	ctg	cct	cgc	cag	2160
Ala	Leu	Gln	Asn	Asn	Phe	Gln	Glu	Phe	Cys	Gln	Asp	Leu	Pro	Arg	Gln	
	705				710				715						720	
cag	cgc	cag	gtg	cga	gcc	ctc	acc	gac	cgc	tac	cac	gcc	gta	ggg	gac	2208
Gln	Arg	Gln	Val	Arg	Ala	Leu	Thr	Asp	Arg	Tyr	His	Ala	Val	Gly	Asp	
				725					730					735		
cag	ctg	gac	ctg	cgg	gag	aag	gtg	gtg	cag	gat	gcc	gcc	ctc	acc	tac	2256
Gln	Leu	Asp	Leu	Arg	Glu	Lys	Val	Val	Gln	Asp	Ala	Ala	Leu	Thr	Tyr	
			740				745						750			
cag	cag	ttc	aag	aac	tgc	aag	gat	aac	ctg	agc	tcc	tgg	ctg	gag	cac	2304
Gln	Gln	Phe	Lys	Asn	Cys	Lys	Asp	Asn	Leu	Ser	Ser	Trp	Leu	Glu	His	
		755					760					765				
ctg	ccc	cgc	agc	cag	gtg	cgg	ccc	agc	gac	ggc	ccc	agc	cag	atc	gcc	2352
Leu	Pro	Arg	Ser	Gln	Val	Arg	Pro	Ser	Asp	Gly	Pro	Ser	Gln	Ile	Ala	
	770					775					780					
tac	aag	ctg	cag	gcg	cag	aag	agg	ctg	acg	cag	gag	atc	cag	agc	cga	2400
Tyr	Lys	Leu	Gln	Ala	Gln	Lys	Arg	Leu	Thr	Gln	Glu	Ile	Gln	Ser	Arg	
	785				790				795						800	
gag	cgg	gac	agg	gcc	aca	gca	tcc	cac	ctc	tcc	cag	gcc	ctg	cag	gca	2448
Glu	Arg	Asp	Arg	Ala	Thr	Ala	Ser	His	Leu	Ser	Gln	Ala	Leu	Gln	Ala	
				805					810					815		
gcg	ctc	cag	gac	tat	gag	ctc	cag	gca	gac	acc	tac	cgc	tgc	tct	ttg	2496
Ala	Leu	Gln	Asp	Tyr	Glu	Leu	Gln	Ala	Asp	Thr	Tyr	Arg	Cys	Ser	Leu	
			820					825					830			
gag	ccc	acc	ctg	gca	gtg	tca	gcc	ccc	aag	aga	ccc	cga	gtg	gct	ccc	2544
Glu	Pro	Thr	Leu	Ala	Val	Ser	Ala	Pro	Lys	Arg	Pro	Arg	Val	Ala	Pro	
		835					840					845				
ctg	caa	gag	agc	atc	caa	gcc	cag	gag	aag	aac	ctt	gca	aag	gcc	tat	2592
Leu	Gln	Glu	Ser	Ile	Gln	Ala	Gln	Glu	Lys	Asn	Leu	Ala	Lys	Ala	Tyr	
	850					855					860					

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act gag gtt gca gca gca cag cag cag ctg ctc cag cag ctg gag ttt	2640
Thr Glu Val Ala Ala Ala Gln Gln Gln Leu Leu Gln Gln Leu Glu Phe	
865 870 875 880	
gct aga aaa atg ctg gag aag aag gag ctc agt gag gac atc cga agg	2688
Ala Arg Lys Met Leu Glu Lys Lys Glu Leu Ser Glu Asp Ile Arg Arg	
885 890 895	
acc cat gat gca aag cag ggc tcc gag agc cct gcc caa gca ggg aga	2736
Thr His Asp Ala Lys Gln Gly Ser Glu Ser Pro Ala Gln Ala Gly Arg	
900 905 910	
gag tca gag gcc ctg aag gcc cag ctg gaa gag gag agg aag cgg gtg	2784
Glu Ser Glu Ala Leu Lys Ala Gln Leu Glu Glu Glu Arg Lys Arg Val	
915 920 925	
gcc cgg gtg cag cat gag ctg gag gcg cag agg agc caa ctg ctg cag	2832
Ala Arg Val Gln His Glu Leu Glu Ala Gln Arg Ser Gln Leu Leu Gln	
930 935 940	
ctg agg acc cag cgg ccc ttg gag agg ctg gag gag aag gaa gtg gta	2880
Leu Arg Thr Gln Arg Pro Leu Glu Arg Leu Glu Glu Lys Glu Val Val	
945 950 955 960	
gag ttc tac cgg gac ccc cag ctg gag ggc agc ctg tcc agg gtg aag	2928
Glu Phe Tyr Arg Asp Pro Gln Leu Glu Gly Ser Leu Ser Arg Val Lys	
965 970 975	
gcc cag gtg gag gag gag ggc aag cgg cgg gct gcc ctg cag gca gac	2976
Ala Gln Val Glu Glu Glu Gly Lys Arg Arg Ala Gly Leu Gln Ala Asp	
980 985 990	
ctg gaa gtg gca gcc cag aag gtc gtg cag ctg gaa agc aag agg aag	3024
Leu Glu Val Ala Ala Gln Lys Val Val Gln Leu Glu Ser Lys Arg Lys	
995 1000 1005	
acc atg cag cct cat ctg ctg acc aag gag gtc acc cag gtg gag	3069
Thr Met Gln Pro His Leu Leu Thr Lys Glu Val Thr Gln Val Glu	
1010 1015 1020	
agg gac ccc ggc ctg gac agc cag gcg gcc cag ctc agg atc cag	3114
Arg Asp Pro Gly Leu Asp Ser Gln Ala Ala Gln Leu Arg Ile Gln	
1025 1030 1035	
atc cag cag ctc cgc ggg gag gat gcc gtc atc tcg gcc cgg ctg	3159
Ile Gln Gln Leu Arg Gly Glu Asp Ala Val Ile Ser Ala Arg Leu	
1040 1045 1050	
gaa ggg ctg aag aag gag cta ctg gcc ctt gag aag agg gag gtg	3204
Glu Gly Leu Lys Lys Glu Leu Leu Ala Leu Glu Lys Arg Glu Val	
1055 1060 1065	
gac gtg aag gag aag gtc gtg gtg aaa gag gta gtc aag gtg gag	3249
Asp Val Lys Glu Lys Val Val Val Lys Glu Val Val Lys Val Glu	
1070 1075 1080	
aag aat ctg gaa atg gtc aag gca gcc cag gct ctg agg ctg cag	3294
Lys Asn Leu Glu Met Val Lys Ala Ala Gln Ala Leu Arg Leu Gln	
1085 1090 1095	
atg gag gag gat gct gcg cgg agg aag cag gcg gag gag gct gtg	3339
Met Glu Glu Asp Ala Ala Arg Arg Lys Gln Ala Glu Glu Ala Val	
1100 1105 1110	
gcc aag cta cag gct cgc atc gaa gac ctg gag cgg gct atc agc	3384
Ala Lys Leu Gln Ala Arg Ile Glu Asp Leu Glu Arg Ala Ile Ser	
1115 1120 1125	
tcg gtg gag ccc aag gtc atc gtg aag gag gtg aag aag gtg gag	3429

Ser	Val	Glu	Pro	Lys	Val	Ile	Val	Lys	Glu	Val	Lys	Lys	Val	Glu	
1130						1135					1140				
cag	gac	cca	ggg	ctc	ctc	cag	gag	tcc	tcc	agg	ctg	agg	agc	ctc	3474
Gln	Asp	Pro	Gly	Leu	Leu	Gln	Glu	Ser	Ser	Arg	Leu	Arg	Ser	Leu	
1145						1150					1155				
ctc	gag	gag	gag	agg	acc	aag	aac	gcg	acg	ctg	gcc	agg	gag	ctg	3519
Leu	Glu	Glu	Glu	Arg	Thr	Lys	Asn	Ala	Thr	Leu	Ala	Arg	Glu	Leu	
1160						1165					1170				
agc	gac	ctg	cac	agc	aag	tac	agc	gtg	gtg	gag	aag	cag	agg	ccc	3564
Ser	Asp	Leu	His	Ser	Lys	Tyr	Ser	Val	Val	Glu	Lys	Gln	Arg	Pro	
1175						1180					1185				
aaa	gtg	cag	ctc	cag	gag	cg	gtc	cac	gag	atc	ttc	cag	gtg	gat	3609
Lys	Val	Gln	Leu	Gln	Glu	Arg	Val	His	Glu	Ile	Phe	Gln	Val	Asp	
1190						1195					1200				
ccg	gag	aca	gag	cag	gag	atc	act	cg	ctc	aag	gcc	aag	ctg	cag	3654
Pro	Glu	Thr	Glu	Gln	Glu	Ile	Thr	Arg	Leu	Lys	Ala	Lys	Leu	Gln	
1205						1210					1215				
gag	atg	gcg	ggc	aag	agg	agc	gg	gtg	gag	aag	gag	gtg	gag	aag	3699
Glu	Met	Ala	Gly	Lys	Arg	Ser	Gly	Val	Glu	Lys	Glu	Val	Glu	Lys	
1220						1225					1230				
ctg	ctg	ccc	gac	ctg	gag	gtc	ctg	cg	gcc	cag	aag	ccc	acg	gtg	3744
Leu	Leu	Pro	Asp	Leu	Glu	Val	Leu	Arg	Ala	Gln	Lys	Pro	Thr	Val	
1235						1240					1245				
gag	tac	aag	gag	gtg	acc	cag	gag	gtg	gtg	agg	cat	gag	agg	agc	3789
Glu	Tyr	Lys	Glu	Val	Thr	Gln	Glu	Val	Val	Arg	His	Glu	Arg	Ser	
1250						1255					1260				
ccc	gag	gtg	ctg	cgt	gag	atc	gac	cg	ctg	aag	gct	cag	ctc	aac	3834
Pro	Glu	Val	Leu	Arg	Glu	Ile	Asp	Arg	Leu	Lys	Ala	Gln	Leu	Asn	
1265						1270					1275				
gag	ctc	gtc	aac	agc	cac	gg	cg	tcc	cag	gag	cag	ctc	atc	cg	3879
Glu	Leu	Val	Asn	Ser	His	Gly	Arg	Ser	Gln	Glu	Gln	Leu	Ile	Arg	
1280						1285					1290				
ctg	cag	gg	gag	cg	gac	gag	tgg	agg	cg	gag	cg	gcc	aag	gtg	3924
Leu	Gln	Gly	Glu	Arg	Asp	Glu	Trp	Arg	Arg	Glu	Arg	Ala	Lys	Val	
1295						1300					1305				
gag	acc	aag	acg	gtg	agc	aag	gag	gtg	gtg	cg	cac	gag	aag	gac	3969
Glu	Thr	Lys	Thr	Val	Ser	Lys	Glu	Val	Val	Arg	His	Glu	Lys	Asp	
1310						1315					1320				
ccg	gtg	ctg	gag	aaa	gaa	gca	gag	cg	ctc	cg	cag	gag	gtg	cg	4014
Pro	Val	Leu	Glu	Lys	Glu	Ala	Glu	Arg	Leu	Arg	Gln	Glu	Val	Arg	
1325						1330					1335				
gag	gcg	gcc	cag	aag	agg	cg	gcc	gcg	gag	gac	gcg	gtg	tac	gag	4059
Glu	Ala	Ala	Gln	Lys	Arg	Arg	Ala	Ala	Glu	Asp	Ala	Val	Tyr	Glu	
1340						1345					1350				
ctg	cag	agc	aag	cg	ctg	ctg	ctg	gag	agg	agg	aag	ccc	gag	gag	4104
Leu	Gln	Ser	Lys	Arg	Leu	Leu	Leu	Glu	Arg	Arg	Lys	Pro	Glu	Glu	
1355						1360					1365				
aag	gtg	gtg	gtg	cag	gag	gtg	gtg	gtc	acc	cag	aag	gac	ccg	aag	4149
Lys	Val	Val	Val	Gln	Glu	Val	Val	Val	Thr	Gln	Lys	Asp	Pro	Lys	
1370						1375					1380				
ctg	cg	gag	gag	cac	agc	cg	ctg	agc	gg	agc	ctg	gat	gag	gag	4194
Leu	Arg	Glu	Glu	His	Ser	Arg	Leu	Ser	Gly	Ser	Leu	Asp	Glu	Glu	

1385						1390						1395					
gtg	ggc	cgg	cgg	cgc	cag	cta	gag	ctt	gag	gtg	cag	cag	ctg	cgg			4239
Val	Gly	Arg	Arg	Arg	Gln	Leu	Glu	Leu	Glu	Val	Gln	Gln	Leu	Arg			
	1400					1405					1410						
gcc	ggc	gtg	gag	gag	cag	gag	ggc	ctg	ctc	agc	ttc	cag	gag	gac			4284
Ala	Gly	Val	Glu	Glu	Gln	Glu	Gly	Leu	Leu	Ser	Phe	Gln	Glu	Asp			
	1415					1420					1425						
cgc	agc	aag	aag	ctg	gcc	gtg	gag	agg	gag	ctg	cgg	cag	ctg	acc			4329
Arg	Ser	Lys	Lys	Leu	Ala	Val	Glu	Arg	Glu	Leu	Arg	Gln	Leu	Thr			
	1430					1435					1440						
ttg	agg	atc	cag	gag	ctc	gag	aag	cgg	cct	ccc	acg	gtg	cag	gag			4374
Leu	Arg	Ile	Gln	Glu	Leu	Glu	Lys	Arg	Pro	Pro	Thr	Val	Gln	Glu			
	1445					1450					1455						
aag	atc	atc	atg	gag	gaa	gtg	gtc	aag	ctg	gag	aag	gac	ccg	gac			4419
Lys	Ile	Ile	Met	Glu	Glu	Val	Val	Lys	Leu	Glu	Lys	Asp	Pro	Asp			
	1460					1465					1470						
ctg	gag	aag	tcc	acg	gaa	gcc	ctg	cgg	tgg	gac	ctg	gac	cag	gag			4464
Leu	Glu	Lys	Ser	Thr	Glu	Ala	Leu	Arg	Trp	Asp	Leu	Asp	Gln	Glu			
	1475					1480					1485						
aag	acc	cag	gta	acc	gag	ctg	aat	cgg	gag	tgc	aag	aac	ctg	cag			4509
Lys	Thr	Gln	Val	Thr	Glu	Leu	Asn	Arg	Glu	Cys	Lys	Asn	Leu	Gln			
	1490					1495					1500						
gtc	cag	att	gac	gtc	ctc	cag	aaa	gcc	aaa	tgc	cag	gag	aag	acc			4554
Val	Gln	Ile	Asp	Val	Leu	Gln	Lys	Ala	Lys	Ser	Gln	Glu	Lys	Thr			
	1505					1510					1515						
atc	tac	aag	gaa	gtg	atc	cgg	gtg	cag	aag	gac	cgc	gtc	ctg	gaa			4599
Ile	Tyr	Lys	Glu	Val	Ile	Arg	Val	Gln	Lys	Asp	Arg	Val	Leu	Glu			
	1520					1525					1530						
gat	gag	cgg	gcc	cgc	gtg	tgg	gag	atg	ctc	aac	agg	gag	cgc	acg			4644
Asp	Glu	Arg	Ala	Arg	Val	Trp	Glu	Met	Leu	Asn	Arg	Glu	Arg	Thr			
	1535					1540					1545						
gcc	cgg	cag	gcc	cgg	gag	gag	gag	gca	cgg	cgc	ctg	cgg	gag	cgc			4689
Ala	Arg	Gln	Ala	Arg	Glu	Glu	Glu	Ala	Arg	Arg	Leu	Arg	Glu	Arg			
	1550					1555					1560						
att	gac	cgg	gcc	gag	acg	ctg	ggg	aga	acc	tgg	tcc	cgg	gag	gag			4734
Ile	Asp	Arg	Ala	Glu	Thr	Leu	Gly	Arg	Thr	Trp	Ser	Arg	Glu	Glu			
	1565					1570					1575						
tcc	gag	ctg	cag	agg	gcc	cgg	gac	cag	gcc	gac	cag	gag	tgt	ggg			4779
Ser	Glu	Leu	Gln	Arg	Ala	Arg	Asp	Gln	Ala	Asp	Gln	Glu	Cys	Gly			
	1580					1585					1590						
cgg	ctg	cag	cag	gag	ctg	cgg	gct	ctg	gag	agg	cag	aag	cag	cag			4824
Arg	Leu	Gln	Gln	Glu	Leu	Arg	Ala	Leu	Glu	Arg	Gln	Lys	Gln	Gln			
	1595					1600					1605						
cag	aca	ctg	cag	ctg	cag	gag	gag	tgc	aag	ctg	ctc	agc	cag	aag			4869
Gln	Thr	Leu	Gln	Leu	Gln	Glu	Glu	Ser	Lys	Leu	Leu	Ser	Gln	Lys			
	1610					1615					1620						
acg	gag	agc	gag	cga	cag	aag	gcg	gcc	cag	cgg	ggc	cag	gag	ctc			4914
Thr	Glu	Ser	Glu	Arg	Gln	Lys	Ala	Ala	Gln	Arg	Gly	Gln	Glu	Leu			
	1625					1630					1635						
tcg	cgg	ctg	gag	gcg	gcc	atc	ctc	cgc	gag	aag	gac	cag	atc	tac			4959
Ser	Arg	Leu	Glu	Ala	Ala	Ile	Leu	Arg	Glu	Lys	Asp	Gln	Ile	Tyr			
	1640					1645					1650						



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gag Glu	aag Lys 1655	gag Glu	cgg Arg	acg Thr	ctc Leu	cgg Arg 1660	gac Asp	ctc Leu	cac His	gcc Ala	aag Lys 1665	gtg Val	agc Ser	cgg Arg	5004
gag Glu	gag Glu 1670	ctc Leu	agc Ser	cag Gln	gag Glu	acc Thr 1675	cag Gln	acg Thr	cga Arg	gag Glu	acc Thr 1680	aac Asn	ctt Leu	tcc Ser	5049
acc Thr	aag Lys 1685	atc Ile	tcc Ser	atc Ile	ctg Leu	gaa Glu 1690	ccc Pro	gag Glu	acg Thr	ggg Gly	aag Lys 1695	gac Asp	atg Met	tcc Ser	5094
cca Pro	tac Tyr 1700	gag Glu	gcc Ala	tac Tyr	aag Lys	agg Arg 1705	ggc Gly	atc Ile	atc Ile	gac Asp	agg Arg 1710	ggc Gly	cag Gln	tac Tyr	5139
ttg Leu	cag Gln 1715	ctg Leu	cag Gln	gag Glu	ctc Leu	gag Glu 1720	tgt Cys	gac Asp	tgg Trp	gag Glu	gag Glu 1725	gtc Val	acc Thr	acc Thr	5184
tcg Ser	ggg Gly 1730	ccc Pro	tgt Cys	ggg Gly	gag Glu	gag Glu 1735	tct Ser	gtg Val	ctc Leu	ctg Leu	gac Asp 1740	cgc Arg	aag Lys	agc Ser	5229
ggg Gly	aag Lys 1745	cag Gln	tac Tyr	tcc Ser	atc Ile	gag Glu 1750	gcc Ala	gcc Ala	ctc Leu	cgc Arg	tgc Cys 1755	cgg Arg	cgc Arg	atc Ile	5274
tct Ser	aag Lys 1760	gag Glu	gag Glu	tac Tyr	cat His	ctg Leu 1765	tac Tyr	aag Lys	gac Asp	ggc Gly	cac His 1770	ctg Leu	ccc Pro	atc Ile	5319
tcc Ser	gag Glu 1775	ttt Phe	gcg Ala	ctg Leu	ctt Leu	gta Val 1780	gct Ala	ggg Gly	gag Glu	acc Thr	aag Lys 1785	cca Pro	agc Ser	tcc Ser	5364
tca Ser	ctc Leu 1790	tcc Ser	atc Ile	ggc Gly	tct Ser	atc Ile 1795	atc Ile	tcc Ser	aag Lys	tcc Ser	ccg Pro 1800	ctc Leu	gcc Ala	tcc Ser	5409
ccg Pro	gcc Ala 1805	ccc Pro	cag Gln	agc Ser	acc Thr	agt Ser 1810	ttc Phe	ttc Phe	tct Ser	ccc Pro	agc Ser 1815	ttc Phe	tct Ser	ctc Leu	5454
ggg Gly	ctc Leu 1820	ggg Gly	gat Asp	gac Asp	agc Ser	ttc Phe 1825	cct Pro	atc Ile	gcc Ala	ggg Gly	atc Ile 1830	tat Tyr	gac Asp	aca Thr	5499
acc Thr	aca Thr 1835	gac Asp	aac Asn	aag Lys	tgc Cys	agc Ser 1840	atc Ile	aag Lys	acg Thr	gcc Ala	gtg Val 1845	gcc Ala	aag Lys	aac Asn	5544
atg Met	ctg Leu 1850	gac Asp	ccc Pro	atc Ile	act Thr	ggg Gly 1855	cag Gln	aag Lys	cta Leu	ctg Leu	gag Glu 1860	gcc Ala	cag Gln	gcg Ala	5589
gcc Ala	aca Thr 1865	ggg Gly	ggc Gly	atc Ile	gtg Val	gac Asp 1870	ctg Leu	ctc Leu	agc Ser	cgt Arg	gag Glu 1875	cgc Arg	tac Tyr	tct Ser	5634
gtg Val	cac His 1880	aag Lys	gcg Ala	atg Met	gag Glu	agg Arg 1885	ggc Gly	ctg Leu	atc Ile	gag Glu	aac Asn 1890	acc Thr	tcc Ser	aca Thr	5679
cag Gln	agg Arg 1895	ctg Leu	ctt Leu	aac Asn	gcc Ala	cag Gln 1900	aag Lys	gcc Ala	ttc Phe	acc Thr	ggc Gly 1905	atc Ile	gag Glu	gac Asp	5724

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ccc gtc acc aag aag agg ctc tcg gtg ggc gag gcc gtc cag aag Pro Val Thr Lys Lys Arg Leu Ser Val Gly Glu Ala Val Gln Lys 1910 1915 1920	5769
ggc tgg atg ccc cgg gag agc gtg ctc cca cac ctg cag gtg cag Gly Trp Met Pro Arg Glu Ser Val Leu Pro His Leu Gln Val Gln 1925 1930 1935	5814
cac ctg acc ggg ggg ctc atc gac ccc aag agg aca ggc cgc atc His Leu Thr Gly Gly Leu Ile Asp Pro Lys Arg Thr Gly Arg Ile 1940 1945 1950	5859
ccc atc cag cag gcc ctc ctc tcc ggg atg atc agt gaa gag ctg Pro Ile Gln Gln Ala Leu Leu Ser Gly Met Ile Ser Glu Glu Leu 1955 1960 1965	5904
gcc cag ctc ctg cag gac gag tcc agc tac gag aag gat ttg aca Ala Gln Leu Leu Gln Asp Glu Ser Ser Tyr Glu Lys Asp Leu Thr 1970 1975 1980	5949
gac ccc atc tcc aag gaa cgg ctg agc tac aag gag gcc atg ggc Asp Pro Ile Ser Lys Glu Arg Leu Ser Tyr Lys Glu Ala Met Gly 1985 1990 1995	5994
cgc tgc cgc aaa gac ccc ctg agc ggc ctg ctg ctc ctg cca gcg Arg Cys Arg Lys Asp Pro Leu Ser Gly Leu Leu Leu Leu Pro Ala 2000 2005 2010	6039
gca ctg gag ggg tac cgc tgc tac cgc tcc gcc tcc ccc acc gtc Ala Leu Glu Gly Tyr Arg Cys Tyr Arg Ser Ala Ser Pro Thr Val 2015 2020 2025	6084
ccg cgc tcc ctt cgc Pro Arg Ser Leu Arg 2030	6099

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 <213> Homo sapiens  
 <400> 90

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Gly Ser Pro Ala Lys Gly Ser Pro Lys Gly Ser Pro Ser Arg His Ser  
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Arg Ala Ala Thr Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala  
 35 40 45

Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Arg Leu  
 50 55 60

Gln Gln Asp Arg Leu Asn Ser Glu Gln Ser Gln Ala Leu Gln His Gln  
 65 70 75 80

Gln Glu Thr Gly Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp  
 85 90 95

Leu Phe Leu Asp Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala  
 Seite 518

Glu Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln  
115 120 125

Glu Cys Ala Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro  
130 135 140

Asp Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln  
145 150 155 160

Lys Gln Val Cys Ala Gly Gln Tyr Gly Pro Gly Met Ala Glu Leu Glu  
165 170 175

Gln Gln Ile Ala Glu His Asn Ile Leu Gln Lys Glu Ile Asp Ala Tyr  
180 185 190

Gly Gln Gln Leu Arg Ser Leu Val Gly Pro Asp Ala Ala Thr Ile Arg  
195 200 205

Ser Gln Tyr Arg Asp Leu Leu Lys Ala Ala Ser Trp Arg Gly Gln Ser  
210 215 220

Leu Gly Ser Leu Tyr Thr His Leu Gln Gly Cys Thr Arg Gln Leu Ser  
225 230 235 240

Ala Leu Ala Glu Gln Gln Arg Arg Ile Leu Gln Gln Asp Trp Ser Asp  
245 250 255

Leu Met Ala Asp Pro Ala Gly Val Arg Arg Glu Tyr Glu His Phe Lys  
260 265 270

Gln His Glu Leu Leu Ser Gln Glu Gln Ser Val Asn Gln Leu Glu Asp  
275 280 285

Asp Gly Glu Arg Met Val Glu Leu Arg His Pro Ala Val Gly Pro Ile  
290 295 300

Gln Ala His Gln Glu Ala Leu Lys Met Glu Trp Gln Asn Phe Leu Asn  
305 310 315 320

Leu Cys Ile Cys Gln Glu Thr Gln Leu Gln His Val Glu Asp Tyr Arg  
325 330 335

Arg Phe Gln Glu Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu  
340 345 350

Asn Ser Asn Leu Asp Ala Lys Tyr Ser Pro Ala Pro Gly Gly Pro Pro  
355 360 365

Gly Ala Pro Thr Glu Leu Leu Gln Gln Leu Glu Ala Glu Glu Lys Arg  
370 375 380

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Leu Ala Val Thr Glu Arg Ala Thr Gly Asp Leu Gln Arg Arg Ser Arg  
 385 390 395 400  
 Asp Val Ala Pro Leu Pro Gln Arg Arg Asn Pro Pro Gln Gln Pro Leu  
 405 410 415  
 His Val Asp Ser Ile Cys Asp Trp Asp Ser Gly Glu Val Gln Leu Leu  
 420 425 430  
 Gln Gly Glu Arg Tyr Lys Leu Val Asp Asn Thr Glu Pro His Ala Trp  
 435 440 445  
 Val Val Gln Gly Pro Gly Gly Glu Thr Lys Arg Ala Pro Ala Ala Cys  
 450 455 460  
 Phe Cys Ile Pro Ala Pro Asp Pro Asp Ala Val Ala Arg Ala Ser Arg  
 465 470 475 480  
 Leu Ala Ser Glu Leu Gln Ala Leu Lys Gln Lys Leu Ala Thr Val Gln  
 485 490 495  
 Ser Arg Leu Lys Ala Ser Ala Val Glu Ser Leu Arg Pro Ser Gln Gln  
 500 505 510  
 Ala Pro Ser Gly Ser Asp Leu Ala Asn Pro Gln Ala Gln Lys Leu Leu  
 515 520 525  
 Thr Gln Met Thr Arg Leu Asp Gly Asp Leu Gly Gln Ile Glu Arg Gln  
 530 535 540  
 Val Leu Ala Trp Ala Arg Ala Pro Leu Ser Arg Pro Thr Pro Leu Glu  
 545 550 555 560  
 Asp Leu Glu Gly Arg Ile His Ser His Glu Gly Thr Ala Gln Arg Leu  
 565 570 575  
 Gln Ser Leu Gly Thr Glu Lys Glu Thr Ala Gln Lys Glu Cys Glu Ala  
 580 585 590  
 Phe Leu Ser Thr Arg Pro Val Gly Pro Ala Ala Leu Gln Leu Pro Val  
 595 600 605  
 Ala Leu Asn Ser Val Lys Asn Lys Phe Ser Asp Val Gln Val Leu Cys  
 610 615 620  
 Ser Leu Tyr Gly Glu Lys Ala Lys Ala Ala Leu Asp Leu Glu Arg Gln  
 625 630 635 640  
 Ile Gln Asp Ala Asp Arg Val Ile Arg Gly Phe Glu Ala Thr Leu Val  
 645 650 655

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Gln Glu Ala Pro 660 Ile Pro Ala Glu 665 Pro Gly Ala Leu Gln Glu Arg Val 670

Ser Glu Leu 675 Gln Arg Gln Arg 680 Glu Leu Leu Glu Gln Gln Thr Cys 685

Val Leu Arg Leu His Arg Ala 695 Leu Lys Ala Ser Glu 700 His Ala Cys Ala

Ala Leu Gln Asn Asn Phe 710 Gln Glu Phe Cys Gln 715 Asp Leu Pro Arg Gln 720

Gln Arg Gln Val Arg 725 Ala Leu Thr Asp Arg 730 Tyr His Ala Val Gly 735 Asp

Gln Leu Asp Leu 740 Arg Glu Lys Val Val 745 Gln Asp Ala Ala Leu 750 Thr Tyr

Gln Gln Phe 755 Lys Asn Cys Lys Asp 760 Asn Leu Ser Ser Trp 765 Leu Glu His

Leu Pro Arg Ser Gln Val Arg 775 Pro Ser Asp Gly Pro 780 Ser Gln Ile Ala

Tyr 785 Lys Leu Gln Ala Gln 790 Lys Arg Leu Thr Gln 795 Glu Ile Gln Ser Arg 800

Glu Arg Asp Arg Ala 805 Thr Ala Ser His Leu 810 Ser Gln Ala Leu Gln 815 Ala

Ala Leu Gln Asp 820 Tyr Glu Leu Gln Ala 825 Asp Thr Tyr Arg Cys 830 Ser Leu

Glu Pro Thr 835 Leu Ala Val Ser Ala 840 Pro Lys Arg Pro Arg 845 Val Ala Pro

Leu Gln 850 Glu Ser Ile Gln Ala 855 Gln Glu Lys Asn Leu 860 Ala Lys Ala Tyr

Thr 865 Glu Val Ala Ala Ala 870 Gln Gln Gln Leu Leu 875 Gln Gln Leu Glu Phe 880

Ala Arg Lys Met Leu 885 Glu Lys Lys Glu Leu 890 Ser Glu Asp Ile Arg 895 Arg

Thr His Asp Ala 900 Lys Gln Gly Ser Glu 905 Ser Pro Ala Gln Ala 910 Gly Arg

Glu Ser Glu 915 Ala Leu Lys Ala Gln 920 Leu Glu Glu Glu Arg 925 Lys Arg Val

Ala Arg Val Gln His Glu Leu Glu Ala Gln Arg Ser Gln Leu Leu Gln  
 930 935 940  
  
 Leu Arg Thr Gln Arg Pro Leu Glu Arg Leu Glu Glu Lys Glu Val Val  
 945 950 955 960  
  
 Glu Phe Tyr Arg Asp Pro Gln Leu Glu Gly Ser Leu Ser Arg Val Lys  
 965 970 975  
  
 Ala Gln Val Glu Glu Glu Gly Lys Arg Arg Ala Gly Leu Gln Ala Asp  
 980 985 990  
  
 Leu Glu Val Ala Ala Gln Lys Val Val Gln Leu Glu Ser Lys Arg Lys  
 995 1000 1005  
  
 Thr Met Gln Pro His Leu Leu Thr Lys Glu Val Thr Gln Val Glu  
 1010 1015 1020  
  
 Arg Asp Pro Gly Leu Asp Ser Gln Ala Ala Gln Leu Arg Ile Gln  
 1025 1030 1035  
  
 Ile Gln Gln Leu Arg Gly Glu Asp Ala Val Ile Ser Ala Arg Leu  
 1040 1045 1050  
  
 Glu Gly Leu Lys Lys Glu Leu Leu Ala Leu Glu Lys Arg Glu Val  
 1055 1060 1065  
  
 Asp Val Lys Glu Lys Val Val Val Lys Glu Val Val Lys Val Glu  
 1070 1075 1080  
  
 Lys Asn Leu Glu Met Val Lys Ala Ala Gln Ala Leu Arg Leu Gln  
 1085 1090 1095  
  
 Met Glu Glu Asp Ala Ala Arg Arg Lys Gln Ala Glu Glu Ala Val  
 1100 1105 1110  
  
 Ala Lys Leu Gln Ala Arg Ile Glu Asp Leu Glu Arg Ala Ile Ser  
 1115 1120 1125  
  
 Ser Val Glu Pro Lys Val Ile Val Lys Glu Val Lys Lys Val Glu  
 1130 1135 1140  
  
 Gln Asp Pro Gly Leu Leu Gln Glu Ser Ser Arg Leu Arg Ser Leu  
 1145 1150 1155  
  
 Leu Glu Glu Glu Arg Thr Lys Asn Ala Thr Leu Ala Arg Glu Leu  
 1160 1165 1170  
  
 Ser Asp Leu His Ser Lys Tyr Ser Val Val Glu Lys Gln Arg Pro  
 1175 1180 1185  
  
 Lys Val Gln Leu Gln Glu Arg Val His Glu Ile Phe Gln Val Asp  
 1190 1195

1190															
Pro	Glu	Thr	Glu	Gln	Glu	Ile	Thr	Arg	Leu	Lys	Ala	Lys	Leu	Gln	
	1205					1210					1215				
Glu	Met	Ala	Gly	Lys	Arg	Ser	Gly	Val	Glu	Lys	Glu	Val	Glu	Lys	
	1220					1225					1230				
Leu	Leu	Pro	Asp	Leu	Glu	Val	Leu	Arg	Ala	Gln	Lys	Pro	Thr	Val	
	1235					1240					1245				
Glu	Tyr	Lys	Glu	Val	Thr	Gln	Glu	Val	Val	Arg	His	Glu	Arg	Ser	
	1250					1255					1260				
Pro	Glu	Val	Leu	Arg	Glu	Ile	Asp	Arg	Leu	Lys	Ala	Gln	Leu	Asn	
	1265					1270					1275				
Glu	Leu	Val	Asn	Ser	His	Gly	Arg	Ser	Gln	Glu	Gln	Leu	Ile	Arg	
	1280					1285					1290				
Leu	Gln	Gly	Glu	Arg	Asp	Glu	Trp	Arg	Arg	Glu	Arg	Ala	Lys	Val	
	1295					1300					1305				
Glu	Thr	Lys	Thr	Val	Ser	Lys	Glu	Val	Val	Arg	His	Glu	Lys	Asp	
	1310					1315					1320				
Pro	Val	Leu	Glu	Lys	Glu	Ala	Glu	Arg	Leu	Arg	Gln	Glu	Val	Arg	
	1325					1330					1335				
Glu	Ala	Ala	Gln	Lys	Arg	Arg	Ala	Ala	Glu	Asp	Ala	Val	Tyr	Glu	
	1340					1345					1350				
Leu	Gln	Ser	Lys	Arg	Leu	Leu	Leu	Glu	Arg	Arg	Lys	Pro	Glu	Glu	
	1355					1360					1365				
Lys	Val	Val	Val	Gln	Glu	Val	Val	Val	Thr	Gln	Lys	Asp	Pro	Lys	
	1370					1375					1380				
Leu	Arg	Glu	Glu	His	Ser	Arg	Leu	Ser	Gly	Ser	Leu	Asp	Glu	Glu	
	1385					1390					1395				
Val	Gly	Arg	Arg	Arg	Gln	Leu	Glu	Leu	Glu	Val	Gln	Gln	Leu	Arg	
	1400					1405					1410				
Ala	Gly	Val	Glu	Glu	Gln	Glu	Gly	Leu	Leu	Ser	Phe	Gln	Glu	Asp	
	1415					1420					1425				
Arg	Ser	Lys	Lys	Leu	Ala	Val	Glu	Arg	Glu	Leu	Arg	Gln	Leu	Thr	
	1430					1435					1440				
Leu	Arg	Ile	Gln	Glu	Leu	Glu	Lys	Arg	Pro	Pro	Thr	Val	Gln	Glu	
	1445					1450					1455				

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Lys Ile Ile Met Glu Glu Val Val Lys Leu Glu Lys Asp Pro Asp  
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 Leu Glu Lys Ser Thr Glu Ala Leu Arg Trp Asp Leu Asp Gln Glu  
 1475 1480 1485  
 Lys Thr Gln Val Thr Glu Leu Asn Arg Glu Cys Lys Asn Leu Gln  
 1490 1495 1500  
 Val Gln Ile Asp Val Leu Gln Lys Ala Lys Ser Gln Glu Lys Thr  
 1505 1510 1515  
 Ile Tyr Lys Glu Val Ile Arg Val Gln Lys Asp Arg Val Leu Glu  
 1520 1525 1530  
 Asp Glu Arg Ala Arg Val Trp Glu Met Leu Asn Arg Glu Arg Thr  
 1535 1540 1545  
 Ala Arg Gln Ala Arg Glu Glu Glu Ala Arg Arg Leu Arg Glu Arg  
 1550 1555 1560  
 Ile Asp Arg Ala Glu Thr Leu Gly Arg Thr Trp Ser Arg Glu Glu  
 1565 1570 1575  
 Ser Glu Leu Gln Arg Ala Arg Asp Gln Ala Asp Gln Glu Cys Gly  
 1580 1585 1590  
 Arg Leu Gln Gln Glu Leu Arg Ala Leu Glu Arg Gln Lys Gln Gln  
 1595 1600 1605  
 Gln Thr Leu Gln Leu Gln Glu Glu Ser Lys Leu Leu Ser Gln Lys  
 1610 1615 1620  
 Thr Glu Ser Glu Arg Gln Lys Ala Ala Gln Arg Gly Gln Glu Leu  
 1625 1630 1635  
 Ser Arg Leu Glu Ala Ala Ile Leu Arg Glu Lys Asp Gln Ile Tyr  
 1640 1645 1650  
 Glu Lys Glu Arg Thr Leu Arg Asp Leu His Ala Lys Val Ser Arg  
 1655 1660 1665  
 Glu Glu Leu Ser Gln Glu Thr Gln Thr Arg Glu Thr Asn Leu Ser  
 1670 1675 1680  
 Thr Lys Ile Ser Ile Leu Glu Pro Glu Thr Gly Lys Asp Met Ser  
 1685 1690 1695  
 Pro Tyr Glu Ala Tyr Lys Arg Gly Ile Ile Asp Arg Gly Gln Tyr  
 1700 1705 1710



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Leu	Gln	Leu	Gln	Glu	Leu	Glu	Cys	Asp	Trp	Glu	Glu	Val	Thr	Thr
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Ser	Gly	Pro	Cys	Gly	Glu	Glu	Ser	Val	Leu	Leu	Asp	Arg	Lys	Ser
	1730					1735					1740			
Gly	Lys	Gln	Tyr	Ser	Ile	Glu	Ala	Ala	Leu	Arg	Cys	Arg	Arg	Ile
	1745					1750					1755			
Ser	Lys	Glu	Glu	Tyr	His	Leu	Tyr	Lys	Asp	Gly	His	Leu	Pro	Ile
	1760					1765					1770			
Ser	Glu	Phe	Ala	Leu	Leu	Val	Ala	Gly	Glu	Thr	Lys	Pro	Ser	Ser
	1775					1780					1785			
Ser	Leu	Ser	Ile	Gly	Ser	Ile	Ile	Ser	Lys	Ser	Pro	Leu	Ala	Ser
	1790					1795					1800			
Pro	Ala	Pro	Gln	Ser	Thr	Ser	Phe	Phe	Ser	Pro	Ser	Phe	Ser	Leu
	1805					1810					1815			
Gly	Leu	Gly	Asp	Asp	Ser	Phe	Pro	Ile	Ala	Gly	Ile	Tyr	Asp	Thr
	1820					1825					1830			
Thr	Thr	Asp	Asn	Lys	Cys	Ser	Ile	Lys	Thr	Ala	Val	Ala	Lys	Asn
	1835					1840					1845			
Met	Leu	Asp	Pro	Ile	Thr	Gly	Gln	Lys	Leu	Leu	Glu	Ala	Gln	Ala
	1850					1855					1860			
Ala	Thr	Gly	Gly	Ile	Val	Asp	Leu	Leu	Ser	Arg	Glu	Arg	Tyr	Ser
	1865					1870					1875			
Val	His	Lys	Ala	Met	Glu	Arg	Gly	Leu	Ile	Glu	Asn	Thr	Ser	Thr
	1880					1885					1890			
Gln	Arg	Leu	Leu	Asn	Ala	Gln	Lys	Ala	Phe	Thr	Gly	Ile	Glu	Asp
	1895					1900					1905			
Pro	Val	Thr	Lys	Lys	Arg	Leu	Ser	Val	Gly	Glu	Ala	Val	Gln	Lys
	1910					1915					1920			
Gly	Trp	Met	Pro	Arg	Glu	Ser	Val	Leu	Pro	His	Leu	Gln	Val	Gln
	1925					1930					1935			
His	Leu	Thr	Gly	Gly	Leu	Ile	Asp	Pro	Lys	Arg	Thr	Gly	Arg	Ile
	1940					1945					1950			
Pro	Ile	Gln	Gln	Ala	Leu	Leu	Ser	Gly	Met	Ile	Ser	Glu	Glu	Leu
	1955					1960					1965			

Ala Gln Leu Leu Gln Asp Glu Ser Ser Tyr Glu Lys Asp Leu Thr  
1970 1975 1980

Asp Pro Ile Ser Lys Glu Arg Leu Ser Tyr Lys Glu Ala Met Gly  
1985 1990 1995

Arg Cys Arg Lys Asp Pro Leu Ser Gly Leu Leu Leu Leu Pro Ala  
2000 2005 2010

Ala Leu Glu Gly Tyr Arg Cys Tyr Arg Ser Ala Ser Pro Thr Val  
2015 2020 2025

Pro Arg Ser Leu Arg  
2030

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Gly Ser Pro Ala Lys Gly Ser Pro Lys Gly Ser Pro Asn Lys His Asn  
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cgg gct gca acc cag gaa ctg gct ctg ctc atc tcc cgc atg caa gcc 144  
Arg Ala Ala Thr Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala  
35 40 45  
aac gct gac cag gtg gaa aga gac att ttg gag acg cag aag aag ctg 192  
Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Lys Leu  
50 55 60  
caa cag gat cgg cag aat ggt gag cag aac cag gct tta caa cac cag 240  
Gln Gln Asp Arg Gln Asn Gly Glu Gln Asn Gln Ala Leu Gln His Gln  
65 70 75 80  
cag gag act ggc cgc aac ctg aag gaa gcg gag gta ctc ctc aaa gat 288  
Gln Glu Thr Gly Arg Asn Leu Lys Glu Ala Glu Val Leu Leu Lys Asp  
85 90 95  
ctc ttc ctg gat gta gac aag gcg cgg cgc ctc aag cac cca cag gct 336  
Leu Phe Leu Asp Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala  
100 105 110  
gag gag att gag aaa gac atc aag cag ctg cat gag cgg gtg acc cag 384  
Glu Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln  
115 120 125  
gag tgc tgc gag tac cgt gct ctg tat gag aag atg gta ctt ccg cct 432  
Glu Cys Ser Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro  
130 135 140  
gat gtg ggg ccc agg gtc gac tgg gcg cgt gtg ttg gag cag aaa cag 480  
Asp Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln

145	150								155								160							
aat Asn	ctg Leu	gtc Val	cgt Arg	gag Glu 165	ggc Gly	cac His	tat Tyr	ggg Gly	cct Pro 170	ggg Gly	atg Met	gca Ala	gag Glu	ctg Leu 175	gaa Glu	528								
cag Gln	cag Gln	gtg Val	gcc Ala 180	gag Glu	cac His	aac Asn	atc Ile	ctg Leu 185	cag Gln	aga Arg	gaa Glu	atc Ile	gag Glu 190	gct Ala	tac Tyr	576								
ggg Gly	cag Gln	cag Gln 195	ctg Leu	cgg Arg	acg Thr	ctg Leu	gtg Val 200	gga Gly	ccg Pro	gat Asp	gca Ala	aac Asn 205	acc Thr	atc Ile	agg Arg	624								
aac Asn	caa Gln 210	tac Tyr	cgt Arg	gag Glu	ctg Leu	ctg Leu 215	aag Lys	gcg Ala	gcc Ala	tcg Ser	tgg Trp 220	cgc Arg	cga Arg	cag Gln	agt Ser	672								
ctg Leu 225	ggc Gly	agc Ser	ctg Leu	tac Tyr	acc Thr 230	cac His	ctg Leu	caa Gln	ggc Gly	tgc Cys 235	acg Thr	aag Lys	cag Gln	ctg Leu	agc Ser 240	720								
gcc Ala	ctg Leu	gcc Ala	gat Asp	caa Gln 245	caa Gln	ggc Gly	cgc Arg	atc Ile	ctg Leu 250	cag Gln	cag Gln	gat Asp	tgg Trp	agt Ser 255	gac Asp	768								
ctc Leu	atg Met	ccg Pro	gac Asp 260	ccc Pro	gct Ala	ggc Gly	gtg Val	agg Arg 265	cga Arg	gag Glu	tat Tyr	gaa Glu	cac His 270	ttc Phe	aag Lys	816								
cag Gln	cat His	gag Glu 275	ctg Leu	ctg Leu	gcc Ala	cag Gln	gaa Glu 280	cgg Arg	aac Asn	ata Ile	aac Asn	cag Gln 285	ctg Leu	gaa Glu	gat Asp	864								
gac Asp	gca Ala 290	gat Asp	cgc Arg	atg Met	gtg Val	gaa Glu 295	ctt Leu	ggg Gly	cac His	ccg Pro	gcc Ala 300	att Ile	ggg Gly	ccc Pro	atc Ile	912								
caa Gln 305	gtc Val	cac His	cag Gln	gag Glu	gcc Ala 310	ctc Leu	aag Lys	atg Met	gag Glu	tgg Trp 315	cag Gln	aat Asn	ttc Phe	cta Leu	aac Asn 320	960								
ctt Leu	tgc Cys	atc Ile	tgt Cys	cag Gln 325	gag Glu	agc Ser	cag Gln	ctg Leu	caa Gln 330	cgg Arg	gtg Val	gag Glu	gac Asp	tac Tyr 335	cgt Arg	1008								
agg Arg	ttc Phe	cag Gln	gaa Glu 340	gag Glu	gcg Ala	gac Asp	tca Ser	gtc Val 345	agc Ser	cag Gln	acc Thr	ctg Leu	gca Ala 350	aag Lys	ctc Leu	1056								
agc Ser	tcc Ser	aac Asn 355	ctg Leu	gat Asp	acc Thr	aag Lys	tac Tyr 360	ggc Gly	ttt Phe	ggc Gly	act Thr	ggg Gly 365	gac Asp	tcc Ser	tcc Ser	1104								
ggc Gly	tcc Ser 370	ccc Pro	aca Thr	gag Glu	ctc Leu	ctg Leu 375	cta Leu	cag Gln	ctg Leu	gag Glu	gca Ala 380	gag Glu	gag Glu	aag Lys	cag Gln	1152								
ctg Leu 385	gcc Ala	ata Ile	gca Ala	gag Glu	agg Arg 390	gct Ala	gtt Val	gga Gly	gat Asp	ctg Leu 395	cag Gln	cag Gln	cga Arg	agc Ser	cag Gln 400	1200								
gag Glu	gtg Val	gcc Ala	cca Pro	ctg Leu 405	cca Pro	cag Gln	cgc Arg	agg Arg	aac Asn 410	cca Pro	tcc Ser	aag Lys	cag Gln	ccc Pro 415	ctg Leu	1248								
cac His	gtg Val	gac Asp	agc Ser 420	atc Ile	tgt Cys	gac Asp	tgg Trp	gac Asp 425	tcg Ser	gga Gly	gaa Glu	gtt Val	cag Gln 430	ctg Leu	ctt Leu	1296								

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cg	g	g	g	g	t	a	c	g	a	a	g	c	c	t	a	a	c	t	g	g		1344
Arg	Gly	Glu	Arg	Cys	Thr	Leu	Lys	Asp	Asn	Ala	Asp	Pro	Tyr	Thr	Trp							
		435					440					445										
ct	g	g	c	c	g	g	g	a	a	a	g	g	c	c	g	g	t					1392
Leu	Val	Gln	Gly	Pro	Gly	Gly	Glu	Thr	Lys	Ser	Ala	Pro	Ala	Ala	Cys							
	450					455					460											
ct	t	a	c	c	g	c	c	g	a	g	g	a	g	c	t	a	g					1440
Leu	Trp	Ile	Pro	Ala	Pro	Asp	Pro	Glu	Ala	Val	Gly	Lys	Ala	Ser	Arg							
	465				470					475					480							
ct	g	a	c	g	c	a	a	c	c	a	a	c	t	a	g	a						1488
Leu	Ala	Thr	Glu	Leu	Gln	Thr	Leu	Lys	Gln	Lys	Leu	Ser	Thr	Glu	Lys							
				485					490					495								
a	c	c	t	g	g	g	g	a	c	t	c	c	g	c	c	c						1536
Asn	Arg	Leu	Lys	Ala	Ala	Ala	Val	Glu	His	Leu	Gln	Pro	Gly	Gln	Gln							
			500					505					510									
g	c	g	a	t	g	c	c	g	a	c	a	g	c	a	c	c						1584
Ala	Pro	Ala	Gly	Ser	Ala	Pro	Ala	Asp	Pro	Gln	Gly	Gln	Thr	Leu	Leu							
		515					520					525										
t	c	a	a	c	c	g	g	g	a	c	g	a	g	a	c	c						1632
Ser	Gln	Met	Thr	Gln	Leu	Asp	Gly	Asp	Leu	Gly	Gln	Ile	Glu	Arg	Gln							
	530					535					540											
g	t	c	a	g	c	a	a	c	a	c	t	t	t	t	c	a						1680
Val	Leu	Ser	Trp	Ala	Arg	Ser	Pro	Leu	Ser	Gln	Ser	Ser	Ser	Leu	Lys							
	545				550					555					560							
g	c	g	g	c	a	c	a	t	g	g	a	a	g	c	c	c						1728
Asp	Leu	Glu	Gly	Arg	Ile	His	Ser	Cys	Glu	Gly	Thr	Ala	Gln	Arg	Leu							
				565					570					575								
c	a	g	g	g	g	a	g	g	a	c	c	g	g	t	g	g						1776
Gln	Ser	Leu	Gly	Ala	Glu	Lys	Glu	Ala	Ala	Gln	Gln	Glu	Cys	Ala								
			580				585					590										
t	t	t	a	a	c	a	g	t	g	g	g	c	a	c	c	g						1824
Phe	Leu	Ser	Thr	Lys	Pro	Thr	Gly	Ser	Ala	Ala	Val	Gln	Leu	Pro	Val							
		595					600					605										
g	t	c	a	g	a	a	a	t	a	g	g	c	a	a	c	t						1872
Val	Phe	His	Ser	Val	Lys	Asn	Arg	Tyr	Asn	Asp	Val	Gln	Ser	Leu	Cys							
	610					615					620											
c	c	t	t	g	a	g	a	g	g	c	c	c	g	a	a	c						1920
His	Leu	Tyr	Gly	Glu	Lys	Ala	Lys	Ala	Ala	Leu	Gly	Leu	Glu	Lys	Gln							
	625				630					635					640							
a	c	g	g	a	a	g	a	c	a	g	t	t	g	g	c	g						1968
Ile	Gln	Glu	Ala	Asp	Arg	Val	Ile	Gln	Gly	Phe	Glu	Ala	Ala	Leu	Ala							
				645					650					655								
c	t	g	c	c	g	g	t	g	g	g	a	c	c	c	a	g						2016
Leu	Glu	Gly	Pro	Val	Pro	Glu	Gly	Ser	Gly	Ala	Leu	Gln	Glu	Arg	Val							
			660					665					670									
a	g	g	c	c	c	a	a	g	c	c	c	c	c	g	c	t						2064
Ser	Glu	Leu	Gln	Arg	Gln	Arg	Lys	Glu	Leu	Leu	Gln	Gln	Gln	Ala	Cys							
		675					680					685										
g	t	g	c	c	c	c	c	a	g	c	a	c	c	g	t							2112
Val	Leu	Gly	Leu	His	Arg	Gln	Leu	Lys	Ala	Thr	Glu	His	Ala	Cys	Ser							
		690				695					700											

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gcg Ala 705	ctg Leu	cag Gln	aac Asn	aat Asn	ttc Phe 710	caa Gln	gag Glu	ttc Phe	tgc Cys	caa Gln 715	gac Asp	ctg Leu	ccg Pro	cgc Arg	cag Gln 720	2160
cag Gln	cgc Arg	cag Gln	gtt Val	cgt Arg 725	gcc Ala	ctc Leu	act Thr	gac Asp	cgt Arg 730	tac Tyr	cac His	gct Ala	gtg Val	ggg Gly 735	gac Asp	2208
cag Gln	ctg Leu	gat Asp	ttg Leu 740	agg Arg	gag Glu	aag Lys	ata Ile	gta Val 745	cag Gln	gat Asp	gcc Ala	agc Ser	ctc Leu 750	acc Thr	tac Tyr	2256
cag Gln	cag Gln	ctc Leu 755	agg Arg	aac Asn	agc Ser	agg Arg	gac Asp 760	aac Asn	ctg Leu	agc Ser	tct Ser	tgg Trp 765	ctg Leu	gag Glu	cag Gln	2304
ctg Leu	ccc Pro 770	cac His	cac His	cgg Arg	gtg Val	cag Gln 775	ccc Pro	agc Ser	gac Asp	ggg Gly	cca Pro 780	agc Ser	cag Gln	att Ile	tcc Ser	2352
tac Tyr 785	aag Lys	ctg Leu	caa Gln	gca Ala	cag Gln 790	aag Lys	aga Arg	ctg Leu	ata Ile	caa Gln 795	gaa Glu	atc Ile	ctg Leu	ggg Gly	cgc Arg 800	2400
gag Glu	cag Gln	gac Asp	cag Gln	gcc Ala 805	acc Thr	gtg Val	tcc Ser	cgc Arg	ctc Leu 810	acc Thr	cgg Arg	gac Asp	ctg Leu	cag Gln 815	gag Glu	2448
gcc Ala	ctc Leu	caa Gln	gac Asp 820	tat Tyr	gag Glu	ctg Leu	caa Gln	gca Ala 825	gat Asp	acc Thr	tac Tyr	cgc Arg	tgc Cys 830	tcc Ser	tta Leu	2496
gaa Glu	ccc Pro	gcc Ala 835	ttg Leu	gca Ala	gtg Val	tcc Ser	gcc Ala 840	ccg Pro	aaa Lys	gaa Glu	ctc Leu	aga Arg 845	gtg Val	att Ile	tcc Ser	2544
ttg Leu	cag Gln 850	gag Glu	aac Asn	atc Ile	cag Gln	gct Ala 855	cag Gln	gag Glu	aat Asn	aac Asn	ctt Leu 860	gcg Ala	aag Lys	gct Ala	tac Tyr	2592
act Thr 865	gag Glu	gtt Val	gcc Ala	gca Ala	gct Ala 870	gag Glu	cag Gln	cag Gln	cag Gln	ctg Leu 875	cgc Arg	cag Gln	ctg Leu	gag Glu	ttt Phe 880	2640
gct Ala	aaa Lys	aag Lys	atg Met	ctc Leu 885	agg Arg	aag Lys	aag Lys	gaa Glu	ctt Leu 890	gat Asp	gag Glu	gac Asp	atc Ile	caa Gln 895	gcc Ala	2688
atc Ile	cac His	agc Ser	gcg Ala 900	aga Arg	cag Gln	gga Gly	tct Ser	ggg Gly 905	agt Ser	ccg Pro	gca Ala	cac His	gca Ala 910	agg Arg	acg Thr	2736
gcg Ala	gag Glu	tca Ser 915	gag Glu	gtc Val	ctg Leu	aag Lys	acc Thr 920	cag Gln	ctt Leu	gag Glu	gaa Glu	gag Glu	agg Arg	aag Lys	cgg Arg	2784
gtg Val	gct Ala 930	gag Glu	gtg Val	cag Gln	cgt Arg	gac Asp 935	ctg Leu	gag Glu	gag Glu	cag Gln	agg Arg 940	cag Gln	cgg Arg	ctg Leu	ctg Leu	2832
cag Gln 945	ctg Leu	agg Arg	acc Thr	cag Gln	cag Gln 950	cct Pro	gtg Val	gcg Ala	cgg Arg	ctg Leu 955	gag Glu	gag Glu	aag Lys	gaa Glu	gtg Val 960	2880
gtg Val	gaa Glu	ttc Phe	tac Tyr	cgg Arg 965	gac Asp	ccc Pro	cag Gln	ctg Leu	gag Glu 970	agt Ser	aac Asn	ctg Leu	tct Ser	cag Gln 975	gca Ala	2928
gca	tcc	cgg	gtg	gag	gaa	gag	ggc	aag	agg	cgg	gcc	cgc	ttg	cag	gcc	2976

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aac cca gag gtg ctg cgg gag atc gac cgt ctc aag gct cag ctc Asn Pro Glu Val Leu Arg Glu Ile Asp Arg Leu Lys Ala Gln Leu	1265	1270	1275	3834
aac gaa ctg gtc aac acc aac ggg cgc tct cag gag cag ctc atc Asn Glu Leu Val Asn Thr Asn Gly Arg Ser Gln Glu Gln Leu Ile	1280	1285	1290	3879
cgg ctc cag ggc gaa cgc gat gag tgg aag cgg gaa agg tcc aag Arg Leu Gln Gly Glu Arg Asp Glu Trp Lys Arg Glu Arg Ser Lys	1295	1300	1305	3924
gtg gag acc aag atg gtg agc aaa gaa gtc gtg cgg cac gag aag Val Glu Thr Lys Met Val Ser Lys Glu Val Val Arg His Glu Lys	1310	1315	1320	3969
gat ccg gtg ctg gag aag gag gcc gag agg ctc cgg cag gag gtg Asp Pro Val Leu Glu Lys Glu Ala Glu Arg Leu Arg Gln Glu Val	1325	1330	1335	4014
cgg gag gct gtc cag agg agg cga gcc acg gag gat gct gtg tac Arg Glu Ala Val Gln Arg Arg Ala Thr Glu Asp Ala Val Tyr	1340	1345	1350	4059
gag ctg cag aac aag tta ctg ctg ctg gag agg agg cgg ccc gag Glu Leu Gln Asn Lys Leu Leu Leu Glu Arg Arg Arg Pro Glu	1355	1360	1365	4104
gag cag ata gtg gtg cag gag gtg gtg gtc acc cag aag gac ccg Glu Gln Ile Val Val Gln Glu Val Val Val Thr Gln Lys Asp Pro	1370	1375	1380	4149
aag ctg cgc gag gag cac agc cgg ctg agc cgc agc ttg gat gag Lys Leu Arg Glu Glu His Ser Arg Leu Ser Arg Ser Leu Asp Glu	1385	1390	1395	4194
gag gtg ggg cgc cgg cgg cag ctg gag ctg gag gtg cgg cag ctg Glu Val Gly Arg Arg Arg Gln Leu Glu Leu Glu Val Arg Gln Leu	1400	1405	1410	4239
ggc gcc aga gtt gag gag gag gag gcc agg ctc agc ttc gag gag Gly Ala Arg Val Glu Glu Glu Glu Ala Arg Leu Ser Phe Glu Glu	1415	1420	1425	4284
gat cgc agc aag aag ctg gcc gcc gag agg gag ctg cgg caa ctg Asp Arg Ser Lys Lys Leu Ala Ala Glu Arg Glu Leu Arg Gln Leu	1430	1435	1440	4329
acc ctg aag atc cag gag ctg gag gag aag cgg ccc cct gcc ctg cag Thr Leu Lys Ile Gln Glu Leu Glu Glu Lys Arg Pro Pro Ala Leu Gln	1445	1450	1455	4374
gaa aag atc atc atg gag gaa gtg gtc aag tta gag aaa gat cct Glu Lys Ile Ile Met Glu Glu Val Val Lys Leu Glu Lys Asp Pro	1460	1465	1470	4419
gac ctg gag agg tct aca gaa gct ctg cgg cgc gag ctg gat cag Asp Leu Glu Arg Ser Thr Glu Ala Leu Arg Arg Glu Leu Asp Gln	1475	1480	1485	4464
gag aag aac cgc gtg acc gag ctg cac cgg gag tgc cag ggt ctg Glu Lys Asn Arg Val Thr Glu Leu His Arg Glu Cys Gln Gly Leu	1490	1495	1500	4509

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cag Gln	gtt Val 1505	cag Gln	gtc Val	gac Asp	ctc Leu	ctc Leu 1510	cag Gln	aaa Lys	act Thr	aaa Lys	tca Ser 1515	cag Gln	gag Glu	aag Lys	4554
acc Thr	ata Ile 1520	tac Tyr	aag Lys	gaa Glu	gtg Val	atc Ile 1525	agg Arg	gtc Val	gag Glu	aag Lys	gac Asp 1530	ccg Pro	gtg Val	ctg Leu	4599
gag Glu	ggc Gly 1535	gag Glu	agg Arg	gcc Ala	cga Arg	gtg Val 1540	tgg Trp	gag Glu	atc Ile	ctt Leu	aac Asn 1545	cgg Arg	gag Glu	cgc Arg	4644
gca Ala	gcc Ala 1550	cgc Arg	aag Lys	ggc Gly	cgg Arg	gag Glu 1555	gag Glu	gat Asp	gtc Val	cgg Arg	agc Ser 1560	ttg Leu	cag Gln	gag Glu	4689
cgg Arg	atc Ile 1565	gac Asp	cga Arg	gcc Ala	gag Glu	gct Ala 1570	ctg Leu	agg Arg	agg Arg	tcc Ser	tgg Trp 1575	tcc Ser	cgc Arg	gag Glu	4734
gaa Glu	gct Ala 1580	gag Glu	ctc Leu	cag Gln	agg Arg	gcc Ala 1585	cgg Arg	gac Asp	cag Gln	gca Ala	agc Ser 1590	cag Gln	gac Asp	tgc Cys	4779
ggg Gly	cgg Arg 1595	ctg Leu	cag Gln	aga Arg	cag Gln	ctg Leu 1600	cgg Arg	gag Glu	ctg Leu	gag Glu	cag Gln 1605	cag Gln	aaa Lys	cag Gln	4824
cag Gln	aaa Lys 1610	gcc Ala	cgg Arg	cag Gln	cta Leu	cag Gln 1615	gag Glu	gag Glu	ggg Gly	agg Arg	ctg Leu 1620	ctt Leu	agc Ser	cag Gln	4869
aag Lys	acg Thr 1625	gag Glu	agc Ser	gag Glu	cgc Arg	cag Gln 1630	aag Lys	gcc Ala	gcc Ala	cag Gln	tgg Trp 1635	agc Ser	cag Gln	gcg Ala	4914
gtc Val	acg Thr 1640	cag Gln	ctc Leu	gag Glu	gct Ala	gcc Ala 1645	att Ile	ctc Leu	cag Gln	gaa Glu	aag Lys 1650	gac Asp	aag Lys	atc Ile	4959
tac Tyr	gag Glu 1655	aaa Lys	gag Glu	agg Arg	acc Thr	ctc Leu 1660	agg Arg	gac Asp	ctg Leu	cac His	acc Thr 1665	aag Lys	gtg Val	agc Ser	5004
cgg Arg	gag Glu 1670	gag Glu	ctc Leu	aac Asn	cag Gln	gag Glu 1675	acc Thr	cag Gln	acc Thr	cgg Arg	gag Glu 1680	acc Thr	aac Asn	ctc Leu	5049
tcc Ser	acc Thr 1685	aag Lys	atc Ile	tgc Cys	atc Ile	ttg Leu 1690	gaa Glu	ccg Pro	gag Glu	acc Thr	ggc Gly 1695	aat Asn	gac Asp	atg Met	5094
tct Ser	cct Pro 1700	tac Tyr	gag Glu	gcc Ala	tac Tyr	aag Lys 1705	agg Arg	ggt Gly	gtc Val	atc Ile	gac Asp 1710	aga Arg	ggc Gly	cag Gln	5139
tat Tyr	ctc Leu 1715	cag Gln	ctg Leu	cag Gln	gag Glu	ctg Leu 1720	gag Glu	tgt Cys	gac Asp	tgg Trp	gaa Glu 1725	gaa Glu	gtc Val	aca Thr	5184
acc Thr	tcc Ser 1730	agc Ser	ccc Pro	tgc Cys	ggg Gly	gag Glu 1735	gag Glu	tct Ser	gtg Val	ctc Leu	ctg Leu 1740	gac Asp	cgc Arg	aag Lys	5229
agc Ser	ggg Gly 1745	aag Lys	caa Gln	tac Tyr	tcc Ser	atc Ile 1750	gag Glu	gcc Ala	gcc Ala	ctc Leu	cgc Arg 1755	tgc Cys	cgc Arg	cgc Arg	5274



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att Ile	tcc Ser 1760	aaa Lys	gaa Glu	gag Glu	tac Tyr	cac His 1765	agg Arg	tac Tyr	aaa Lys	gat Asp	ggc Gly 1770	cgc Arg	ctc Leu	ccc Pro	5319
atc Ile	tcc Ser 1775	gag Glu	ttt Phe	gcc Ala	ctg Leu	ctt Leu 1780	gtg Val	gca Ala	ggg Gly	gag Glu	acc Thr 1785	aag Lys	ccg Pro	agt Ser	5364
tct Ser	tca Ser 1790	ctc Leu	tcc Ser	att Ile	ggg Gly	tcc Ser 1795	atc Ile	atc Ile	tcc Ser	aag Lys	tct Ser 1800	cca Pro	gtc Val	tgc Cys	5409
tcc Ser	cca Pro 1805	ggc Gly	ccc Pro	cag Gln	agt Ser	acc Thr 1810	ggc Gly	ttc Phe	ttc Phe	tcc Ser	cca Pro 1815	ggc Gly	ctc Leu	tct Ser	5454
ttt Phe	ggg Gly 1820	ctc Leu	act Thr	gag Glu	gat Asp	agc Ser 1825	ttc Phe	ccc Pro	atc Ile	gcg Ala	gag Glu 1830	atc Ile	ttc Phe	gat Asp	5499
aca Thr	acc Thr 1835	aca Thr	gac Asp	aac Asn	aag Lys	tgt Cys 1840	agc Ser	atc Ile	aag Lys	gca Ala	gct Ala 1845	gtg Val	gcc Ala	aag Lys	5544
aac Asn	atg Met 1850	ctg Leu	gat Asp	cct Pro	atc Ile	act Thr 1855	ggg Gly	cag Gln	aag Lys	ctg Leu	ttg Leu 1860	agg Arg	ccc Pro	agg Arg	5589
caa Gln	gcc Ala 1865	acg Thr	gga Gly	ggc Gly	att Ile	gtt Val 1870	gac Asp	ctt Leu	ctt Leu	agc Ser	cga Arg 1875	gaa Glu	cgg Arg	tac Tyr	5634
tcc Ser	gta Val 1880	cac His	aag Lys	gcg Ala	gtg Val	gag Glu 1885	cgg Arg	gga Gly	ctc Leu	att Ile	gag Glu 1890	aac Asn	acc Thr	tcc Ser	5679
act Thr	caa Gln 1895	cgg Arg	ctg Leu	ctc Leu	aat Asn	gct Ala 1900	cag Gln	aag Lys	gcc Ala	ttc Phe	acc Thr 1905	ggc Gly	atc Ile	gag Glu	5724
gac Asp	cct Pro 1910	gtc Val	acc Thr	agg Arg	aag Lys	agg Arg 1915	ctg Leu	tcg Ser	gtg Val	ggg Gly	gag Glu 1920	gcc Ala	atc Ile	cag Gln	5769
aag Lys	ggc Gly 1925	tgg Trp	atg Met	ccc Pro	cag Gln	gaa Glu 1930	agc Ser	gtg Val	ctt Leu	ccc Pro	cac His 1935	ctg Leu	ctg Leu	gta Val	5814
cag Gln	cac His 1940	ctg Leu	act Thr	ggg Gly	ggc Gly	ctc Leu 1945	atc Ile	gac Asp	ccc Pro	aag Lys	agg Arg 1950	acg Thr	gga Gly	cgc Arg	5859
atc Ile	ccc Pro 1955	gtc Val	cct Pro	cag Gln	gct Ala	gtg Val 1960	ctc Leu	tgc Cys	ggg Gly	atg Met	atc Ile 1965	agc Ser	gaa Glu	gac Asp	5904
ctg Leu	ggc Gly 1970	cag Gln	ctc Leu	ctg Leu	caa Gln	gat Asp 1975	gaa Glu	tcc Ser	ggc Gly	tac Tyr	gag Glu 1980	aag Lys	gat Asp	ctg Leu	5949
aca Thr	gac Asp 1985	ccc Pro	atc Ile	acc Thr	aag Lys	gag Glu 1990	agg Arg	ctg Leu	agc Ser	tac Tyr	aag Lys 1995	gag Glu	gcc Ala	atg Met	5994
ggg Gly	cgc Arg 2000	tgc Cys	cgc Arg	aaa Lys	gat Asp	cct Pro 2005	cta Leu	agt Ser	ggc Gly	cta Leu	cta Leu 2010	ctg Leu	ctc Leu	ccc Pro	6039
gcc	atg	cta	gaa	ggc	tat	cgc	tgc	tac	cgc	gcg	gcc	tcc	ccc	acc	6084

Ala Met Leu Glu Gly Tyr Arg Cys Tyr Arg Ala Ala Ser Pro Thr  
 2015 2020 2025

ctg cca aga tcc tgt gtg cgt tga  
 Leu Pro Arg Ser Cys Val Arg  
 2030 2035

6108

<210> 92  
 <211> 2035  
 <212> PRT  
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<400> 92

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Arg Ala Ala Thr Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala  
 35 40 45

Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Lys Leu  
 50 55 60

Gln Gln Asp Arg Gln Asn Gly Glu Gln Asn Gln Ala Leu Gln His Gln  
 65 70 75 80

Gln Glu Thr Gly Arg Asn Leu Lys Glu Ala Glu Val Leu Leu Lys Asp  
 85 90 95

Leu Phe Leu Asp Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala  
 100 105 110

Glu Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln  
 115 120 125

Glu Cys Ser Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro  
 130 135 140

Asp Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln  
 145 150 155 160

Asn Leu Val Arg Glu Gly His Tyr Gly Pro Gly Met Ala Glu Leu Glu  
 165 170 175

Gln Gln Val Ala Glu His Asn Ile Leu Gln Arg Glu Ile Glu Ala Tyr  
 180 185 190

Gly Gln Gln Leu Arg Thr Leu Val Gly Pro Asp Ala Asn Thr Ile Arg  
 195 200 205

Asn Gln Tyr Arg Glu Leu Leu Lys Ala Ala Ser Trp Arg Arg Gln Ser  
 210 215 220

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Leu Gly Ser Leu Tyr Thr His Leu Gln Gly Cys Thr Lys Gln Leu Ser  
 225 230 235 240  
 Ala Leu Ala Asp Gln Gln Gly Arg Ile Leu Gln Gln Asp Trp Ser Asp  
 245 250 255  
 Leu Met Pro Asp Pro Ala Gly Val Arg Arg Glu Tyr Glu His Phe Lys  
 260 265 270  
 Gln His Glu Leu Leu Ala Gln Glu Arg Asn Ile Asn Gln Leu Glu Asp  
 275 280 285  
 Asp Ala Asp Arg Met Val Glu Leu Gly His Pro Ala Ile Gly Pro Ile  
 290 295 300  
 Gln Val His Gln Glu Ala Leu Lys Met Glu Trp Gln Asn Phe Leu Asn  
 305 310 315 320  
 Leu Cys Ile Cys Gln Glu Ser Gln Leu Gln Arg Val Glu Asp Tyr Arg  
 325 330 335  
 Arg Phe Gln Glu Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu  
 340 345 350  
 Ser Ser Asn Leu Asp Thr Lys Tyr Gly Phe Gly Thr Gly Asp Ser Ser  
 355 360 365  
 Gly Ser Pro Thr Glu Leu Leu Leu Gln Leu Glu Ala Glu Glu Lys Gln  
 370 375 380  
 Leu Ala Ile Ala Glu Arg Ala Val Gly Asp Leu Gln Gln Arg Ser Gln  
 385 390 395 400  
 Glu Val Ala Pro Leu Pro Gln Arg Arg Asn Pro Ser Lys Gln Pro Leu  
 405 410 415  
 His Val Asp Ser Ile Cys Asp Trp Asp Ser Gly Glu Val Gln Leu Leu  
 420 425 430  
 Arg Gly Glu Arg Cys Thr Leu Lys Asp Asn Ala Asp Pro Tyr Thr Trp  
 435 440 445  
 Leu Val Gln Gly Pro Gly Gly Glu Thr Lys Ser Ala Pro Ala Ala Cys  
 450 455 460  
 Leu Trp Ile Pro Ala Pro Asp Pro Glu Ala Val Gly Lys Ala Ser Arg  
 465 470 475 480  
 Leu Ala Thr Glu Leu Gln Thr Leu Lys Gln Lys Leu Ser Thr Glu Lys  
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Asn Arg Leu Lys Ala Ala Ala Val Glu His Leu Gln Pro Gly Gln Gln  
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 Ala Pro Ala Gly Ser Ala Pro Ala Asp Pro Gln Gly Gln Thr Leu Leu  
 515 520 525  
 Ser Gln Met Thr Gln Leu Asp Gly Asp Leu Gly Gln Ile Glu Arg Gln  
 530 535 540  
 Val Leu Ser Trp Ala Arg Ser Pro Leu Ser Gln Ser Ser Ser Leu Lys  
 545 550 555 560  
 Asp Leu Glu Gly Arg Ile His Ser Cys Glu Gly Thr Ala Gln Arg Leu  
 565 570 575  
 Gln Ser Leu Gly Ala Glu Lys Glu Ala Ala Gln Gln Glu Cys Glu Ala  
 580 585 590  
 Phe Leu Ser Thr Lys Pro Thr Gly Ser Ala Ala Val Gln Leu Pro Val  
 595 600 605  
 Val Phe His Ser Val Lys Asn Arg Tyr Asn Asp Val Gln Ser Leu Cys  
 610 615 620  
 His Leu Tyr Gly Glu Lys Ala Lys Ala Ala Leu Gly Leu Glu Lys Gln  
 625 630 635 640  
 Ile Gln Glu Ala Asp Arg Val Ile Gln Gly Phe Glu Ala Ala Leu Ala  
 645 650 655  
 Leu Glu Gly Pro Val Pro Glu Gly Ser Gly Ala Leu Gln Glu Arg Val  
 660 665 670  
 Ser Glu Leu Gln Arg Gln Arg Lys Glu Leu Leu Gln Gln Gln Ala Cys  
 675 680 685  
 Val Leu Gly Leu His Arg Gln Leu Lys Ala Thr Glu His Ala Cys Ser  
 690 695 700  
 Ala Leu Gln Asn Asn Phe Gln Glu Phe Cys Gln Asp Leu Pro Arg Gln  
 705 710 715 720  
 Gln Arg Gln Val Arg Ala Leu Thr Asp Arg Tyr His Ala Val Gly Asp  
 725 730 735  
 Gln Leu Asp Leu Arg Glu Lys Ile Val Gln Asp Ala Ser Leu Thr Tyr  
 740 745 750  
 Gln Gln Leu Arg Asn Ser Arg Asp Asn Leu Ser Ser Trp Leu Glu Gln  
 755 760 765

Leu Pro His His Arg Val Gln Pro Ser Asp Gly Pro Ser Gln Ile Ser  
 770 775 780  
 Tyr Lys Leu Gln Ala Gln Lys Arg Leu Ile Gln Glu Ile Leu Gly Arg  
 785 790 795 800  
 Glu Gln Asp Gln Ala Thr Val Ser Arg Leu Thr Arg Asp Leu Gln Glu  
 805 810 815  
 Ala Leu Gln Asp Tyr Glu Leu Gln Ala Asp Thr Tyr Arg Cys Ser Leu  
 820 825 830  
 Glu Pro Ala Leu Ala Val Ser Ala Pro Lys Glu Leu Arg Val Ile Ser  
 835 840 845  
 Leu Gln Glu Asn Ile Gln Ala Gln Glu Asn Asn Leu Ala Lys Ala Tyr  
 850 855 860  
 Thr Glu Val Ala Ala Ala Glu Gln Gln Gln Leu Arg Gln Leu Glu Phe  
 865 870 875 880  
 Ala Lys Lys Met Leu Arg Lys Lys Glu Leu Asp Glu Asp Ile Gln Ala  
 885 890 895  
 Ile His Ser Ala Arg Gln Gly Ser Gly Ser Pro Ala His Ala Arg Thr  
 900 905 910  
 Ala Glu Ser Glu Val Leu Lys Thr Gln Leu Glu Glu Glu Arg Lys Arg  
 915 920 925  
 Val Ala Glu Val Gln Arg Asp Leu Glu Glu Gln Arg Gln Arg Leu Leu  
 930 935 940  
 Gln Leu Arg Thr Gln Gln Pro Val Ala Arg Leu Glu Glu Lys Glu Val  
 945 950 955 960  
 Val Glu Phe Tyr Arg Asp Pro Gln Leu Glu Ser Asn Leu Ser Gln Ala  
 965 970 975  
 Ala Ser Arg Val Glu Glu Glu Gly Lys Arg Arg Ala Arg Leu Gln Ala  
 980 985 990  
 Glu Leu Glu Ala Val Ala Gln Lys Val Val His Leu Glu Gly Lys Arg  
 995 1000 1005  
 Lys Thr Met Gln Leu His Leu Leu Thr Lys Glu Val Thr Gln Ile  
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 Glu Arg Asp Pro Gly Leu Asp Ser Gln Val Thr Gln Leu His Ser  
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 Met Asn Val Lys Glu Lys Val Val Val Lys Glu Val Val Lys Val  
 1070 1075 1080  
 Glu Lys Asp Leu Glu Met Val Lys Ala Ala Gln Thr Leu Arg Leu  
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 Gln Ile Glu Glu Asp Ala Ala Arg Arg Lys Gly Ala Lys Glu Thr  
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 Ser Ser Val Glu Pro Lys Val Ile Val Lys Glu Val Lys Lys Val  
 1130 1135 1140  
 Glu Gln Asp Pro Gly Leu Leu Lys Glu Ala Ser Arg Leu Arg Ser  
 1145 1150 1155  
 Leu Leu Glu Glu Glu Lys Asn Asn Asn Val Ala Leu Ala Arg Glu  
 1160 1165 1170  
 Leu Gln Glu Leu Gln Glu Lys Tyr Arg Val Val Glu Lys Gln Lys  
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 Lys Leu Leu Pro Glu Leu Glu Val Leu Arg Ala Gln Lys Pro Val  
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 Val Glu Tyr Lys Glu Val Thr Gln Glu Val Val Arg His Glu Lys  
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 Asn Glu Leu Val Asn Thr Asn Gly Arg Ser Gln Glu Gln Leu Ile  
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 Arg Leu Gln Gly Glu Arg Asp Glu Trp Lys Arg Glu Arg Ser Lys  
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Arg	Glu	Ala	Val	Gln	Arg	Arg	Arg	Ala	Thr	Glu	Asp	Ala	Val	Tyr
	1340					1345					1350			
Glu	Leu	Gln	Asn	Lys	Leu	Leu	Leu	Leu	Glu	Arg	Arg	Arg	Pro	Glu
	1355					1360					1365			
Glu	Gln	Ile	Val	Val	Gln	Glu	Val	Val	Val	Thr	Gln	Lys	Asp	Pro
	1370					1375					1380			
Lys	Leu	Arg	Glu	Glu	His	Ser	Arg	Leu	Ser	Arg	Ser	Leu	Asp	Glu
	1385					1390					1395			
Glu	Val	Gly	Arg	Arg	Arg	Gln	Leu	Glu	Leu	Glu	Val	Arg	Gln	Leu
	1400					1405					1410			
Gly	Ala	Arg	Val	Glu	Glu	Glu	Glu	Ala	Arg	Leu	Ser	Phe	Glu	Glu
	1415					1420					1425			
Asp	Arg	Ser	Lys	Lys	Leu	Ala	Ala	Glu	Arg	Glu	Leu	Arg	Gln	Leu
	1430					1435					1440			
Thr	Leu	Lys	Ile	Gln	Glu	Leu	Glu	Lys	Arg	Pro	Pro	Ala	Leu	Gln
	1445					1450					1455			
Glu	Lys	Ile	Ile	Met	Glu	Glu	Val	Val	Lys	Leu	Glu	Lys	Asp	Pro
	1460					1465					1470			
Asp	Leu	Glu	Arg	Ser	Thr	Glu	Ala	Leu	Arg	Arg	Glu	Leu	Asp	Gln
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Glu	Lys	Asn	Arg	Val	Thr	Glu	Leu	His	Arg	Glu	Cys	Gln	Gly	Leu
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Gln	Val	Gln	Val	Asp	Leu	Leu	Gln	Lys	Thr	Lys	Ser	Gln	Glu	Lys
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Thr	Ile	Tyr	Lys	Glu	Val	Ile	Arg	Val	Glu	Lys	Asp	Pro	Val	Leu
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Glu	Gly	Glu	Arg	Ala	Arg	Val	Trp	Glu	Ile	Leu	Asn	Arg	Glu	Arg
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Ala	Ala	Arg	Lys	Gly	Arg	Glu	Glu	Asp	Val	Arg	Ser	Leu	Gln	Glu
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Glu Ala Glu Leu Gln Arg Ala Arg Asp Gln Ala Ser Gln Asp Cys  
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Gly Arg Leu Gln Arg Gln Leu Arg Glu Leu Glu Gln Gln Lys Gln  
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Gln Lys Ala Arg Gln Leu Gln Glu Glu Gly Arg Leu Leu Ser Gln  
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Lys Thr Glu Ser Glu Arg Gln Lys Ala Ala Gln Trp Ser Gln Ala  
1625 1630 1635

Val Thr Gln Leu Glu Ala Ala Ile Leu Gln Glu Lys Asp Lys Ile  
1640 1645 1650

Tyr Glu Lys Glu Arg Thr Leu Arg Asp Leu His Thr Lys Val Ser  
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Arg Glu Glu Leu Asn Gln Glu Thr Gln Thr Arg Glu Thr Asn Leu  
1670 1675 1680

Ser Thr Lys Ile Cys Ile Leu Glu Pro Glu Thr Gly Asn Asp Met  
1685 1690 1695

Ser Pro Tyr Glu Ala Tyr Lys Arg Gly Val Ile Asp Arg Gly Gln  
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Tyr Leu Gln Leu Gln Glu Leu Glu Cys Asp Trp Glu Glu Val Thr  
1715 1720 1725

Thr Ser Ser Pro Cys Gly Glu Glu Ser Val Leu Leu Asp Arg Lys  
1730 1735 1740

Ser Gly Lys Gln Tyr Ser Ile Glu Ala Ala Leu Arg Cys Arg Arg  
1745 1750 1755

Ile Ser Lys Glu Glu Tyr His Arg Tyr Lys Asp Gly Arg Leu Pro  
1760 1765 1770

Ile Ser Glu Phe Ala Leu Leu Val Ala Gly Glu Thr Lys Pro Ser  
1775 1780 1785

Ser Ser Leu Ser Ile Gly Ser Ile Ile Ser Lys Ser Pro Val Cys  
1790 1795 1800

Ser Pro Gly Pro Gln Ser Thr Gly Phe Phe Ser Pro Gly Leu Ser  
1805 1810 1815



Phe Gly Leu Thr Glu Asp Ser Phe Pro Ile Ala Glu Ile Phe Asp  
 1820 1825 1830  
 Thr Thr Thr Asp Asn Lys Cys Ser Ile Lys Ala Ala Val Ala Lys  
 1835 1840 1845  
 Asn Met Leu Asp Pro Ile Thr Gly Gln Lys Leu Leu Arg Pro Arg  
 1850 1855 1860  
 Gln Ala Thr Gly Gly Ile Val Asp Leu Leu Ser Arg Glu Arg Tyr  
 1865 1870 1875  
 Ser Val His Lys Ala Val Glu Arg Gly Leu Ile Glu Asn Thr Ser  
 1880 1885 1890  
 Thr Gln Arg Leu Leu Asn Ala Gln Lys Ala Phe Thr Gly Ile Glu  
 1895 1900 1905  
 Asp Pro Val Thr Arg Lys Arg Leu Ser Val Gly Glu Ala Ile Gln  
 1910 1915 1920  
 Lys Gly Trp Met Pro Gln Glu Ser Val Leu Pro His Leu Leu Val  
 1925 1930 1935  
 Gln His Leu Thr Gly Gly Leu Ile Asp Pro Lys Arg Thr Gly Arg  
 1940 1945 1950  
 Ile Pro Val Pro Gln Ala Val Leu Cys Gly Met Ile Ser Glu Asp  
 1955 1960 1965  
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 1970 1975 1980  
 Thr Asp Pro Ile Thr Lys Glu Arg Leu Ser Tyr Lys Glu Ala Met  
 1985 1990 1995  
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 Leu Pro Arg Ser Cys Val Arg  
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Gly Ser Pro Ala Lys Gly Ser Pro Lys Gly Ser Pro Asn Lys His Ser
20 25 30

aga gct gcc act cag gag ctg gcc ctg ctg atc tcc cgc atg cag gcc      144
Arg Ala Ala Thr Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala
35 40 45

aac gcc gac cag gtg gag agg gac att ctg gag acc cag aag aag ctg      192
Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Lys Leu
50 55 60

cag cag gac cgg cag cac agc gag cag cgc cag gcc ctg cag cac cgg      240
Gln Gln Asp Arg Gln His Ser Glu Gln Arg Gln Ala Leu Gln His Arg
65 70 75 80

cag gag gtg ggc cgc agc ctg aag gag gcc gag gtg ctg ctg aaa gac      288
Gln Glu Val Gly Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp
85 90 95

ctc ttc ctg gat gtg gac aag gcc cag cgg ctc aag cac cca cag gcc      336
Leu Phe Leu Asp Val Asp Lys Ala Gln Arg Leu Lys His Pro Gln Ala
100 105 110

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Glu Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln
115 120 125

gag tgc gcc gag tac cgc gcc ctg tac gag aag atg gtg ctg ccg ccc      432
Glu Cys Ala Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro
130 135 140

gat gtg ggg ccc agg gtc gac tgg gcg agg gtg ctg gag cag aag cag      480
Asp Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln
145 150 155 160

aag cag gtc tgc gag ggc cag tac ggg ccg ggc atg gcg gag ctg gag      528
Lys Gln Val Cys Glu Gly Gln Tyr Gly Pro Gly Met Ala Glu Leu Glu
165 170 175

cag cag gtc gcc gaa cac aat atc ctg cag aag gag atc gag gcc tac      576
Gln Gln Val Ala Glu His Asn Ile Leu Gln Lys Glu Ile Glu Ala Tyr
180 185 190

ggg cag cag ctg cgg acc ctt gta ggg ccg gac gcg gcc acc atc cgg      624
Gly Gln Gln Leu Arg Thr Leu Val Gly Pro Asp Ala Thr Ile Arg
195 200 205

agc caa tac ccg gac ctc ctg aag gcg gcc tcg tgg cga ggg cag agc      672
Ser Gln Tyr Arg Asp Leu Leu Lys Ala Ala Ser Trp Arg Gly Gln Ser
210 215 220

ctg ggc agc ctg tac acg cac ctg cag ggc tgc acg cgc cag ctg aac      720
Leu Gly Ser Leu Tyr Thr His Leu Gln Gly Cys Thr Arg Gln Leu Asn
225 230 235 240

gcc ctg gcc cag cag cag cag cgc atc ctc cag caa gac tgg agc gac      768
Ala Leu Ala Gln Gln Gln Gln Arg Ile Leu Gln Gln Asp Trp Ser Asp
245 250 255

cac ctg gcc gac ccc gcg ggc gtg cgg agg gag tac gag cac ttc aag      816
His Leu Ala Asp Pro Ala Gly Val Arg Arg Glu Tyr Glu His Phe Lys
260 265 270

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gac Asp	ggg Gly 290	gag Glu	cgc Arg	atg Met	gtg Val	gag Glu 295	ctc Leu	ggg Gly	cat His	ccg Pro	gcc Ala 300	gtg Val	ggg Gly	ccc Pro	atc Ile	912
cag Gln 305	gcc Ala	cac His	cag Gln	gag Glu	gcc Ala 310	cta Leu	aag Lys	gtg Val	gag Glu	tgg Trp 315	cag Gln	aac Asn	ttc Phe	ctg Leu	aac Asn 320	960
ctt Leu	tgc Cys	atc Ile	tgc Cys	cag Gln 325	gag Glu	agc Ser	cag Gln	ctg Leu	cag Gln 330	cac His	gtg Val	gag Glu	gac Asp	tac Tyr 335	cgc Arg	1008
agg Arg	ttc Phe	cag Gln	gaa Glu 340	gag Glu	gcg Ala	gat Asp	tct Ser	gtc Val 345	agc Ser	cag Gln	acc Thr	ctg Leu	gca Ala 350	aag Lys	ctc Leu	1056
aac Asn	tcc Ser	agc Ser 355	ctg Leu	gac Asp	agc Ser	cag Gln	tac Tyr 360	agc Ser	cct Pro	gcc Ala	ccg Pro	gag Glu 365	ggc Gly	cca Pro	cct Pro	1104
ggc Gly 370	gct Ala	cta Leu	atg Met	gag Glu	atg Met	ctg Leu 375	cgg Arg	cag Gln	ctg Leu	gag Glu	gca Ala 380	gag Glu	gag Glu	aag Lys	cag Gln	1152
ctg Leu 385	acc Thr	atg Met	gcc Ala	gaa Glu	aag Lys 390	act Thr	ctc Leu	aag Lys	gac Asp	ctg Leu 395	cag Gln	ctg Leu	caa Gln	agc Ser	cag Gln 400	1200
ggg Gly	gtg Val	gcc Ala	cct Pro	ctg Leu 405	ccc Pro	cag Gln	aga Arg	agg Arg	aac Asn 410	ctg Leu	ccc Pro	ctg Leu	cag Gln	ccc Pro 415	ctg Leu	1248
cgt Arg	gtg Val	gac Asp	agc Ser 420	atc Ile	tgt Cys	gac Asp	tgg Trp	gac Asp 425	tca Ser	gga Gly	gaa Glu	gtg Val	cag Gln 430	ctg Leu	ctg Leu	1296
cgg Arg	ggc Gly	gag Glu 435	cag Gln	tat Tyr	aca Thr	ctg Leu	gtg Val 440	gac Asp	aac Asn	act Thr	gac Asp	cca Pro 445	cac His	acc Thr	tgg Trp	1344
gtg Val	gtc Val 450	cag Gln	ggc Gly	cag Gln	gca Ala	ggc Gly 455	gag Glu	ccc Pro	aag Lys	cgg Arg	gcc Ala 460	cca Pro	gcc Ala	gcc Ala	tgc Cys	1392
ttc Phe 465	tgc Cys	atc Ile	cca Pro	gct Ala	ccg Pro 470	gac Asp	cct Pro	gaa Glu	gcc Ala	gtg Val 475	gcc Ala	agg Arg	gcc Ala	tcc Ser	ggg Gly 480	1440
ctt Leu	gcc Ala	tgc Ser	gag Glu	ctg Leu 485	cag Gln	gca Ala	ctg Leu	aag Lys	cag Gln 490	aaa Lys	ctg Leu	acc Thr	gca Ala	gtc Val 495	cag Gln	1488
agc Ser	cgc Arg	ctg Leu	aag Lys 500	gcc Ala	agt Ser	gcc Ala	aag Lys	gag Glu 505	ccc Pro	tta Leu	cgg Arg	ccc Pro	agc Ser 510	cag Gln	cag Gln	1536
gct Ala	cca Pro	agc Ser 515	agc Ser	tgc Ser	ggc Gly	cca Pro	ccc Pro 520	gac Asp	cca Pro	cag Gln	gcc Ala	cag Gln 525	aag Lys	ctc Leu	ctg Leu	1584
aca Thr	cag Gln 530	atg Met	acc Thr	cgg Arg	ctg Leu	gaa Glu 535	gag Glu	gac Asp	ctg Leu	ggg Gly	cag Gln 540	ata Ile	gag Glu	aag Lys	cag Gln	1632

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gac Asp	ctc Leu	gag Glu	ggc Gly	cgc Arg 565	atc Ile	cag Gln	aac Asn	cac His	cag Gln 570	ggc Gly	acg Thr	gcc Ala	cag Gln	cgg Arg 575	ctg Leu	1728
cag Gln	agc Ser	ctg Leu	gga Gly 580	gca Ala	gag Glu	aag Lys	gag Glu	gcg Ala 585	gcc Ala	cag Gln	cag Gln	aag Lys	tgt Cys 590	gag Glu	gcg Ala	1776
ttt Phe	ctg Leu	tcg Ser 595	ggg Gly	cag Gln	ccc Pro	tca Ser	ggg Gly 600	ccc Pro	gct Ala	gcc Ala	ctg Leu	cat His 605	ctg Leu	ccc Pro	gtg Val	1824
gtc Val	ctc Leu 610	aac Asn	agc Ser	gtc Val	aag Lys	aac Asn 615	aaa Lys	tac Tyr	agg Arg	gat Asp	gtg Val 620	cag Gln	ggt Val	ctc Leu	tgc Cys	1872
agc Ser 625	ctc Leu	tac Tyr	ggg Gly	gag Glu	aaa Lys 630	gcc Ala	aag Lys	gcc Ala	gcc Ala	ctg Leu 635	ggt Gly	ctg Leu	gaa Glu	cgg Arg	cag Gln 640	1920
atc Ile	cgg Arg	gat Asp	gca Ala	gac Asp 645	aag Lys	gtc Val	atc Ile	cga Arg	ggc Gly 650	ttc Phe	gag Glu	tct Ser	gcc Ala	ctg Leu 655	gca Ala	1968
cag Gln	gag Glu	gcc Ala	ccc Pro 660	atc Ile	ccc Pro	gca Ala	ggc Gly	ccg Pro 665	ggc Gly	gca Ala	ctg Leu	cag Gln	gag Glu 670	agg Arg	gtc Val	2016
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ctg Leu	ccc Pro 770	cac His	aac Asn	aag Lys	gtg Val	cgg Arg 775	ccc Pro	agc Ser	gac Asp	ggg Gly	ccc Pro 780	agc Ser	cag Gln	atc Ile	gcc Ala	2352
tac Tyr 785	aag Lys	ctg Leu	cag Gln	gcg Ala	cag Gln 790	aag Lys	acc Thr	tgg Trp	gtt Val	caa Gln 795	tcc Ser	ctg Leu	ggt Gly	cgg Arg	gaa Glu 800	2400
gat Asp	ctc Leu	ctg Leu	gag Glu	aag Lys 805	gaa Glu	atg Met	gca Ala	acc Thr	cac His 810	tcc Ser	agt Ser	att Ile	ccc Pro	agt Ser 815	cta Leu	2448
tgt	cct	tcc	cca	cct	gct	cag	gac	tat	gag	ctg	cag	gca	gac	acc	tac	2496

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Arg	Gly	Ser	Leu	Glu	Pro	Thr	Gln	Val	Gly	Ser	Ala	Pro	Lys	Arg	Pro	
		835					840					845				
cga	gtt	gcg	ccc	ctg	cag	gac	agc	atc	caa	gcc	cag	gag	aag	aac	ctg	2592
Arg	Val	Ala	Pro	Leu	Gln	Asp	Ser	Ile	Gln	Ala	Gln	Glu	Lys	Asn	Leu	
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Thr	Lys	Ala	Tyr	Thr	Glu	Val	Ala	Ala	Ala	His	Gln	Gln	Gln	Leu	His	
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cag	ctg	gaa	ttt	gcc	aga	aag	att	ctg	gag	aag	aaa	gag	ctc	aat	gag	2688
Gln	Leu	Glu	Phe	Ala	Arg	Lys	Ile	Leu	Glu	Lys	Lys	Glu	Leu	Asn	Glu	
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gac	atc	cag	gtg	aca	cct	aac	gcc	cag	cag	ggg	tct	gag	agc	cca	gcc	2736
Asp	Ile	Gln	Val	Thr	Pro	Asn	Ala	Gln	Gln	Gly	Ser	Glu	Ser	Pro	Ala	
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cgg	ggg	ggc	agg	aag	tca	gag	gcc	ctg	agg	tcc	cag	cta	gag	gag	gag	2784
Arg	Gly	Gly	Arg	Lys	Ser	Glu	Ala	Leu	Arg	Ser	Gln	Leu	Glu	Glu	Glu	
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Lys	Glu	Val	Val	Glu	Phe	Tyr	Arg	Asp	Pro	Gln	Leu	Glu	Ser	Asn	Leu	
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			980					985					990			
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Thr	Gln	Ile	Glu	Arg	Asp	Pro	Gly	Leu	Asp	Ser	Gln	Ala	Ala	Gln		
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Leu	Lys	Ser	Glu	Leu	Gln	Leu	Leu	Gln	Glu	Glu	Asn	Thr	Ala	Val		
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Leu	Ala	Gln	Leu	Glu	Ala	Leu	Lys	Ala	Glu	Leu	Leu	Ala	Leu	Glu		
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cag	aag	gag	gtg	aac	gtg	aaa	gag	aca	gtc	gtg	gtg	aaa	gaa	gtg		3249
Gln	Lys	Glu	Val	Asn	Val	Lys	Glu	Thr	Val	Val	Val	Lys	Glu	Val		
	1070					1075					1080					
gtc	aag	gtg	gag	aag	gac	ctg	gag	atg	ctc	cag	gca	gcc	cag	gcc		3294
Val	Lys	Val	Glu	Lys	Asp	Leu	Glu	Met	Leu	Gln	Ala	Ala	Gln	Ala		

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gag Glu	gat Asp 1115	gcc Ala	gtg Val	gcc Ala	aag Lys	ctg Leu 1120	cag Gln	gct Ala	cga Arg	gtc Val	gtg Val 1125	gag Glu	ctg Leu	gag Glu	3384
gca Ala	gca Ala 1130	atc Ile	cgc Arg	act Thr	gtg Val	gag Glu 1135	ccc Pro	aag Lys	gtg Val	att Ile	gtg Val 1140	aag Lys	gag Glu	gtg Val	3429
aag Lys	aag Lys 1145	gtg Val	gaa Glu	cag Gln	gac Asp	ccc Pro 1150	agg Arg	ctc Leu	ctc Leu	cag Gln	gag Glu 1155	gca Ala	tcc Ser	agg Arg	3474
ctg Leu	agg Arg 1160	agc Ser	ctc Leu	ctg Leu	gag Glu	gtg Val 1165	cag Gln	agg Arg	agt Ser	gaa Glu	aac Asn 1170	gag Glu	gtg Val	ctg Leu	3519
gcc Ala	agg Arg 1175	gag Glu	gag Glu	ctg Leu	aag Lys	gag Glu 1180	ctg Leu	cac His	agc Ser	aag Lys	cac His 1185	agc Ser	gcg Ala	gcg Ala	3564
gag Glu	aag Lys 1190	cag Gln	aag Lys	ccc Pro	cgg Arg	gtg Val 1195	gat Asp	ctg Leu	cag Gln	gag Glu	cgc Arg 1200	gta Val	cag Gln	gag Glu	3609
acc Thr	ttc Phe 1205	cgg Arg	gtg Val	gac Asp	ccg Pro	gag Glu 1210	aca Thr	gag Glu	cgg Arg	gag Glu	atc Ile 1215	gca Ala	cag Gln	ctc Leu	3654
cgg Arg	gct Ala 1220	gag Glu	ctg Leu	cag Gln	gag Glu	act Thr 1225	ggc Gly	cgc Arg	aag Lys	agg Arg	aat Asn 1230	ggc Gly	acg Thr	gag Glu	3699
cag Gln	gag Glu 1235	gtg Val	gag Glu	cga Arg	ctg Leu	ctc Leu 1240	tct Ser	gag Glu	ctg Leu	gtg Val	gtg Val 1245	ctg Leu	cgg Arg	gcc Ala	3744
cag Gln	aag Lys 1250	ccc Pro	acc Thr	gtg Val	gag Glu	tac Tyr 1255	aag Lys	gag Glu	gtg Val	acg Thr	cag Gln 1260	gag Glu	ctg Leu	gtg Val	3789
cgg Arg	cac His 1265	gag Glu	aag Lys	aac Asn	ccc Pro	gag Glu 1270	ctg Leu	ctg Leu	cgg Arg	gag Glu	atc Ile 1275	gac Asp	cgc Arg	ctg Leu	3834
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cgc Arg	cgt Arg 1325	gag Glu	aag Lys	gac Asp	ccc Pro	gtc Val 1330	ctg Leu	gag Glu	cag Gln	gaa Glu	gcc Ala 1335	cag Gln	cgg Arg	ctg Leu	4014
cgc Arg	cag Gln 1340	gag Glu	gtg Val	cgg Arg	gag Glu	gcc Ala 1345	act Thr	cag Gln	aag Lys	cgg Arg	cgg Arg 1350	gcg Ala	gcc Ala	gag Glu	4059

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cgg Arg	cgg Arg 1370	cct Pro	gag Glu	gag Glu	agg Arg	gtg Val 1375	gtg Val	gtg Val	cag Gln	gag Glu	gtg Val 1380	gtg Val	gtc Val	acc Thr	4149
cag Gln	aag Lys 1385	gac Asp	ccg Pro	aag Lys	ctc Leu	cat His 1390	gag Glu	gag Glu	cac His	agc Ser	cgg Arg 1395	ctg Leu	agc Ser	cag Gln	4194
agc Ser	tgt Leu 1400	gat Asp	gag Glu	gag Glu	gcc Ala	ggc Gly 1405	cgg Arg	cgg Arg	cgg Arg	cag Gln	ctg Leu 1410	gaa Glu	cgg Arg	gag Glu	4239
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ctg Leu	cgg Arg 1445	cag Gln	ctg Leu	acc Thr	ctg Leu	aag Lys 1450	ctc Leu	cag Gln	gag Glu	ctg Leu	gag Glu 1455	aag Lys	cgg Arg	cct Pro	4374
ccg Pro	gca Ala 1460	gtg Val	cag Gln	gag Glu	aag Lys	atc Ile 1465	atc Ile	atg Met	gag Glu	gag Glu	gta Val 1470	gtc Val	cag Gln	ctg Leu	4419
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tgg Trp	gct Ala 1580	cgg Arg	gag Glu	gag Glu	gcc Ala	gag Glu 1585	ctc Leu	cag Gln	aag Lys	acc Thr	cgg Arg 1590	gac Asp	cgg Arg	gca Ala	4779
agc Ser	cag Gln 1595	gag Glu	tgc Cys	agg Arg	cag Gln	ctg Leu 1600	cag Gln	cag Gln	gag Glu	ctg Leu	cgg Arg 1605	gag Glu	ctg Leu	gaa Glu	4824

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cgg Arg	ggc Gly 1640	cag Gln	gaa Glu	ctc Leu	tcg Ser	cag Gln 1645	ctc Leu	gag Glu	tcg Ser	gcc Ala	atc Ile 1650	ctc Leu	cgc Arg	gag Glu	4959
aag Lys	gac Asp 1655	cgg Arg	atc Ile	tat Tyr	gag Glu	aag Lys 1660	gag Glu	cgg Arg	acc Thr	ctg Leu	cgg Arg 1665	gac Asp	ctc Leu	cac His	5004
acc Thr	cag Gln 1670	gtg Val	agc Ser	cgg Arg	gag Glu	gag Glu 1675	ctc Leu	aac Asn	cag Gln	gag Glu	acc Thr 1680	cag Gln	aca Thr	cga Arg	5049
gag Glu	acc Thr 1685	aac Asn	atc Ile	tcc Ser	acc Thr	aag Lys 1690	atc Ile	tcc Ser	atc Ile	ctg Leu	gag Glu 1695	ccc Pro	gag Glu	acg Thr	5094
ggg Gly	aag Lys 1700	gac Asp	atg Met	tcc Ser	cca Pro	tac Tyr 1705	gag Glu	gcc Ala	tac Tyr	aag Lys	agg Arg 1710	ggc Gly	gtc Val	att Ile	5139
gac Asp	cga Arg 1715	agc Ser	cag Gln	tac Tyr	ctc Leu	cag Gln 1720	ctg Leu	cag Gln	gat Asp	ctc Leu	gag Glu 1725	tgt Cys	gac Asp	tgg Trp	5184
gag Glu	gag Glu 1730	gtc Val	acc Thr	acc Thr	tcg Ser	ggc Gly 1735	ccc Pro	cac His	ggg Gly	gag Glu	gag Glu 1740	tct Ser	gtg Val	ctc Leu	5229
ctg Leu	gac Asp 1745	cgc Arg	aag Lys	agc Ser	ggg Gly	aaa Lys 1750	cag Gln	tac Tyr	tcc Ser	atc Ile	gag Glu 1755	gcc Ala	gcc Ala	ctg Leu	5274
cgc Arg	agc Ser 1760	cgg Arg	cgc Arg	atc Ile	tcc Ser	aaa Lys 1765	gag Glu	gag Glu	tac Tyr	cat His	ctc Leu 1770	tac Tyr	aag Lys	gat Asp	5319
ggc Gly	cag Gln 1775	ctc Leu	ccc Pro	atc Ile	agc Ser	gaa Glu 1780	ttc Phe	gct Ala	ctg Leu	ctc Leu	gtg Val 1785	gcc Ala	ggg Gly	gag Glu	5364
acc Thr	aag Lys 1790	ccc Pro	tgc Cys	ccc Pro	tcc Ser	ctc Leu 1795	tcc Ser	atc Ile	ggc Gly	gcc Ala	atc Ile 1800	atc Ile	tcc Ser	aag Lys	5409
tcc Ser	ccg Pro 1805	ctg Leu	gcc Ala	tcc Ser	ccg Pro	gcc Ala 1810	tcc Ser	cag Gln	agc Ser	acc Thr	agt Ser 1815	ctc Leu	ttc Phe	tcc Ser	5454
ccc Pro	agc Ser 1820	ttc Phe	tct Ser	ctc Leu	ggg Gly	ctt Leu 1825	agc Ser	gag Glu	gac Asp	agc Ser	ttc Phe 1830	ccc Pro	atc Ile	gcc Ala	5499
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gcc Ala	gtg Val 1850	gcc Ala	aag Lys	aac Asn	atg Met	ctg Leu 1855	gac Asp	ccc Pro	atc Ile	acc Thr	ggg Gly 1860	cag Gln	aag Lys	ctg Leu	5589
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Leu	Glu 1865	Ala	Gln	Ala	Ala	Thr 1870	Gly	Gly	Ile	Val	Asp 1875	Leu	Leu	Ser	
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gag Glu	agc Ser 1895	ggc Gly	tca Ser	acc Thr	cag Gln	agg Arg 1900	ctg Leu	ctc Leu	aac Asn	gca Ala	cag Gln 1905	aag Lys	gcc Ala	ttc Phe	5724
acg Thr	ggc Gly 1910	att Ile	gag Glu	gac Asp	ccc Pro	gtg Val 1915	acc Thr	aag Lys	aag Lys	agg Arg	ctg Leu 1920	tcg Ser	gtg Val	ggc Gly	5769
gag Glu	gcc Ala 1925	gtc Val	cag Gln	aag Lys	ggc Gly	tgg Trp 1930	atg Met	ccc Pro	cag Gln	gaa Glu	agc Ser 1935	gtg Val	ctc Leu	cca Pro	5814
cac His	ctg Leu 1940	cgg Arg	gtg Val	cag Gln	cac His	ctg Leu 1945	acc Thr	ggg Gly	ggg Gly	ctc Leu	atc Ile 1950	gac Asp	ccc Pro	aag Lys	5859
aag Lys	acc Thr 1955	ggc Gly	cgc Arg	atc Ile	ccc Pro	gtg Val 1960	gct Ala	cag Gln	gct Ala	gtg Val	ctc Leu 1965	tct Ser	ggc Gly	atg Met	5904
atc Ile	agc Ser 1970	gag Glu	gag Glu	ctg Leu	gcc Ala	cag Gln 1975	ctc Leu	ctg Leu	caa Gln	gac Asp	gag Glu 1980	gcc Ala	agt Ser	tac Tyr	5949
gag Glu	aag Lys 1985	gac Asp	ttg Leu	aca Thr	gat Asp	ccc Pro 1990	att Ile	tcc Ser	aag Lys	gag Glu	cga Arg 1995	ctg Leu	agc Ser	tac Tyr	5994
agg Arg	gag Glu 2000	gcc Ala	atg Met	ggg Gly	cgt Arg	tgc Cys 2005	cgg Arg	aag Lys	gac Asp	ccc Pro	ctg Leu 2010	agc Ser	ggc Gly	ctg Leu	6039
ctg Leu	ctc Leu 2015	ctc Leu	cca Pro	gcc Ala	tcg Ser	cta Leu 2020	gag Glu	ggg Gly	tac Tyr	cgc Arg	tgc Cys 2025	tac Tyr	cgc Arg	tcg Ser	6084
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<212> PRT
<213> Bos taurus
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<400> 94

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Gly Ser Pro Ala Lys Gly Ser Pro Lys Gly Ser Pro Asn Lys His Ser  
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Arg Ala Ala Thr Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala  
35 40 45

Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Lys Leu  
50 55 60

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Gln Gln Asp Arg Gln His Ser Glu Gln Arg Gln Ala Leu Gln His Arg  
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 Gln Glu Val Gly Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp  
 85 90 95  
 Leu Phe Leu Asp Val Asp Lys Ala Gln Arg Leu Lys His Pro Gln Ala  
 100 105 110  
 Glu Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln  
 115 120 125  
 Glu Cys Ala Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro  
 130 135 140  
 Asp Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln  
 145 150 155 160  
 Lys Gln Val Cys Glu Gly Gln Tyr Gly Pro Gly Met Ala Glu Leu Glu  
 165 170 175  
 Gln Gln Val Ala Glu His Asn Ile Leu Gln Lys Glu Ile Glu Ala Tyr  
 180 185 190  
 Gly Gln Gln Leu Arg Thr Leu Val Gly Pro Asp Ala Ala Thr Ile Arg  
 195 200 205  
 Ser Gln Tyr Arg Asp Leu Leu Lys Ala Ala Ser Trp Arg Gly Gln Ser  
 210 215 220  
 Leu Gly Ser Leu Tyr Thr His Leu Gln Gly Cys Thr Arg Gln Leu Asn  
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 Ala Leu Ala Gln Gln Gln Gln Arg Ile Leu Gln Gln Asp Trp Ser Asp  
 245 250 255  
 His Leu Ala Asp Pro Ala Gly Val Arg Arg Glu Tyr Glu His Phe Lys  
 260 265 270  
 Gln His Glu Leu Leu Ser Gln Glu Gln Arg Val Asn Gln Leu Glu Asp  
 275 280 285  
 Asp Gly Glu Arg Met Val Glu Leu Gly His Pro Ala Val Gly Pro Ile  
 290 295 300  
 Gln Ala His Gln Glu Ala Leu Lys Val Glu Trp Gln Asn Phe Leu Asn  
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 Leu Cys Ile Cys Gln Glu Ser Gln Leu Gln His Val Glu Asp Tyr Arg  
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Arg Phe Gln Glu Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu  
340 345 350

Asn Ser Ser Leu Asp Ser Gln Tyr Ser Pro Ala Pro Glu Gly Pro Pro  
355 360 365

Gly Ala Leu Met Glu Met Leu Arg Gln Leu Glu Ala Glu Glu Lys Gln  
370 375 380

Leu Thr Met Ala Glu Lys Thr Leu Lys Asp Leu Gln Leu Gln Ser Gln  
385 390 395 400

Gly Val Ala Pro Leu Pro Gln Arg Arg Asn Leu Pro Leu Gln Pro Leu  
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Arg Val Asp Ser Ile Cys Asp Trp Asp Ser Gly Glu Val Gln Leu Leu  
420 425 430

Arg Gly Glu Gln Tyr Thr Leu Val Asp Asn Thr Asp Pro His Thr Trp  
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Val Val Gln Gly Gln Ala Gly Glu Pro Lys Arg Ala Pro Ala Ala Cys  
450 455 460

Phe Cys Ile Pro Ala Pro Asp Pro Glu Ala Val Ala Arg Ala Ser Gly  
465 470 475 480

Leu Ala Ser Glu Leu Gln Ala Leu Lys Gln Lys Leu Thr Ala Val Gln  
485 490 495

Ser Arg Leu Lys Ala Ser Ala Lys Glu Pro Leu Arg Pro Ser Gln Gln  
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Ala Pro Ser Ser Ser Gly Pro Pro Asp Pro Gln Ala Gln Lys Leu Leu  
515 520 525

Thr Gln Met Thr Arg Leu Glu Glu Asp Leu Gly Gln Ile Glu Lys Gln  
530 535 540

Leu Leu Ala Trp Ala Arg Ala Pro Leu Ser Arg Thr Thr Pro Leu Glu  
545 550 555 560

Asp Leu Glu Gly Arg Ile Gln Asn His Gln Gly Thr Ala Gln Arg Leu  
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Gln Ser Leu Gly Ala Glu Lys Glu Ala Ala Gln Gln Lys Cys Glu Ala  
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Phe Leu Ser Gly Gln Pro Ser Gly Pro Ala Ala Leu His Leu Pro Val  
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Val Leu Asn Ser Val Lys Asn Lys Tyr Arg Asp Val Gln Val Leu Cys  
610 615 620

Ser Leu Tyr Gly Glu Lys Ala Lys Ala Ala Leu Gly Leu Glu Arg Gln  
625 630 635 640

Ile Arg Asp Ala Asp Lys Val Ile Arg Gly Phe Glu Ser Ala Leu Ala  
645 650 655

Gln Glu Ala Pro Ile Pro Ala Gly Pro Gly Ala Leu Gln Glu Arg Val  
660 665 670

Ser Glu Leu Lys Arg Arg Arg Arg Glu Leu Leu Glu Gln Gln Ala Cys  
675 680 685

Val Leu Gly Leu His Arg Gln Leu Lys Ala Val Glu His Met Cys Ser  
690 695 700

Ala Leu Gln Asn Asn Phe Cys Glu Phe Cys Lys Asp Leu Pro His Gln  
705 710 715 720

Gln Arg Gln Val Arg Ala Leu Thr Asp Arg Tyr His Ala Val Gly Asp  
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Gln Leu Asp Leu Arg Glu Lys Met Met Gln Asp Ala Gly Leu Thr Tyr  
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Gln Gln Phe Lys Asn Cys Thr Asp Asn Leu Asn Ala Trp Leu Glu Arg  
755 760 765

Leu Pro His Asn Lys Val Arg Pro Ser Asp Gly Pro Ser Gln Ile Ala  
770 775 780

Tyr Lys Leu Gln Ala Gln Lys Thr Trp Val Gln Ser Leu Gly Arg Glu  
785 790 795 800

Asp Leu Leu Glu Lys Glu Met Ala Thr His Ser Ser Ile Pro Ser Leu  
805 810 815

Cys Pro Ser Pro Pro Ala Gln Asp Tyr Glu Leu Gln Ala Asp Thr Tyr  
820 825 830

Arg Gly Ser Leu Glu Pro Thr Gln Val Gly Ser Ala Pro Lys Arg Pro  
835 840 845

Arg Val Ala Pro Leu Gln Asp Ser Ile Gln Ala Gln Glu Lys Asn Leu  
850 855 860

Thr Lys Ala Tyr Thr Glu Val Ala Ala Ala His Gln Gln Gln Leu His  
865 870 875 880

Gln Leu Glu Phe Ala Arg Lys Ile Leu Glu Lys Lys Glu Leu Asn Glu  
Seite 552

Asp Ile Gln Val Thr Pro Asn Ala Gln Gln Gly Ser Glu Ser Pro Ala  
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Arg Gly Gly Arg Lys Ser Glu Ala Leu Arg Ser Gln Leu Glu Glu Glu  
915 920 925

Arg Lys Arg Val Ala Gln Val Gln Arg Glu Leu Glu Glu Gln Arg Ser  
930 935 940

Gln Leu Leu Gln Leu Lys Thr Gln Arg Pro Val Glu Lys Leu Glu Glu  
945 950 955 960

Lys Glu Val Val Glu Phe Tyr Arg Asp Pro Gln Leu Glu Ser Asn Leu  
965 970 975

Ser Arg Val Lys Ser Gln Val Glu Asp Glu Gly Lys Lys Gln Ala Gly  
980 985 990

Leu Gln Ala Asp Leu Glu Ala Val Ala Gln Lys Val Met Gln Leu Glu  
995 1000 1005

Ser Gln Arg Lys Ala Thr Glu Pro His Leu Leu Thr Lys Glu Val  
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Thr Gln Ile Glu Arg Asp Pro Gly Leu Asp Ser Gln Ala Ala Gln  
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Leu Lys Ser Glu Leu Gln Leu Leu Gln Glu Glu Asn Thr Ala Val  
1040 1045 1050

Leu Ala Gln Leu Glu Ala Leu Lys Ala Glu Leu Leu Ala Leu Glu  
1055 1060 1065

Gln Lys Glu Val Asn Val Lys Glu Thr Val Val Val Lys Glu Val  
1070 1075 1080

Val Lys Val Glu Lys Asp Leu Glu Met Leu Gln Ala Ala Gln Ala  
1085 1090 1095

Leu Arg Leu Lys Ile Gln Glu Asp Val Ala Gln Arg Lys Gly Ala  
1100 1105 1110

Glu Asp Ala Val Ala Lys Leu Gln Ala Arg Val Val Glu Leu Glu  
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Ala Ala Ile Arg Thr Val Glu Pro Lys Val Ile Val Lys Glu Val  
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Lys Lys Val Glu Gln Asp Pro Arg Leu Leu Gln Glu Ala Ser Arg  
1145 1150 1155

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Leu	Arg 1160	Ser	Leu	Leu	Glu	Val 1165	Gln	Arg	Ser	Glu	Asn 1170	Glu	Val	Leu
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Glu	Lys 1190	Gln	Lys	Pro	Arg	Val 1195	Asp	Leu	Gln	Glu	Arg 1200	Val	Gln	Glu
Thr	Phe 1205	Arg	Val	Asp	Pro	Glu 1210	Thr	Glu	Arg	Glu	Ile 1215	Ala	Gln	Leu
Arg	Ala 1220	Glu	Leu	Gln	Glu	Thr 1225	Gly	Arg	Lys	Arg	Asn 1230	Gly	Thr	Glu
Gln	Glu 1235	Val	Glu	Arg	Leu	Leu 1240	Ser	Glu	Leu	Val	Val 1245	Leu	Arg	Ala
Gln	Lys 1250	Pro	Thr	Val	Glu	Tyr 1255	Lys	Glu	Val	Thr	Gln 1260	Glu	Leu	Val
Arg	His 1265	Glu	Lys	Asn	Pro	Glu 1270	Leu	Leu	Arg	Glu	Ile 1275	Asp	Arg	Leu
Lys	Ala 1280	Gln	Leu	Asn	Glu	Leu 1285	Val	Asn	Gly	Ser	Gly 1290	Arg	Ala	Gln
Glu	Gln 1295	Leu	Ile	Arg	Leu	Gln 1300	Gly	Glu	Arg	Asp	Glu 1305	Trp	Arg	Arg
Glu	Arg 1310	Ser	Lys	Val	Glu	Thr 1315	Lys	Thr	Val	Asn	Lys 1320	Glu	Val	Val
Arg	Arg 1325	Glu	Lys	Asp	Pro	Val 1330	Leu	Glu	Gln	Glu	Ala 1335	Gln	Arg	Leu
Arg	Gln 1340	Glu	Val	Arg	Glu	Ala 1345	Thr	Gln	Lys	Arg	Arg 1350	Ala	Ala	Glu
Asp	Ala 1355	Val	His	Gln	Leu	Gln 1360	Asn	Lys	Tyr	Leu	Leu 1365	Leu	Glu	Arg
Arg	Arg 1370	Pro	Glu	Glu	Arg	Val 1375	Val	Val	Gln	Glu	Val 1380	Val	Val	Thr
Gln	Lys 1385	Asp	Pro	Lys	Leu	His 1390	Glu	Glu	His	Ser	Arg 1395	Leu	Ser	Gln
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	1430					1435					1440			
Leu	Arg	Gln	Leu	Thr	Leu	Lys	Leu	Gln	Glu	Leu	Glu	Lys	Arg	Pro
	1445					1450					1455			
Pro	Ala	Val	Gln	Glu	Lys	Ile	Ile	Met	Glu	Glu	Val	Val	Gln	Leu
	1460					1465					1470			
Glu	Lys	Asp	Pro	Asp	Leu	Glu	Lys	Ser	Thr	Ala	Ala	Leu	Arg	Gln
	1475					1480					1485			
Asp	Leu	Ala	Gln	Glu	Lys	Thr	Gln	Ala	Thr	Glu	Val	His	Arg	Glu
	1490					1495					1500			
Cys	Lys	Asn	Leu	Gln	Val	Gln	Ile	Asp	Val	Leu	Gln	Lys	Thr	Lys
	1505					1510					1515			
Leu	Gln	Glu	Lys	Thr	Ile	Tyr	Lys	Glu	Val	Ile	Arg	Val	Glu	Lys
	1520					1525					1530			
Asp	Pro	Val	Leu	Glu	Gly	Glu	Arg	Ala	Arg	Val	Trp	Glu	Ala	Leu
	1535					1540					1545			
Asn	Arg	Glu	Arg	Ala	Ala	Arg	Glu	Ser	Arg	Glu	Glu	Glu	Val	Arg
	1550					1555					1560			
Arg	Leu	Arg	Glu	Arg	Val	Glu	Arg	Ala	Glu	Ala	Leu	Gly	Arg	Thr
	1565					1570					1575			
Trp	Ala	Arg	Glu	Glu	Ala	Glu	Leu	Gln	Lys	Thr	Arg	Asp	Arg	Ala
	1580					1585					1590			
Ser	Gln	Glu	Cys	Arg	Gln	Leu	Gln	Gln	Glu	Leu	Arg	Glu	Leu	Glu
	1595					1600					1605			
Arg	Gln	Lys	Gln	Gln	Arg	Val	Leu	His	Leu	Gln	Glu	Glu	Ser	Lys
	1610					1615					1620			
Leu	Leu	Ser	Gln	Lys	Thr	Glu	Ser	Glu	Arg	Gln	Arg	Ala	Ala	Gln
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Lys	Asp	Arg	Ile	Tyr	Glu	Lys	Glu	Arg	Thr	Leu	Arg	Asp	Leu	His
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Thr	Gln	Val	Ser	Arg	Glu	Glu	Leu	Asn	Gln	Glu	Thr	Gln	Thr	Arg
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Gly	Lys	Asp	Met	Ser	Pro	Tyr	Glu	Ala	Tyr	Lys	Arg	Gly	Val	Ile
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Glu	Glu	Val	Thr	Thr	Ser	Gly	Pro	His	Gly	Glu	Glu	Ser	Val	Leu
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Leu	Asp	Arg	Lys	Ser	Gly	Lys	Gln	Tyr	Ser	Ile	Glu	Ala	Ala	Leu
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Arg	Ser	Arg	Arg	Ile	Ser	Lys	Glu	Glu	Tyr	His	Leu	Tyr	Lys	Asp
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Gly	Gln	Leu	Pro	Ile	Ser	Glu	Phe	Ala	Leu	Leu	Val	Ala	Gly	Glu
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Thr	Lys	Pro	Cys	Pro	Ser	Leu	Ser	Ile	Gly	Ala	Ile	Ile	Ser	Lys
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Ser	Pro	Leu	Ala	Ser	Pro	Ala	Ser	Gln	Ser	Thr	Ser	Leu	Phe	Ser
	1805					1810					1815			
Pro	Ser	Phe	Ser	Leu	Gly	Leu	Ser	Glu	Asp	Ser	Phe	Pro	Ile	Ala
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Gly	Val	Tyr	Asp	Thr	Thr	Thr	Asp	Asn	Lys	Cys	Thr	Ile	Lys	Thr
	1835					1840					1845			
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Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Gly	Ile	Val	Asp	Leu	Leu	Ser
	1865					1870					1875			
Arg	Glu	Arg	Tyr	Ser	Val	His	Lys	Ala	Val	Glu	Arg	Gly	Leu	Ile
	1880					1885					1890			
Glu	Ser	Gly	Ser	Thr	Gln	Arg	Leu	Leu	Asn	Ala	Gln	Lys	Ala	Phe
	1895					1900					1905			
Thr	Gly	Ile	Glu	Asp	Pro	Val	Thr	Lys	Lys	Arg	Leu	Ser	Val	Gly
	1910					1915					1920			
Glu	Ala	Val	Gln	Lys	Gly	Trp	Met	Pro	Gln	Glu	Ser	Val	Leu	Pro



1925

1930

1935

His Leu Arg Val Gln His Leu Thr Gly Gly Leu Ile Asp Pro Lys  
 1940 1945 1950

Lys Thr Gly Arg Ile Pro Val Ala Gln Ala Val Leu Ser Gly Met  
 1955 1960 1965

Ile Ser Glu Glu Leu Ala Gln Leu Leu Gln Asp Glu Ala Ser Tyr  
 1970 1975 1980

Glu Lys Asp Leu Thr Asp Pro Ile Ser Lys Glu Arg Leu Ser Tyr  
 1985 1990 1995

Arg Glu Ala Met Gly Arg Cys Arg Lys Asp Pro Leu Ser Gly Leu  
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Leu Leu Leu Pro Ala Ser Leu Glu Gly Tyr Arg Cys Tyr Arg Ser  
 2015 2020 2025

Ala Ser Pro Thr Val Pro Arg Ser Leu Arg  
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 ggc tcc tca gcc aag ggc tcc ccc agc aag cac agc cgg gct gcc acc 96  
 Gly Ser Ser Ala Lys Gly Ser Pro Ser Lys His Ser Arg Ala Ala Thr  
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 cag gag ttg gcc ctg ctc atc tcc cgc atg cag gcc aat gct gac cag 144  
 Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala Asn Ala Asp Gln  
 35 40 45  
 gta gag agg gac att ctg gag acc cag aag aga ctg cag cag gac cgg 192  
 Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Arg Leu Gln Gln Asp Arg  
 50 55 60  
 ctg cac agc gag cag agc cag gcc ctg cag cac agg cag gaa gtg ggg 240  
 Leu His Ser Glu Gln Ser Gln Ala Leu Gln His Arg Gln Glu Val Gly  
 65 70 75 80  
 cgc agc ctg aag gag gct gag gtg ctg ctg aaa gac ctc ttc ctg gat 288  
 Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp Leu Phe Leu Asp  
 85 90 95  
 gtg gat aag gcg cgg cgg ctc aag cac cca cag gcc gag gag att gag 336  
 Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala Glu Glu Ile Glu  
 100 105 110

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agg gtc gac tgg gcg cgt gtg cta gag cag aaa cag aag cag gtc tgc Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln Lys Val Cys	480
gag ggc cag tac ggg ccg ggc atg gca gag ctg gag cag cag att gcg Glu Gly Gln Tyr Gly Pro Gly Met Ala Glu Leu Glu Gln Gln Ile Ala	528
gag cac aac atc ctg cag aag gag att gag gcc tac ggg cag cag ctc Glu His Asn Ile Leu Gln Lys Glu Ile Glu Ala Tyr Gly Gln Gln Leu	576
cgg aac ctc atc ggg ccg gac gca gct acc atc agg agc caa tac cgg Arg Asn Leu Ile Gly Pro Asp Ala Ala Thr Ile Arg Ser Gln Tyr Arg	624
gac ctc ctg aag gcg gcc tcg tgg cgc ggc cag agc ctg ggc agc ctg Asp Leu Leu Lys Ala Ala Ser Trp Arg Gly Gln Ser Leu Gly Ser Leu	672
tac acg cac ctt cag ggc tgc acg cgc cag ctg agt gcc ctg gcc cag Tyr Thr His Leu Gln Gly Cys Thr Arg Gln Leu Ser Ala Leu Ala Gln	720
cag cag cag ggc atc ctg cag cag gac tgg agc gac ctc ctg gcg gac Gln Gln Gln Gly Ile Leu Gln Gln Asp Trp Ser Asp Leu Leu Ala Asp	768
ccc cag ggc gtg ccg ccg gag tac gag cac ttc aag cag cag gag ctg Pro Gln Gly Val Arg Arg Glu Tyr Glu His Phe Lys Gln Gln Glu Leu	816
ctg agc cag gag cag agc gtg aac cag ctg gag gat gac ggg gag cgc Leu Ser Gln Glu Gln Ser Val Asn Gln Leu Glu Asp Asp Gly Glu Arg	864
atg gtg gag ctg ggg cac ccg gct gtg ggg ccc atc cag acc cac cag Met Val Glu Leu Gly His Pro Ala Val Gly Pro Ile Gln Thr His Gln	912
gag gcc ctg aag atg gaa tgg cag aac ttt cta aac ctc tgc atc tgc Glu Ala Leu Lys Met Glu Trp Gln Asn Phe Leu Asn Leu Cys Ile Cys	960
cag gag agc cag ctg cag cac gtg gag gcc tac cac cgg ttc cag gaa Gln Glu Ser Gln Leu Gln His Val Glu Ala Tyr His Arg Phe Gln Glu	1008
gag gcc gac tcc gtg agc caa acc ctg gcg aag ctg aac tcc agc ctg Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu Asn Ser Ser Leu	1056
gac acc cag tac agc cca gcc cct ggg gcg ccc cct ggc gcc ctc acg Asp Thr Gln Tyr Ser Pro Ala Pro Gly Ala Pro Pro Gly Ala Leu Thr	1104
gag ctg ctg cag cag ctg gag gca gag aag aag cat ctg gct gtc act Glu Leu Leu Gln Gln Leu Glu Ala Glu Lys Lys His Leu Ala Val Thr	1152

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ctg Leu	cag Gln	cag Gln	cgc Arg	aga Arg 405	aac Asn	cca Pro	ccc Pro	cag Gln	cag Gln 410	ccc Pro	ctg Leu	cac His	gtg Val	gac Asp 415	agc Ser	1248
atc Ile	tgt Cys	gac Asp	tgg Trp 420	gac Asp	tca Ser	gga Gly	gaa Glu	gtg Val 425	cag Gln	ctg Leu	ctg Leu	cgg Arg	ggc Gly 430	gaa Glu	cgg Arg	1296
tat Tyr	tgt Leu	ctg Leu 435	atg Met	gac Asp	aac Asn	act Thr	gac Asp 440	cag Gln	cac His	acc Thr	tgg Trp	gtc Val 445	gtt Val	cag Gln	ggc Gly	1344
cca Pro	gat Asp 450	ggg Gly	gag Glu	acc Thr	aaa Lys	cgt Arg 455	gcc Ala	cca Pro	gcc Ala	gcc Ala	tgc Cys 460	ttc Phe	tgc Cys	atc Ile	cca Pro	1392
gct Ala 465	ccg Pro	gac Asp	cct Pro	gac Asp	gct Ala 470	gtg Val	gcc Ala	agg Arg	gcc Ala	tcc Ser 475	aag Lys	ctg Leu	gcg Ala	tcg Ser	gag Glu 480	1440
ctg Leu	cag Gln	gcc Ala	ctg Leu	aag Lys 485	cag Gln	aaa Lys	ttg Leu	gcc Ala	gca Ala 490	gtc Val	cag Gln	agc Ser	gag Glu	ctg Leu 495	aca Thr	1488
gcc Ala	tgt Cys	gct Ala	gag Glu 500	cag Gln	ccc Pro	tta Leu	cag Gln	acc Thr 505	agc Ser	cag Gln	cag Gln	gct Ala	ccc Pro 510	act Thr	ggc Gly	1536
tca Ser	gcc Ala	cca Pro 515	gaa Glu	gac Asp	cca Pro	cag Gln	gcc Ala 520	cag Gln	aag Lys	ctc Leu	ctg Leu	aca Thr 525	cag Gln	atg Met	acc Thr	1584
cag Gln 530	ctg Leu	gat Asp	gga Gly	gac Asp	ctg Leu	aag Lys 535	cag Gln	ata Ile	gag Glu	agg Arg	caa Gln 540	gta Val	ctg Leu	gcc Ala	tgg Trp	1632
gcc Ala 545	cgg Arg	acc Thr	ccg Pro	ctg Leu	agc Ser 550	cgc Arg	acg Thr	aca Thr	ccc Pro	ctg Leu 555	gaa Glu	gac Asp	ctg Leu	gag Glu	ggc Gly 560	1680
cgc Arg	atc Ile	cag Gln	agc Ser	cat His 565	aag Lys	gaa Glu	aca Thr	gcc Ala 570	cag Gln	cgg Arg	ctg Leu	cag Gln	ggc Gly 575	ctg Leu	gga Gly	1728
gca Ala	gag Glu	aaa Lys	gaa Glu 580	aca Thr	gcc Ala	cag Gln	cag Gln	gag Glu 585	tgt Cys	gag Glu	gcg Ala	ttg Leu	ctg Leu 590	tcc Ser	gcc Ala	1776
cgg Arg	cct Pro	ggg Gly 595	ggc Gly	ccc Pro	gct Ala	gcc Ala	ctg Leu 600	cag Gln	ctg Leu	ccc Pro	gtg Val	gcc Ala 605	ctc Leu	aac Asn	agt Ser	1824
gtc Val 610	aag Lys	aac Asn	aag Lys	tac Tyr	agt Ser	gac Asp 615	gtg Val	cag Gln	att Ile	ctt Leu	tgc Cys 620	aac Asn	ctc Leu	tac Tyr	ggg Gly	1872
gag Glu 625	aaa Lys	gcc Ala	aga Arg	gct Ala	gcc Ala 630	ctg Leu	ggt Gly	ctg Leu	gag Glu	cgc Arg 635	cgg Arg	atc Ile	cag Gln	gac Asp	gcg Ala 640	1920
gac Asp	agg Arg	gtc Val	atc Ile	cga Arg 645	ggc Gly	ttc Phe	gag Glu	tcc Ser	act Thr 650	gtg Val	gcg Ala	cag Gln	gag Glu	ggc Gly 655	ccc Pro	1968
atc	ccc	gcc	agc	ccc	ggg	gca	ctg	cag	gag	agg	gtc	aat	gag	cta	cag	2016

Ile	Pro	Ala	Ser	Pro	Gly	Ala	Leu	Gln	Glu	Arg	Val	Asn	Glu	Leu	Gln	
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cgc	ctg	cgg	agg	gag	ctg	ctg	gaa	aag	cag	gcc	tgt	gtg	ctg	ggg	ctg	2064
Arg	Leu	Arg	Arg	Glu	Leu	Leu	Glu	Lys	Gln	Ala	Cys	Val	Leu	Gly	Leu	
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cac	cgc	gag	ctg	aag	gcc	acc	gag	cat	gca	tgc	agc	gcc	ctg	cag	aac	2112
His	Arg	Glu	Leu	Lys	Ala	Thr	Glu	His	Ala	Cys	Ser	Ala	Leu	Gln	Asn	
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Asn	Phe	Gln	Glu	Phe	Cys	Gln	Asp	Leu	Pro	Arg	Gln	Gln	Arg	Gln	Ala	
705					710					715					720	
cgg	gcc	ctt	acc	gac	cgc	tac	cac	gct	gtg	ggg	gac	cag	ctg	gac	ctg	2208
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Asn	Tyr	Leu	Asp	Asn	Leu	Ser	Phe	Trp	Leu	Glu	Asn	Leu	Pro	Arg	Asn	
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Ala	Gln	Lys	Arg	Leu	Gln	Gln	Glu	Ile	Gln	Gly	Arg	Glu	Gln	Asp	Arg	
785					790					795					800	
gcc	atg	gca	tcc	cgc	ctc	tcc	cag	gac	ctg	cag	gca	gct	ctc	cag	gac	2448
Ala	Met	Ala	Ser	Arg	Leu	Ser	Gln	Asp	Leu	Gln	Ala	Ala	Leu	Gln	Asp	
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tat	gag	ttg	cag	gca	gac	acc	tac	cgc	tgc	tcc	cta	gag	acc	acc	acc	2496
Tyr	Glu	Leu	Gln	Ala	Asp	Thr	Tyr	Arg	Cys	Ser	Leu	Glu	Thr	Thr	Thr	
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cag	gca	ggg	tca	gcc	ccc	aag	aga	ccc	cga	gtg	gct	ccc	ctg	cag	gag	2544
Gln	Ala	Gly	Ser	Ala	Pro	Lys	Arg	Pro	Arg	Val	Ala	Pro	Leu	Gln	Glu	
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Ser	Ile	Gln	Glu	Gln	Glu	Lys	Ser	Leu	Thr	Lys	Ala	Tyr	Thr	Glu	Val	
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gcg	gct	gca	cac	cag	cag	cag	ctg	cat	cag	ctg	gag	ttt	gcc	aga	agg	2640
Ala	Ala	Ala	His	Gln	Gln	Gln	Leu	His	Gln	Leu	Glu	Phe	Ala	Arg	Arg	
865					870					875					880	
atg	ctg	gag	aag	aag	gag	ctc	agt	gag	gat	gtc	cag	gtg	acc	cat	gat	2688
Met	Leu	Glu	Lys	Lys	Glu	Leu	Ser	Glu	Asp	Val	Gln	Val	Thr	His	Asp	
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Ala	Gln	Gln	Gly	Ser	Glu	Ser	Pro	Ala	Gln	Ala	Arg	Lys	Glu	Ser	Glu	
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gcc	cta	aag	tcc	cag	ctg	gag	gag	gag	agg	aag	cgg	gtg	gcc	cag	gtg	2784
Ala	Leu	Lys	Ser	Gln	Leu	Glu	Glu	Glu	Arg	Lys	Arg	Val	Ala	Gln	Val	
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cag	caa	cag	ctg	gag	gaa	cag	cgg	aac	cag	ctg	ctg	cag	ctg	aga	acc	2832
Gln	Gln	Gln	Leu	Glu	Glu	Gln	Arg	Asn	Gln	Leu	Leu	Gln	Leu	Arg	Thr	

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cgg Arg	gac Asp ccc Pro caa Gln ctg Leu 965	gag Glu agc Ser agc Ser ctg Leu tcc Ser agg Arg gta Val aag Lys tcc Ser cag Gln gta Val 975	2928
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gca Ala	gcc Ala cag Gln aag Lys gtc Val gtc Val cag Gln ctg Leu gag Glu agc Ser aag Lys aag Lys agg Arg gcc Ala atg Met caa Gln 995	3024	
cct Pro	cac His ctg Leu ctg Leu acc Thr aag Lys gag Glu gta Val acc Thr cag Gln atc Ile gag Glu agg Arg gac Asp cct Pro 1010	3069	
gac Asp	ctg Leu gag Glu agc Ser cag Gln gca Ala gcc Ala cag Gln ctc Leu agc Ser agc Ser gag Glu atc Ile ctg Leu cag Gln 1025	3114	
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gaa Glu	atg Met ctt Leu aag Lys gca Ala gcc Ala cag Gln gcc Ala ctc Leu cgg Arg ctg Leu cag Gln ctg Leu gag Glu gag Glu 1085	3294	
gac Asp	tct Ser gcg Ala cgg Arg agg Arg aag Lys ggg Gly gag Glu gaa Glu gag Glu gct Ala gtg Val gcc Ala aag Lys ctg Leu 1100	3339	
cgg Arg	gca Ala cgc Arg att Ile gaa Glu gag Glu cta Leu gag Glu cgg Arg gag Glu atc Ile ggt Gly gcc Ala gtg Val gag Glu 1115	3384	
ccc Pro	aag Lys gtg Val atc Ile gtg Val aag Lys gag Glu gtg Val aag Lys aag Lys gtg Val gag Glu cag Gln gac Asp ctg Leu 1130	3429	
ggc Gly	ctc Leu ctg Leu gaa Glu gag Glu gag Glu gag Glu tcc Ser agg Arg ctg Leu agg Arg aac Asn ctc Leu cta Leu gag Glu gag Glu 1145	3474	
gcc Ala	agg Arg agc Ser agg Arg aac Asn gcc Ala acg Thr ctg Leu gag Glu gag Glu cgc Arg gag Glu ctg Leu gag Glu gac Asp gtg Val 1160	3519	
cgg Arg	ggc Gly aag Lys tac Tyr agc Ser gtg Val gtg Val gag Glu aag Lys cag Gln aag Lys ccc Pro aaa Lys gtg Val gag Glu 1175	3564	
ctc Leu	cag Gln gag Glu cgc Arg atc Ile cac His gag Glu acc Thr ttc Phe cag Gln gtg Val gct Ala ccg Pro gag Glu acg Thr 1190	3609	

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agc Ser	agg Arg 1220	agg Arg	agc Ser	ggc Gly	gta Val	gag Glu 1225	aag Lys	gag Glu	ctg Leu	gag Glu	ggg Gly 1230	ctg Leu	ctg Leu	ccc Pro	3699
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cag Gln	gtg Val 1250	acg Thr	cag Gln	gag Glu	gtg Val	gtg Val 1255	aag Lys	cac His	gag Glu	agg Arg	agt Ser 1260	ccc Pro	gag Glu	gtg Val	3789
ctg Leu	cgg Arg 1265	gag Glu	atc Ile	gac Asp	cgc Arg	ctg Leu 1270	aag Lys	gcc Ala	cag Gln	ctg Leu	aat Asn 1275	gag Glu	ctg Leu	gta Val	3834
aac Asn	ggc Gly 1280	agc Ser	ggg Gly	cgg Arg	gcc Ala	cag Gln 1285	gag Glu	cag Gln	ctc Leu	atc Ile	cgg Arg 1290	ctg Leu	cag Gln	ggg Gly	3879
gag Glu	cgc Arg 1295	gac Asp	gag Glu	tgg Trp	agg Arg	cgg Arg 1300	gag Glu	cgg Arg	tcc Ser	aag Lys	gtg Val 1305	gag Glu	acc Thr	aag Lys	3924
aca Thr	gtg Val 1310	aac Asn	aag Lys	gag Glu	gtg Val	gtg Val 1315	cgc Arg	cac His	gag Glu	aag Lys	gac Asp 1320	cct Pro	gtc Val	ctg Leu	3969
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cag Gln	gag Glu 1445	ctc Leu	gag Glu	cag Gln	cgg Arg	cct Pro 1450	cct Pro	gcg Ala	gtg Val	caa Gln	gag Glu 1455	aag Lys	atc Ile	atc Ile	4374

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atg Met	gag Glu 1460	gag Glu	gtg Val	gtc Val	aag Lys	ctg Leu 1465	gag Glu	aaa Lys	gac Asp	ccg Pro	gat Asp 1470	ctg Leu	gag Glu	aag Lys	4419
tcc Ser	aca Thr 1475	gaa Glu	gcc Ala	ctg Leu	cgg Arg	cag Gln 1480	gac Asp	ctg Leu	gag Glu	cag Gln	gag Glu 1485	aag Lys	acc Thr	cgg Arg	4464
gtg Val	aca Thr 1490	gag Glu	ctg Leu	cat His	cgg Arg	gag Glu 1495	tgc Cys	aag Lys	aac Asn	ctg Leu	cag Gln 1500	gtg Val	cag Gln	atc Ile	4509
gac Asp	gtc Val 1505	ctc Leu	cag Gln	acc Thr	acg Thr	aaa Lys 1510	tcg Ser	cag Gln	gag Glu	aag Lys	acc Thr 1515	atc Ile	tac Tyr	aag Lys	4554
gaa Glu	gtg Val 1520	atc Ile	cgg Arg	gta Val	gag Glu	aag Lys 1525	gac Asp	cgg Arg	gtg Val	ctg Leu	gag Glu 1530	ggc Gly	gag Glu	cgg Arg	4599
tcc Ser	cgg Arg 1535	gcg Ala	tgg Trp	gag Glu	gcg Ala	ctc Leu 1540	aac Asn	cgg Arg	gag Glu	cgc Arg	ggg Gly 1545	gcc Ala	cgg Arg	cag Gln	4644
agc Ser	cgg Arg 1550	gag Glu	gag Glu	gag Glu	gtg Val	cgg Arg 1555	cac His	ctc Leu	cgg Arg	cag Gln	cgg Arg 1560	ctg Leu	gac Asp	ggg Gly	4689
gcc Ala	gag Glu 1565	gcg Ala	ctg Leu	agg Arg	agg Arg	acc Thr 1570	cgg Arg	gcc Ala	cgc Arg	gag Glu	gag Glu 1575	gct Ala	gag Glu	ctc Leu	4734
cag Gln	agg Arg 1580	tcc Ser	cgg Arg	gcc Ala	cag Gln	gcg Ala 1585	gac Asp	cag Gln	gag Glu	cac His	cgg Arg 1590	cag Gln	ctg Leu	cgg Arg	4779
cag Gln	gag Glu 1595	ctg Leu	cgg Arg	gag Glu	ctg Leu	gag Glu 1600	agg Arg	cgg Arg	aag Lys	cag Gln	cag Gln 1605	agg Arg	gcg Ala	ctg Leu	4824
cac His	ctg Leu 1610	cag Gln	gag Glu	gag Glu	gcg Ala	aag Lys 1615	ctg Leu	ctc Leu	agc Ser	cag Gln	agg Arg 1620	acg Thr	gac Asp	ggc Gly	4869
gag Glu	cgg Arg 1625	cag Gln	aag Lys	gcg Ala	gcc Ala	cag Gln 1630	cgg Arg	ggc Gly	cag Gln	gag Glu	ctc Leu 1635	tcg Ser	cag Gln	ctc Leu	4914
gag Glu	gcg Ala 1640	gcc Ala	atc Ile	ctc Leu	cgc Arg	gag Glu 1645	aag Lys	gac Asp	cag Gln	atc Ile	cac His 1650	gag Glu	aag Lys	gag Glu	4959
agg Arg	acg Thr 1655	ctg Leu	cgc Arg	gac Asp	ctc Leu	cgc Arg 1660	gcc Ala	agg Arg	gtg Val	agc Ser	agg Arg 1665	gag Glu	gag Glu	ctc Leu	5004
aac Asn	cag Gln 1670	gag Glu	acc Thr	cag Gln	acg Thr	cga Arg 1675	gag Glu	acc Thr	aac Asn	ctc Leu	tcc Ser 1680	acc Thr	aag Lys	atc Ile	5049
tcc Ser	atc Ile 1685	ttg Leu	gaa Glu	ccc Pro	gag Glu	acg Thr 1690	ggg Gly	aag Lys	gac Asp	ctg Leu	tcc Ser 1695	ccg Pro	tat Tyr	gag Glu	5094
gcc Ala	tac Tyr 1700	aag Lys	cag Gln	ggc Gly	atc Ile	atc Ile 1705	gat Asp	cgg Arg	ggc Gly	cag Gln	tac Tyr 1710	ctc Leu	cag Gln	ctc Leu	5139
cag	gag	ctc	gag	tgt	gac	tgg	gag	gag	gtc	acc	acc	tcg	ggc	ccc	5184

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Gln	Glu	Leu	Glu	Cys	Asp	Trp	Glu	Glu	Val	Thr	Thr	Ser	Gly	Pro	
	1715					1720					1725				
tgc	ggc	gag	gag	tcc	gtg	ctg	ctg	gac	cgc	aag	agc	ggg	aag	cag	5229
Cys	Gly	Glu	Glu	Ser	Val	Leu	Leu	Asp	Arg	Lys	Ser	Gly	Lys	Gln	
	1730					1735					1740				
tac	tcc	atc	gag	gcg	gcc	ctg	tac	tgc	cgg	cgc	atc	tcc	aag	gag	5274
Tyr	Ser	Ile	Glu	Ala	Ala	Leu	Tyr	Cys	Arg	Arg	Ile	Ser	Lys	Glu	
	1745					1750					1755				
gag	tac	cac	ctc	tac	aag	gac	ggc	cag	ctg	ccc	atc	tcc	gag	ttc	5319
Glu	Tyr	His	Leu	Tyr	Lys	Asp	Gly	Gln	Leu	Pro	Ile	Ser	Glu	Phe	
	1760					1765					1770				
gcg	ctg	ctc	gtg	gca	ggg	gag	acc	aag	ccc	tgc	tcc	tcg	ctc	tcc	5364
Ala	Leu	Leu	Val	Ala	Gly	Glu	Thr	Lys	Pro	Cys	Ser	Ser	Leu	Ser	
	1775					1780					1785				
att	ggc	tcc	atc	atc	tcc	aag	tcc	cca	ctc	gcc	tcc	cca	gcc	acc	5409
Ile	Gly	Ser	Ile	Ile	Ser	Lys	Ser	Pro	Leu	Ala	Ser	Pro	Ala	Thr	
	1790					1795					1800				
cag	ggc	tcc	ggt	ttc	ttc	tcc	agc	ggc	tcc	ctt	ggg	ctc	agc	gat	5454
Gln	Gly	Ser	Gly	Phe	Phe	Ser	Ser	Gly	Ser	Leu	Gly	Leu	Ser	Asp	
	1805					1810					1815				
gac	agc	ttc	ccc	atc	gct	ggc	atc	tat	gac	acg	acc	acg	gac	aac	5499
Asp	Ser	Phe	Pro	Ile	Ala	Gly	Ile	Tyr	Asp	Thr	Thr	Thr	Asp	Asn	
	1820					1825					1830				
aaa	tgc	agc	atc	aag	acg	gcc	atg	gcc	aag	aac	atg	ctg	gac	ccc	5544
Lys	Cys	Ser	Ile	Lys	Thr	Ala	Met	Ala	Lys	Asn	Met	Leu	Asp	Pro	
	1835					1840					1845				
atc	acg	ggg	cag	aag	ctg	ctg	gag	gcc	cag	gcg	gcc	aca	ggg	ggc	5589
Ile	Thr	Gly	Gln	Lys	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Gly	
	1850					1855					1860				
atc	gtg	gac	ctc	ctc	agc	cgg	gag	cgc	tac	tcc	gtg	cac	aag	gcc	5634
Ile	Val	Asp	Leu	Leu	Ser	Arg	Glu	Arg	Tyr	Ser	Val	His	Lys	Ala	
	1865					1870					1875				
atg	gaa	agg	ggg	ctg	atc	gag	aac	acc	tcg	aca	cag	agg	ctg	ctc	5679
Met	Glu	Arg	Gly	Leu	Ile	Glu	Asn	Thr	Ser	Thr	Gln	Arg	Leu	Leu	
	1880					1885					1890				
aac	gcc	cag	aag	gcc	ttc	acc	ggc	atc	gag	gat	ccc	gtc	acc	agg	5724
Asn	Ala	Gln	Lys	Ala	Phe	Thr	Gly	Ile	Glu	Asp	Pro	Val	Thr	Arg	
	1895					1900					1905				
aag	agg	ctg	tcg	gtg	ggc	gag	gcc	gtg	cag	aag	ggc	tgg	atg	ccg	5769
Lys	Arg	Leu	Ser	Val	Gly	Glu	Ala	Val	Gln	Lys	Gly	Trp	Met	Pro	
	1910					1915					1920				
cgg	gag	agc	gtg	ctc	cca	cac	ctg	cag	gtc	cag	cac	ctg	acc	ggg	5814
Arg	Glu	Ser	Val	Leu	Pro	His	Leu	Gln	Val	Gln	His	Leu	Thr	Gly	
	1925					1930					1935				
gga	ctc	atc	gac	ccc	aag	agg	acc	ggc	cgc	atc	cct	gtc	cct	cag	5859
Gly	Leu	Ile	Asp	Pro	Lys	Arg	Thr	Gly	Arg	Ile	Pro	Val	Pro	Gln	
	1940					1945					1950				
gcc	gtg	ctc	tcc	gga	atg	atc	agt	gaa	gag	ctg	gcc	cag	ctc	ctg	5904
Ala	Val	Leu	Ser	Gly	Met	Ile	Ser	Glu	Glu	Leu	Ala	Gln	Leu	Leu	
	1955					1960					1965				
cag	gat	gag	tcc	ggc	tat	gag	aag	gat	ttg	aca	gac	ccc	atc	tcc	5949
Gln	Asp	Glu	Ser	Gly	Tyr	Glu	Lys	Asp	Leu	Thr	Asp	Pro	Ile	Ser	



1970

1975

1980

agg	gag	cgg	atg	agc	tac	aag	gag	gcc	atg	ggg	cgc	tgc	cgg	aga	5994
Arg	Glu	Arg	Met	Ser	Tyr	Lys	Glu	Ala	Met	Gly	Arg	Cys	Arg	Arg	
	1985					1990					1995				
gac	ccc	ctg	agc	ggc	ctg	ctg	ctg	ctc	cca	gcc	acg	ctg	gag	ggg	6039
Asp	Pro	Leu	Ser	Gly	Leu	Leu	Leu	Leu	Pro	Ala	Thr	Leu	Glu	Gly	
	2000					2005					2010				
tac	cac	tgc	tac	cgc	tcc	gcc	tcc	ccc	agg	gcg	ctg	cgc	tcc	ctg	6084
Tyr	His	Cys	Tyr	Arg	Ser	Ala	Ser	Pro	Arg	Ala	Leu	Arg	Ser	Leu	
	2015					2020					2025				
cgc															6087
Arg															

<210> 96  
 <211> 2029  
 <212> PRT  
 <213> Canis familiaris

<400> 96

Met Phe Lys Gly Leu Ser Lys Gly Ser Gln Gly Lys Gly Ser Pro Lys  
 1 5 10 15

Gly Ser Ser Ala Lys Gly Ser Pro Ser Lys His Ser Arg Ala Ala Thr  
 20 25 30

Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala Asn Ala Asp Gln  
 35 40 45

Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Arg Leu Gln Gln Asp Arg  
 50 55 60

Leu His Ser Glu Gln Ser Gln Ala Leu Gln His Arg Gln Glu Val Gly  
 65 70 75 80

Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp Leu Phe Leu Asp  
 85 90 95

Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala Glu Glu Ile Glu  
 100 105 110

Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln Glu Cys Ala Glu  
 115 120 125

Tyr Arg Ala Leu Tyr Glu Lys Ile Val Leu Pro Pro Asp Val Gly Pro  
 130 135 140

Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln Lys Gln Val Cys  
 145 150 155 160

Glu Gly Gln Tyr Gly Pro Gly Met Ala Glu Leu Glu Gln Gln Ile Ala  
 165 170 175

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Glu His Asn Ile Leu Gln Lys Glu Ile Glu Ala Tyr Gly Gln Gln Leu  
180 185 190

Arg Asn Leu Ile Gly Pro Asp Ala Ala Thr Ile Arg Ser Gln Tyr Arg  
195 200 205

Asp Leu Leu Lys Ala Ala Ser Trp Arg Gly Gln Ser Leu Gly Ser Leu  
210 215 220

Tyr Thr His Leu Gln Gly Cys Thr Arg Gln Leu Ser Ala Leu Ala Gln  
225 230 235 240

Gln Gln Gln Gly Ile Leu Gln Gln Asp Trp Ser Asp Leu Leu Ala Asp  
245 250 255

Pro Gln Gly Val Arg Arg Glu Tyr Glu His Phe Lys Gln Gln Glu Leu  
260 265 270

Leu Ser Gln Glu Gln Ser Val Asn Gln Leu Glu Asp Asp Gly Glu Arg  
275 280 285

Met Val Glu Leu Gly His Pro Ala Val Gly Pro Ile Gln Thr His Gln  
290 295 300

Glu Ala Leu Lys Met Glu Trp Gln Asn Phe Leu Asn Leu Cys Ile Cys  
305 310 315 320

Gln Glu Ser Gln Leu Gln His Val Glu Ala Tyr His Arg Phe Gln Glu  
325 330 335

Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu Asn Ser Ser Leu  
340 345 350

Asp Thr Gln Tyr Ser Pro Ala Pro Gly Ala Pro Pro Gly Ala Leu Thr  
355 360 365

Glu Leu Leu Gln Gln Leu Glu Ala Glu Lys Lys His Leu Ala Val Thr  
370 375 380

Glu Lys Thr Ile Arg Asp Leu Gln Arg Gln Ser Gln Gln Val Ala Pro  
385 390 395 400

Leu Gln Gln Arg Arg Asn Pro Pro Gln Gln Pro Leu His Val Asp Ser  
405 410 415

Ile Cys Asp Trp Asp Ser Gly Glu Val Gln Leu Leu Arg Gly Glu Arg  
420 425 430

Tyr Leu Leu Met Asp Asn Thr Asp Gln His Thr Trp Val Val Gln Gly  
435 440 445

Pro Asp Gly Glu Thr Lys Arg Ala Pro Ala Ala Cys Phe Cys Ile Pro  
450 455 460

Ala Pro Asp Pro Asp Ala Val Ala Arg Ala Ser Lys Leu Ala Ser Glu  
465 470 475 480

Leu Gln Ala Leu Lys Gln Lys Leu Ala Ala Val Gln Ser Glu Leu Thr  
485 490 495

Ala Cys Ala Glu Gln Pro Leu Gln Thr Ser Gln Gln Ala Pro Thr Gly  
500 505 510

Ser Ala Pro Glu Asp Pro Gln Ala Gln Lys Leu Leu Thr Gln Met Thr  
515 520 525

Gln Leu Asp Gly Asp Leu Lys Gln Ile Glu Arg Gln Val Leu Ala Trp  
530 535 540

Ala Arg Thr Pro Leu Ser Arg Thr Thr Pro Leu Glu Asp Leu Glu Gly  
545 550 555 560

Arg Ile Gln Ser His Lys Glu Thr Ala Gln Arg Leu Gln Gly Leu Gly  
565 570 575

Ala Glu Lys Glu Thr Ala Gln Gln Glu Cys Glu Ala Leu Leu Ser Ala  
580 585 590

Arg Pro Gly Gly Pro Ala Ala Leu Gln Leu Pro Val Ala Leu Asn Ser  
595 600 605

Val Lys Asn Lys Tyr Ser Asp Val Gln Ile Leu Cys Asn Leu Tyr Gly  
610 615 620

Glu Lys Ala Arg Ala Ala Leu Gly Leu Glu Arg Arg Ile Gln Asp Ala  
625 630 635 640

Asp Arg Val Ile Arg Gly Phe Glu Ser Thr Val Ala Gln Glu Gly Pro  
645 650 655

Ile Pro Ala Ser Pro Gly Ala Leu Gln Glu Arg Val Asn Glu Leu Gln  
660 665 670

Arg Leu Arg Arg Glu Leu Leu Glu Lys Gln Ala Cys Val Leu Gly Leu  
675 680 685

His Arg Glu Leu Lys Ala Thr Glu His Ala Cys Ser Ala Leu Gln Asn  
690 695 700

Asn Phe Gln Glu Phe Cys Gln Asp Leu Pro Arg Gln Gln Arg Gln Ala  
705 710 715 720

Arg Ala Leu Thr Asp Arg Tyr His Ala Val Gly Asp Gln Leu Asp Leu  
Seite 567

Arg Glu Lys Met Leu Gln Asp Val Gly Leu Thr Tyr Gln Gln Phe Lys  
740 745 750

Asn Tyr Leu Asp Asn Leu Ser Phe Trp Leu Glu Asn Leu Pro Arg Asn  
755 760 765

Glu Val Arg Pro Ser Asp Gly Pro Ser Gln Leu Ala Tyr Lys Leu Gln  
770 775 780

Ala Gln Lys Arg Leu Gln Gln Glu Ile Gln Gly Arg Glu Gln Asp Arg  
785 790 795 800

Ala Met Ala Ser Arg Leu Ser Gln Asp Leu Gln Ala Ala Leu Gln Asp  
805 810 815

Tyr Glu Leu Gln Ala Asp Thr Tyr Arg Cys Ser Leu Glu Thr Thr Thr  
820 825 830

Gln Ala Gly Ser Ala Pro Lys Arg Pro Arg Val Ala Pro Leu Gln Glu  
835 840 845

Ser Ile Gln Glu Gln Glu Lys Ser Leu Thr Lys Ala Tyr Thr Glu Val  
850 855 860

Ala Ala Ala His Gln Gln Gln Leu His Gln Leu Glu Phe Ala Arg Arg  
865 870 875 880

Met Leu Glu Lys Lys Glu Leu Ser Glu Asp Val Gln Val Thr His Asp  
885 890 895

Ala Gln Gln Gly Ser Glu Ser Pro Ala Gln Ala Arg Lys Glu Ser Glu  
900 905 910

Ala Leu Lys Ser Gln Leu Glu Glu Glu Arg Lys Arg Val Ala Gln Val  
915 920 925

Gln Gln Gln Leu Glu Glu Gln Arg Asn Gln Leu Leu Gln Leu Arg Thr  
930 935 940

Gln Arg Pro Leu Glu Arg Leu Glu Glu Lys Glu Val Val Glu Phe Tyr  
945 950 955 960

Arg Asp Pro Gln Leu Glu Ser Ser Leu Ser Arg Val Lys Ser Gln Val  
965 970 975

Glu Glu Glu Gly Lys Lys Arg Ala Gly Leu Gln Ala Asp Leu Glu Ala  
980 985 990

Ala Ala Gln Lys Val Val Gln Leu Glu Ser Lys Lys Arg Ala Met Gln  
995 1000 1005

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Pro	His	Leu	Leu	Thr	Lys	Glu	Val	Thr	Gln	Ile	Glu	Arg	Asp	Pro
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Asp	Leu	Glu	Ser	Gln	Ala	Ala	Gln	Leu	Ser	Ser	Glu	Ile	Leu	Gln
	1025					1030					1035			
Leu	Arg	Gly	Glu	Asn	Ala	Thr	Val	Ser	Ala	Arg	Leu	Glu	Val	Leu
	1040					1045					1050			
Lys	Lys	Glu	Leu	Leu	Ala	Leu	Glu	Gln	Lys	Glu	Pro	Asn	Val	Lys
	1055					1060					1065			
Glu	Arg	Val	Val	Val	Lys	Glu	Val	Val	Lys	Val	Glu	Lys	Asp	Leu
	1070					1075					1080			
Glu	Met	Leu	Lys	Ala	Ala	Gln	Ala	Leu	Arg	Leu	Gln	Leu	Glu	Glu
	1085					1090					1095			
Asp	Ser	Ala	Arg	Arg	Lys	Gly	Ala	Glu	Glu	Ala	Val	Ala	Lys	Leu
	1100					1105					1110			
Arg	Ala	Arg	Ile	Glu	Glu	Leu	Glu	Arg	Ala	Ile	Gly	Ala	Val	Glu
	1115					1120					1125			
Pro	Lys	Val	Ile	Val	Lys	Glu	Val	Lys	Lys	Val	Glu	Gln	Asp	Leu
	1130					1135					1140			
Gly	Leu	Leu	Glu	Glu	Ala	Ser	Arg	Leu	Arg	Asn	Leu	Leu	Glu	Glu
	1145					1150					1155			
Ala	Arg	Ser	Arg	Asn	Ala	Thr	Leu	Ala	Arg	Glu	Leu	Glu	Asp	Val
	1160					1165					1170			
Arg	Gly	Lys	Tyr	Ser	Val	Val	Glu	Lys	Gln	Lys	Pro	Lys	Val	Glu
	1175					1180					1185			
Leu	Gln	Glu	Arg	Ile	His	Glu	Thr	Phe	Gln	Val	Ala	Pro	Glu	Thr
	1190					1195					1200			
Gln	Gln	Glu	Ile	Ala	Arg	Leu	Arg	Ala	Gln	Leu	Gln	Asp	Thr	Ala
	1205					1210					1215			
Ser	Arg	Arg	Ser	Gly	Val	Glu	Lys	Glu	Leu	Glu	Gly	Leu	Leu	Pro
	1220					1225					1230			
Glu	Leu	Ala	Ala	Leu	Arg	Ala	Gln	Lys	Pro	Ala	Val	Glu	Tyr	Lys
	1235					1240					1245			
Gln	Val	Thr	Gln	Glu	Val	Val	Lys	His	Glu	Arg	Ser	Pro	Glu	Val
	1250					1255					1260			

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Leu Arg Glu Ile Asp Arg Leu Lys Ala Gln Leu Asn Glu Leu Val  
 1265 1270 1275  
 Asn Gly Ser Gly Arg Ala Gln Glu Gln Leu Ile Arg Leu Gln Gly  
 1280 1285 1290  
 Glu Arg Asp Glu Trp Arg Arg Glu Arg Ser Lys Val Glu Thr Lys  
 1295 1300 1305  
 Thr Val Asn Lys Glu Val Val Arg His Glu Lys Asp Pro Val Leu  
 1310 1315 1320  
 Glu Lys Glu Ala Glu Arg Leu Arg Gln Glu Val Arg Glu Ala Thr  
 1325 1330 1335  
 Gln Arg Arg Arg Ala Thr Glu Asp Val Val Ser Glu Leu Gln Asn  
 1340 1345 1350  
 Arg Tyr Leu Leu Leu Glu Arg Arg Arg Pro Glu Glu Arg Val Val  
 1355 1360 1365  
 Val Gln Glu Val Val Val Thr Gln Lys Asp Pro Lys Leu Arg Glu  
 1370 1375 1380  
 Asp His Gly Arg Leu Ser Gln Ser Leu Asp Glu Glu Ala Gly Arg  
 1385 1390 1395  
 Arg Arg Gln Leu Glu Arg Glu Val Gln Gln Leu Arg Ala Gly Val  
 1400 1405 1410  
 Gln Glu Lys Glu Ser Leu Leu Ser Phe Gln Glu Asp Arg Thr Lys  
 1415 1420 1425  
 Lys Leu Ala Val Glu Arg Glu Leu Arg Gln Leu Thr Leu Arg Ile  
 1430 1435 1440  
 Gln Glu Leu Glu Gln Arg Pro Pro Ala Val Gln Glu Lys Ile Ile  
 1445 1450 1455  
 Met Glu Glu Val Val Lys Leu Glu Lys Asp Pro Asp Leu Glu Lys  
 1460 1465 1470  
 Ser Thr Glu Ala Leu Arg Gln Asp Leu Glu Gln Glu Lys Thr Arg  
 1475 1480 1485  
 Val Thr Glu Leu His Arg Glu Cys Lys Asn Leu Gln Val Gln Ile  
 1490 1495 1500  
 Asp Val Leu Gln Thr Thr Lys Ser Gln Glu Lys Thr Ile Tyr Lys  
 1505 1510 1515

Glu	Val	Ile	Arg	Val	Glu	Lys	Asp	Arg	Val	Leu	Glu	Gly	Glu	Arg
1520						1525					1530			
Ser	Arg	Ala	Trp	Glu	Ala	Leu	Asn	Arg	Glu	Arg	Gly	Ala	Arg	Gln
1535						1540					1545			
Ser	Arg	Glu	Glu	Glu	Val	Arg	His	Leu	Arg	Gln	Arg	Leu	Asp	Gly
1550						1555					1560			
Ala	Glu	Ala	Leu	Arg	Arg	Thr	Arg	Ala	Arg	Glu	Glu	Ala	Glu	Leu
1565						1570					1575			
Gln	Arg	Ser	Arg	Ala	Gln	Ala	Asp	Gln	Glu	His	Arg	Gln	Leu	Arg
1580						1585					1590			
Gln	Glu	Leu	Arg	Glu	Leu	Glu	Arg	Arg	Lys	Gln	Gln	Arg	Ala	Leu
1595						1600					1605			
His	Leu	Gln	Glu	Glu	Ala	Lys	Leu	Leu	Ser	Gln	Arg	Thr	Asp	Gly
1610						1615					1620			
Glu	Arg	Gln	Lys	Ala	Ala	Gln	Arg	Gly	Gln	Glu	Leu	Ser	Gln	Leu
1625						1630					1635			
Glu	Ala	Ala	Ile	Leu	Arg	Glu	Lys	Asp	Gln	Ile	His	Glu	Lys	Glu
1640						1645					1650			
Arg	Thr	Leu	Arg	Asp	Leu	Arg	Ala	Arg	Val	Ser	Arg	Glu	Glu	Leu
1655						1660					1665			
Asn	Gln	Glu	Thr	Gln	Thr	Arg	Glu	Thr	Asn	Leu	Ser	Thr	Lys	Ile
1670						1675					1680			
Ser	Ile	Leu	Glu	Pro	Glu	Thr	Gly	Lys	Asp	Leu	Ser	Pro	Tyr	Glu
1685						1690					1695			
Ala	Tyr	Lys	Gln	Gly	Ile	Ile	Asp	Arg	Gly	Gln	Tyr	Leu	Gln	Leu
1700						1705					1710			
Gln	Glu	Leu	Glu	Cys	Asp	Trp	Glu	Glu	Val	Thr	Thr	Ser	Gly	Pro
1715						1720					1725			
Cys	Gly	Glu	Glu	Ser	Val	Leu	Leu	Asp	Arg	Lys	Ser	Gly	Lys	Gln
1730						1735					1740			
Tyr	Ser	Ile	Glu	Ala	Ala	Leu	Tyr	Cys	Arg	Arg	Ile	Ser	Lys	Glu
1745						1750					1755			
Glu	Tyr	His	Leu	Tyr	Lys	Asp	Gly	Gln	Leu	Pro	Ile	Ser	Glu	Phe
1760						1765					1770			
Ala	Leu	Leu	Val	Ala	Gly	Glu	Thr	Lys	Pro	Cys	Ser	Ser	Leu	Ser

1775

1780

1785

Ile Gly Ser Ile Ile Ser Lys Ser Pro Leu Ala Ser Pro Ala Thr  
 1790 1795 1800

Gln Gly Ser Gly Phe Phe Ser Ser Gly Ser Leu Gly Leu Ser Asp  
 1805 1810 1815

Asp Ser Phe Pro Ile Ala Gly Ile Tyr Asp Thr Thr Thr Asp Asn  
 1820 1825 1830

Lys Cys Ser Ile Lys Thr Ala Met Ala Lys Asn Met Leu Asp Pro  
 1835 1840 1845

Ile Thr Gly Gln Lys Leu Leu Glu Ala Gln Ala Ala Thr Gly Gly  
 1850 1855 1860

Ile Val Asp Leu Leu Ser Arg Glu Arg Tyr Ser Val His Lys Ala  
 1865 1870 1875

Met Glu Arg Gly Leu Ile Glu Asn Thr Ser Thr Gln Arg Leu Leu  
 1880 1885 1890

Asn Ala Gln Lys Ala Phe Thr Gly Ile Glu Asp Pro Val Thr Arg  
 1895 1900 1905

Lys Arg Leu Ser Val Gly Glu Ala Val Gln Lys Gly Trp Met Pro  
 1910 1915 1920

Arg Glu Ser Val Leu Pro His Leu Gln Val Gln His Leu Thr Gly  
 1925 1930 1935

Gly Leu Ile Asp Pro Lys Arg Thr Gly Arg Ile Pro Val Pro Gln  
 1940 1945 1950

Ala Val Leu Ser Gly Met Ile Ser Glu Glu Leu Ala Gln Leu Leu  
 1955 1960 1965

Gln Asp Glu Ser Gly Tyr Glu Lys Asp Leu Thr Asp Pro Ile Ser  
 1970 1975 1980

Arg Glu Arg Met Ser Tyr Lys Glu Ala Met Gly Arg Cys Arg Arg  
 1985 1990 1995

Asp Pro Leu Ser Gly Leu Leu Leu Leu Pro Ala Thr Leu Glu Gly  
 2000 2005 2010

Tyr His Cys Tyr Arg Ser Ala Ser Pro Arg Ala Leu Arg Ser Leu  
 2015 2020 2025

Arg



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 <211> 1944  
 <212> DNA  
 <213> Danio rerio

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 Pro Glu Glu Lys Leu Val Val Gln Glu Val Val Arg Leu Gln Lys Asp  
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 Pro Arg Gln Ile Leu Asp His Asp Arg Leu Gly Arg Ser Leu Asp Glu  
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 Glu Val Lys Asn Arg Arg Lys Leu Glu Leu Glu Val Gln Gln Leu Arg  
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 Ala Leu Ile Glu Asp Lys Glu Ile Ala Ile Arg Ser Ser Asp Glu Lys  
 65 70 75 80  
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 Gln Lys Lys Ile Gln Val Glu Thr Glu Leu Arg Gln Ile Lys Ser Arg  
 85 90 95  
 att cat gag cta gaa act gcc cca cct cct att gaa gag aac ata gtc 336  
 Ile His Glu Leu Glu Thr Ala Pro Pro Pro Ile Glu Glu Asn Ile Val  
 100 105 110  
 ata gag gaa gtt cta aaa gtt gag agg gat cca aaa ctt gat aaa ctg 384  
 Ile Glu Glu Val Leu Lys Val Glu Arg Asp Pro Lys Leu Asp Lys Leu  
 115 120 125  
 aca aat ggt ctt cgc aca gat atg gat aaa gaa agc agc gac att atg 432  
 Thr Asn Gly Leu Arg Thr Asp Met Asp Lys Glu Ser Ser Asp Ile Met  
 130 135 140  
 cgt cta gaa aga gat atc agg aaa ttg gca ctt gat att gaa atc ttg 480  
 Arg Leu Glu Arg Asp Ile Arg Lys Leu Ala Leu Asp Ile Glu Ile Leu  
 145 150 155 160  
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 Gln Arg Glu Lys Ser Val Glu Lys Thr Ile Tyr Lys Glu Val Val Arg  
 165 170 175  
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 Val Glu Lys Asp Gln Ala Leu Glu Ala Glu Arg Ser His Leu Arg Asp  
 180 185 190  
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 Gln Phe Leu Gln Glu Lys Asn Val Arg Arg Asp Leu Glu Asp Lys Leu  
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 cat cgt cta caa gag aaa cta cag caa caa gca agc aaa aaa acg gca 672  
 His Arg Leu Gln Glu Lys Leu Gln Gln Gln Ala Ser Lys Lys Thr Ala  
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Arg	Glu	Lys	Glu	Asn	Leu	Gln	Arg	Glu	Leu	Arg	Ser	Leu	Glu	Ser	Glu	
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Arg	Gln	Asn	Ile	Thr	Ile	Ser	Phe	Gln	Gln	His	Ser	Arg	Leu	Met	Ser	
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Glu	Arg	Asn	Gln	Met	Asn	Arg	Gln	Arg	Ser	Ile	Lys	Met	Glu	Ser	Asp	
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Gly	Gln	Arg	Leu	Glu	Arg	Asp	Ile	Leu	Asp	Glu	Lys	Asp	Lys	Ile	His	
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Lys	Arg	Asp	Asn	Ile	Ile	Arg	Glu	Leu	Lys	Asn	Ser	Leu	Gln	Lys	Glu	
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Asp	Ser	Ser	Glu	Met	Arg	Thr	Lys	Glu	Val	Asn	Val	Ser	Thr	Lys	Ile	
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Ser	Ile	Leu	Asp	Pro	Asn	Thr	Gly	Lys	Asp	Met	Ser	Pro	Tyr	Asp	Ala	
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Tyr	Arg	Gln	Gly	Phe	Leu	Asp	Arg	Asn	Lys	Tyr	Leu	Gln	Leu	Gln	Glu	
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Thr	Ala	Leu	Lys	Glu	Gly	Lys	Val	Thr	Lys	Tyr	Gln	Leu	Gln	Gln	Tyr	
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Lys	Asp	Gly	Lys	Met	Ser	Ile	Ser	Glu	Phe	Ala	Leu	Leu	Val	Ala	Gly	
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Glu	Lys	Lys	Ser	Ser	Ser	Tyr	Thr	Pro	His	Phe	Asn	Ser	Gln	Leu	Asn	
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Gln	Gln	Leu	Lys	Glu	Glu	Phe	Pro	Ile	Cys	Gly	Val	Tyr	Asp	Val	His	
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Thr	Asp	Ser	Cys	Val	Asn	Val	Arg	Ser	Ala	Met	Ser	Arg	Lys	Leu	Ile	
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Asp	Thr	Asn	Thr	Ala	Gln	Lys	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	
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Gly	Ile	Val	Asp	Ile	Ser	Asn	Gly	Ile	Lys	Tyr	Ser	Val	His	Lys	Ala		
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Ala	Asp	Arg	Gly	Leu	Ile	Glu	Ser	Ser	Gln	Leu	Gln	Arg	Leu	Leu	Asn		
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Pro	Asn	Lys	Ala	Gly	Arg	Val	Asn	Ile	Val	Asp	Ala	Val	Ser	Ser	Lys		
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Ala	Lys	Glu	Leu	Thr	Asp	Pro	Ile	Thr	Lys	Glu	Lys	Ile	Asn	Tyr	Lys		
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Gln	Ala	Leu	Ala	Arg	Cys	Lys	Ile	Asp	Pro	Leu	Ser	Gly	Leu	Pro	Met		
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Phe	Asn	Ala	Ser	Ser	Lys	Asn	Val										
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 <213> Danio rerio  
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Glu	Val	Lys	Asn	Arg	Arg	Lys	Leu	Glu	Leu	Glu	Val	Gln	Gln	Leu	Arg
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Ala	Leu	Ile	Glu	Asp	Lys	Glu	Ile	Ala	Ile	Arg	Ser	Ser	Asp	Glu	Lys
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Gln	Lys	Lys	Ile	Gln	Val	Glu	Thr	Glu	Leu	Arg	Gln	Ile	Lys	Ser	Arg
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Ile Glu Glu<sub>115</sub> Val Leu Lys Val Glu<sub>120</sub> Arg Asp Pro Lys Leu<sub>125</sub> Asp Lys Leu

Thr Asn<sub>130</sub> Gly Leu Arg Thr Asp<sub>135</sub> Met Asp Lys Glu Ser<sub>140</sub> Ser Asp Ile Met

Arg Leu Glu Arg Asp Ile<sub>150</sub> Arg Lys Leu Ala Leu<sub>155</sub> Asp Ile Glu Ile Leu<sub>160</sub>

Gln Arg Glu Lys Ser<sub>165</sub> Val Glu Lys Thr Ile<sub>170</sub> Tyr Lys Glu Val Val<sub>175</sub> Arg

Val Glu Lys Asp<sub>180</sub> Gln Ala Leu Glu Ala<sub>185</sub> Glu Arg Ser His Leu<sub>190</sub> Arg Asp

Gln Phe Leu<sub>195</sub> Gln Glu Lys Asn Val<sub>200</sub> Arg Arg Asp Leu Glu<sub>205</sub> Asp Lys Leu

His Arg<sub>210</sub> Leu Gln Glu Lys Leu<sub>215</sub> Gln Gln Gln Ala Ser<sub>220</sub> Lys Lys Thr Ala

Met Ser Leu Glu Glu Thr<sub>230</sub> Asn Leu Val His Asp<sub>235</sub> Arg Asp Lys Leu Gln<sub>240</sub>

Arg Glu Lys Glu Asn<sub>245</sub> Leu Gln Arg Glu Leu<sub>250</sub> Arg Ser Leu Glu Ser<sub>255</sub> Glu

Arg Gln Asn Ile<sub>260</sub> Thr Ile Ser Phe Gln<sub>265</sub> Gln His Ser Arg Leu<sub>270</sub> Met Ser

Glu Arg Asn<sub>275</sub> Gln Met Asn Arg Gln<sub>280</sub> Arg Ser Ile Lys Met<sub>285</sub> Glu Ser Asp

Gly Gln Arg Leu Glu Arg Asp<sub>295</sub> Ile Leu Asp Glu Lys<sub>300</sub> Asp Lys Ile His

Lys Arg Asp Asn Ile Ile<sub>310</sub> Arg Glu Leu Lys Asn<sub>315</sub> Ser Leu Gln Lys Glu<sub>320</sub>

Asp Ser Ser Glu Met<sub>325</sub> Arg Thr Lys Glu Val<sub>330</sub> Asn Val Ser Thr Lys<sub>335</sub> Ile

Ser Ile Leu Asp<sub>340</sub> Pro Asn Thr Gly Lys<sub>345</sub> Asp Met Ser Pro Tyr<sub>350</sub> Asp Ala

Tyr Arg Gln<sub>355</sub> Gly Phe Leu Asp Arg<sub>360</sub> Asn Lys Tyr Leu Gln<sub>365</sub> Leu Gln Glu

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Thr Ala Leu Lys Glu Gly Lys Val Thr Lys Tyr Gln Leu Gln Gln Tyr  
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Lys Asp Gly Lys Met Ser Ile Ser Glu Phe Ala Leu Leu Val Ala Gly  
420 425 430

Glu Lys Lys Ser Ser Ser Tyr Thr Pro His Phe Asn Ser Gln Leu Asn  
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Gln Gln Leu Lys Glu Glu Phe Pro Ile Cys Gly Val Tyr Asp Val His  
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Thr Asp Ser Cys Val Asn Val Arg Ser Ala Met Ser Arg Lys Leu Ile  
465 470 475 480

Asp Thr Asn Thr Ala Gln Lys Leu Leu Glu Ala Gln Ala Ala Thr Gly  
485 490 495

Gly Ile Val Asp Ile Ser Asn Gly Ile Lys Tyr Ser Val His Lys Ala  
500 505 510

Ala Asp Arg Gly Leu Ile Glu Ser Ser Gln Leu Gln Arg Leu Leu Asn  
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Ala Gln Lys Ala Phe Thr Gly Val Glu Asp Pro Met Thr Lys Glu Arg  
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Leu Ser Val Gly Glu Ala Val Gln Lys Gly Trp Met Pro Lys Glu Asn  
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Ala Met Arg Tyr Met Glu Ala Gln Phe Leu Thr Gly Gly Leu Val Asn  
565 570 575

Pro Asn Lys Ala Gly Arg Val Asn Ile Val Asp Ala Val Ser Ser Lys  
580 585 590

Met Ile Asp Ser Thr Met Met Arg Glu Leu Gln Glu Glu Ile Asn Tyr  
595 600 605

Ala Lys Glu Leu Thr Asp Pro Ile Thr Lys Glu Lys Ile Asn Tyr Lys  
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ggc tcc cca gct aag ggg tcc cct aag ggc tcc ccc aac aag cac agt      96
Gly Ser Pro Ala Lys Gly Ser Pro Lys Gly Ser Pro Asn Lys His Ser
                               20          25          30

cgg gct gca acc cag gaa ctg gct ctg ctc atc tct cgc atg caa gcc      144
Arg Ala Ala Thr Gln Glu Leu Ala Leu Leu Ile Ser Arg Met Gln Ala
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aat gct gac cag gta gag agg gac att ttg gag act cag aag aag ctg      192
Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Lys Leu
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cag caa gtc aac aag aac att ggg gaa ctt gtg gtg agc ctt tgc gcc      240
Gln Gln Val Asn Lys Asn Ile Gly Glu Leu Val Val Ser Leu Cys Ala
65          70          75          80

ctg acc aca tgg gtc atg cct cac cag gat cgg cag aat ggt gca cag      288
Leu Thr Thr Trp Val Met Pro His Gln Asp Arg Gln Asn Gly Ala Gln
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aat cag gca cta cag cac cag cag gag acg ggc cgc aac ctg aag gaa      336
Asn Gln Ala Leu Gln His Gln Gln Glu Thr Gly Arg Asn Leu Lys Glu
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gcg gag gta ctc ctc aaa gat ctc ttc ctg gat gta gac aag gct cgg      384
Ala Glu Val Leu Leu Lys Asp Leu Phe Leu Asp Val Asp Lys Ala Arg
                               115          120          125

cgc ctc aag cac cca cag gct gag gag att gag aaa gac atc aag cag      432
Arg Leu Lys His Pro Gln Ala Glu Glu Ile Glu Lys Asp Ile Lys Gln
                               130          135          140

ctg cac gaa cga gtg acc cag gag tgt gcg gag tat cga gct ctg tat      480
Leu His Glu Arg Val Thr Gln Glu Cys Ala Glu Tyr Arg Ala Leu Tyr
145          150          155          160

gag aag ata gtg ctg ccg ccg gat gtg ggg ccc agg gtc gac tgg aca      528
Glu Lys Ile Val Leu Pro Pro Asp Val Gly Pro Arg Val Asp Trp Thr
                               165          170          175

cgg gtg ctg gag cag aaa cag aag ctg atc tgt gag ggc cac tat ggg      576
Arg Val Leu Glu Gln Lys Gln Lys Leu Ile Cys Glu Gly His Tyr Gly
                               180          185          190

cct ggg atg gca gaa ctg gaa cag cag gtg gcc gag cac aac atc ctg      624
Pro Gly Met Ala Glu Leu Glu Gln Gln Val Ala Glu His Asn Ile Leu
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cag agg gaa atc gag gct tac ggg cag cag ctg cgg aca ctg gtg gga      672
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ggc tgc acg aag cag ctg ggc gcc ctg gcg gat caa caa ggc cgc atc Gly Cys Thr Lys Gln Leu Gly Ala Leu Ala Asp Gln Gln Gly Arg Ile 260 265 270			816
ctg cag cag gat tgg agt gac ctc atg cct gac ccc gct ggt gtg agg Leu Gln Gln Asp Trp Ser Asp Leu Met Pro Asp Pro Ala Gly Val Arg 275 280 285			864
cga gag tat gag cac ttc aag cag cat gag ctg ctg gcc cag gaa cag Arg Glu Tyr Glu His Phe Lys Gln His Glu Leu Leu Ala Gln Glu Gln 290 295 300			912
agt ata aac cag ttg gag gat gac gca gag cgc atg gtc gag ctc ggg Ser Ile Asn Gln Leu Glu Asp Asp Ala Glu Arg Met Val Glu Leu Gly 305 310 315 320			960
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gag tgg cag aat ttc cta aac ctg tgc atc tgt cag gag agc cag ctg Glu Trp Gln Asn Phe Leu Asn Leu Cys Ile Cys Gln Glu Ser Gln Leu 340 345 350			1056
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gct Ala	gac Asp	cca Pro	cag Gln	gct Ala 565	cag Gln	aag Lys	ctc Leu	ctg Leu	tca Ser 570	cag Gln	atg Met	acc Thr	cag Gln	ctg Leu 575	gat Asp	1728
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ccg Pro	ttg Leu	aac Asn 595	gac Asp	tct Ser	tct Ser	cca Pro	ctg Leu 600	aag Lys	gac Asp	cta Leu	gag Glu	ggc Gly 605	cga Arg	atc Ile	cag Gln	1824
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ggc Gly	tca Ser	gcg Ala	gcc Ala	ctg Leu 645	cag Gln	ctg Leu	cct Pro	gtg Val	gtc Val 650	ctc Leu	aat Asn	aat Asn	gtc Val	aag Lys 655	aac Asn	1968
aag Lys	tat Tyr	agt Ser	gat Asp 660	gtg Val	cat His	agc Ser	ctg Leu	tgc Cys 665	tac Tyr	ctc Leu	tat Tyr	ggg Gly	gag Glu 670	aaa Lys	gcc Ala	2016
aag Lys	gct Ala	gct Ala 675	ctg Leu	ggc Gly	ctg Leu	gag Glu	aag Lys 680	cag Gln	atc Ile	cag Gln	gag Glu	gca Ala 685	gat Asp	ggg Gly	atc Ile	2064
atc Ile	caa Gln 690	ggc Gly	ttt Phe	gaa Glu	gct Ala	acc Thr 695	ctg Leu	gca Ala	cag Gln	gag Glu	ggc Gly 700	ccc Pro	atc Ile	cct Pro	gaa Glu	2112
ggc Gly 705	tct Ser	ggg Gly	gca Ala	ctg Leu	cag Gln 710	gag Glu	agg Arg	gtc Val	agc Ser	gag Glu 715	ctg Leu	cag Gln	cgc Arg	cag Gln	cgg Arg 720	2160
aaa Lys	gag Glu	ctc Leu	ctc Leu	cag Gln 725	cag Gln	cag Gln	gcc Ala	tgc Cys	gtg Val 730	ttg Leu	ggg Gly	ctg Leu	cac His	cgg Arg 735	cag Gln	2208
ctg Leu	aag Lys	gcc Ala	gcg Ala 740	gag Glu	cac His	gcg Ala	tgc Cys	ggt Gly 745	gcg Ala	ctg Leu	cag Gln	aac Asn	aat Asn 750	ttc Phe	caa Gln	2256
gag Glu	ttc Phe	tgc Cys 755	cag Gln	gac Asp	ctg Leu	ccg Pro	cgc Arg 760	cag Gln	cag Gln	cgc Arg	caa Gln	gtg Val 765	cga Arg	gcc Ala	ctc Leu	2304



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ata cta cag gat gcc agc ctc acc cac cag cag ctc aag aac agc agg Ile Leu Gln Asp Ala Ser Leu Thr His Gln Gln Leu Lys Asn Ser Arg 785 790 795 800	2400
gac aac ctg agc tcc tgg ctg gag cag ctg ccc cac cac cgt gtg cag Asp Asn Leu Ser Ser Trp Leu Glu Gln Leu Pro His His Arg Val Gln 805 810 815	2448
ccc agc gac ggg cca agc cag atc gcc tac aag ctg caa gca cag aag Pro Ser Asp Gly Pro Ser Gln Ile Ala Tyr Lys Leu Gln Ala Gln Lys 820 825 830	2496
agg ctg ata cag gaa atc ctg ggt cgt gag cag gac cag gcc aca gtg Arg Leu Ile Gln Glu Ile Leu Gly Arg Glu Gln Asp Gln Ala Thr Val 835 840 845	2544
gcc cgc ctc acc cgg gac ctg cag gag gct ctc cag gag tat gag ctg Ala Arg Leu Thr Arg Asp Leu Gln Glu Ala Leu Gln Glu Tyr Glu Leu 850 855 860	2592
cga gca gac acc tac cgc tgc tcc ctg gag ccc acc ttg gcg gtg tcc Arg Ala Asp Thr Tyr Arg Cys Ser Leu Glu Pro Thr Leu Ala Val Ser 865 870 875 880	2640
gcc cct aag aga ctc aga gtg att tcc tta aag gag aac atc cag gct Ala Pro Lys Arg Leu Arg Val Ile Ser Leu Lys Glu Asn Ile Gln Ala 885 890 895	2688
cag gag aag aac ctt act aaa gct tac act gag gtc gcc gca gcg gaa Gln Glu Lys Asn Leu Thr Lys Ala Tyr Thr Glu Val Ala Ala Ala Glu 900 905 910	2736
cag cag cag ctg cac cag ctg gag ttt gct aag aag atg ctg gag aag Gln Gln Gln Leu His Gln Leu Glu Phe Ala Lys Lys Met Leu Glu Lys 915 920 925	2784
aag gag ctc aat gag gac ttc caa gcc atc cac agt gca aga caa gga Lys Glu Leu Asn Glu Asp Phe Gln Ala Ile His Ser Ala Arg Gln Gly 930 935 940	2832
tct ggc agt cca gca cat aca aag aca gag tca gag gtc ctg aag acc Ser Gly Ser Pro Ala His Thr Lys Thr Glu Ser Glu Val Leu Lys Thr 945 950 955 960	2880
cag ctc gag gaa gag agg aaa cgc gtg gct gag gtg cag cgt gaa ctg Gln Leu Glu Glu Glu Arg Lys Arg Val Ala Glu Val Gln Arg Glu Leu 965 970 975	2928
gag gag cgg agg cag cag ctg ctg cag ctg agg acc cag cag cct gtg Glu Glu Arg Arg Gln Gln Leu Leu Gln Leu Arg Thr Gln Gln Pro Val 980 985 990	2976
gct cgg ctg gag gag aag gaa gtg gta gag ttc tac cgg gac ccc cag Ala Arg Leu Glu Glu Lys Glu Val Val Glu Phe Tyr Arg Asp Pro Gln 995 1000 1005	3024
cta aag agt aac gtg ctt cag gca tcg tcc cgg ctg gag gaa gaa Leu Lys Ser Asn Val Leu Gln Ala Ser Ser Arg Leu Glu Glu Glu 1010 1015 1020	3069
ggc aag agg cga gcc cgc cta caa gcc gag ctg gag gtg gtg gcc Gly Lys Arg Arg Ala Arg Leu Gln Ala Glu Leu Glu Val Val Ala 1025 1030 1035	3114
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His	Leu	Leu	Thr	Lys	Glu	Val	Thr	Gln	Ile	Glu	Arg	Asp	Pro	Gly	
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Leu	Asp	Ser	Gln	Val	Thr	Gln	Leu	His	Asn	Glu	Met	Gln	Gly	Leu	
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Arg	Gly	Glu	Asn	Ala	Val	Leu	Ala	Ala	Arg	Leu	Glu	Gly	Leu	Lys	
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Asp	Glu	Leu	Leu	Thr	Leu	Glu	Gln	Lys	Glu	Ile	Asn	Val	Lys	Glu	
1100						1105					1110				
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Lys	Val	Val	Val	Lys	Glu	Val	Val	Lys	Val	Glu	Lys	Asp	Leu	Glu	
1115						1120					1125				
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Met	Val	Lys	Ala	Ala	Gln	Thr	Leu	Arg	Leu	Gln	Ile	Glu	Glu	Asp	
1130						1135					1140				
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Ala	Ala	Arg	Arg	Lys	Gly	Ala	Lys	Glu	Ala	Val	Ala	Lys	Thr	Gln	
1145						1150					1155				
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Ala	Arg	Ile	Lys	Asp	Leu	Glu	Gln	Ala	Ile	Ser	Ser	Val	Glu	Pro	
1160						1165					1170				
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Lys	Val	Ile	Val	Lys	Glu	Val	Lys	Lys	Val	Glu	Gln	Asp	Pro	Gly	
1175						1180					1185				
ctt	ctc	aag	gaa	gcc	tcc	agg	ctg	aga	agc	ctc	ctg	gag	gag	gag	3609
Leu	Leu	Lys	Glu	Ala	Ser	Arg	Leu	Arg	Ser	Leu	Leu	Glu	Glu	Glu	
1190						1195					1200				
aag	aac	aag	aac	gtc	atg	ttg	gcc	agg	gaa	ctg	cag	gaa	ctg	cag	3654
Lys	Asn	Lys	Asn	Val	Met	Leu	Ala	Arg	Glu	Leu	Gln	Glu	Leu	Gln	
1205						1210					1215				
gac	aag	tac	agg	gcg	gta	gag	aag	cag	aag	cct	aag	gtg	cag	ctg	3699
Asp	Lys	Tyr	Arg	Ala	Val	Glu	Lys	Gln	Lys	Pro	Lys	Val	Gln	Leu	
1220						1225					1230				
cag	gag	cgc	gtc	agc	gag	atc	ttc	cag	gtg	cac	ccg	gag	aca	gag	3744
Gln	Glu	Arg	Val	Ser	Glu	Ile	Phe	Gln	Val	His	Pro	Glu	Thr	Glu	
1235						1240					1245				
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Gln	Glu	Ile	Leu	Arg	Leu	Arg	Ala	Gln	Leu	Gln	Glu	Thr	Gly	Ser	
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Lys	Lys	Ser	Cys	Val	Glu	Arg	Glu	Val	Glu	Lys	Leu	Leu	Pro	Glu	
1265						1270					1275				
ctg	gag	gtc	ctg	cgg	gct	cag	aag	ccc	gtg	gtg	gaa	tat	aag	gag	3879
Leu	Glu	Val	Leu	Arg	Ala	Gln	Lys	Pro	Val	Val	Glu	Tyr	Lys	Glu	
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gtg	acg	cag	gag	gtg	gtg	agg	cac	gag	aag	aac	cca	gag	gtg	ctc	3924
Val	Thr	Gln	Glu	Val	Val	Arg	His	Glu	Lys	Asn	Pro	Glu	Val	Leu	

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Arg	Glu	Ile	Asp	Arg	Leu	Lys	Ala	Gln	Leu	Asn	Glu	Leu	Val	Asn		
	1310					1315					1320					
acc	cac	ggg	cgc	tgt	caa	gag	cag	ctc	atc	cgg	ctc	cag	ggc	gaa		4014
Thr	His	Gly	Arg	Cys	Gln	Glu	Gln	Leu	Ile	Arg	Leu	Gln	Gly	Glu		
	1325					1330					1335					
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Arg	Asp	Glu	Trp	Lys	Arg	Glu	Arg	Ser	Lys	Val	Glu	Thr	Lys	Met		
	1340					1345					1350					
gtg	aac	aaa	gag	gtg	gtg	agg	cat	gag	aag	gat	cca	gtg	ctg	gag		4104
Val	Asn	Lys	Glu	Val	Val	Arg	His	Glu	Lys	Asp	Pro	Val	Leu	Glu		
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aaa	gag	gcc	gag	agg	ctc	cgg	cag	gag	gtg	cgg	gag	gcc	gtc	cag		4149
Lys	Glu	Ala	Glu	Arg	Leu	Arg	Gln	Glu	Val	Arg	Glu	Ala	Val	Gln		
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aag	agg	cga	gcc	gcc	gag	gat	gct	gtc	tac	gag	ctg	cag	aac	aag		4194
Lys	Arg	Arg	Ala	Ala	Glu	Asp	Ala	Val	Tyr	Glu	Leu	Gln	Asn	Lys		
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Tyr	Leu	Leu	Leu	Glu	Arg	Arg	Arg	Pro	Glu	Glu	Gln	Ile	Val	Val		
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Gln	Glu	Val	Val	Val	Thr	Gln	Lys	Asp	Pro	Lys	Leu	His	Glu	Glu		
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His	Ser	Arg	Leu	Ser	Arg	Ser	Leu	Asp	Glu	Glu	Val	Gly	Arg	Arg		
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Arg	Gln	Leu	Glu	Leu	Glu	Val	Arg	Gln	Leu	Ser	Ala	Ser	Val	Glu		
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Glu	Glu	Glu	Ala	Met	Leu	Ser	Phe	Glu	Glu	Asp	Arg	Ser	Lys	Lys		
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ctg	gct	gcg	gag	agg	gag	ctg	cgg	caa	ctg	acc	ctg	aag	atc	cag		4464
Leu	Ala	Ala	Glu	Arg	Glu	Leu	Arg	Gln	Leu	Thr	Leu	Lys	Ile	Gln		
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Glu	Leu	Glu	Lys	Arg	Pro	Pro	Ala	Leu	Gln	Glu	Lys	Ile	Ile	Met		
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Glu	Glu	Val	Val	Lys	Leu	Glu	Lys	Asp	Pro	Asp	Leu	Glu	Arg	Ser		
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aca	gaa	gct	ctg	agg	cga	gag	ctg	gat	cag	gag	aag	aac	cgg	gtg		4599
Thr	Glu	Ala	Leu	Arg	Arg	Glu	Leu	Asp	Gln	Glu	Lys	Asn	Arg	Val		
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Ile	Glu	Leu	His	Arg	Glu	Cys	Lys	Gly	Leu	Gln	Val	Glu	Val	Asp		
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Leu	Leu	Gln	Lys	Thr	Lys	Ser	Gln	Glu	Lys	Thr	Ile	Tyr	Lys	Glu		
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gag Glu	gct Ala 1610	ctg Leu	agg Arg	agg Arg	tcc Ser	tgg Trp 1615	tca Ser	ctc Leu	cag Gln	aag Lys	gcc Ala 1620	cgg Arg	gac Asp	cag Gln	4869
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cgg Arg	ctg Leu 1655	ctt Leu	agc Ser	cag Gln	aag Lys	acg Thr 1660	gag Glu	agc Ser	gag Glu	cgc Arg	cag Gln 1665	aag Lys	gcc Ala	gct Ala	5004
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tgg Trp	gaa Glu 1760	gaa Glu	gtt Val	acc Thr	acc Thr	tcc Ser 1765	agt Ser	ccc Pro	tgt Cys	ggg Gly	gag Glu 1770	gag Glu	tct Ser	gtg Val	5319
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 <213> Rattus norvegicus

<400> 100

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 35 40 45

Asn Ala Asp Gln Val Glu Arg Asp Ile Leu Glu Thr Gln Lys Lys Leu  
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Gln Gln Val Asn Lys Asn Ile Gly Glu Leu Val Val Ser Leu Cys Ala  
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Leu Thr Thr Trp Val Met Pro His Gln Asp Arg Gln Asn Gly Ala Gln  
 85 90 95

Asn Gln Ala Leu Gln His Gln Gln Glu Thr Gly Arg Asn Leu Lys Glu  
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Ala Glu Val Leu Leu Lys Asp Leu Phe Leu Asp Val Asp Lys Ala Arg  
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 Ser Ile Asn Gln Leu Glu Asp Asp Ala Glu Arg Met Val Glu Leu Gly  
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 His Pro Ala Ile Gly Pro Ile Gln Ala His Gln Glu Ala Leu Lys Met  
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 Glu Trp Gln Asn Phe Leu Asn Leu Cys Ile Cys Gln Glu Ser Gln Leu  
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 Gln His Val Glu Asp Tyr Arg Arg Phe Gln Glu Glu Ala Asp Ser Ala  
 355 360 365  
 Ser Gln Thr Leu Ala Lys Leu Ser Ser Asn Leu Asp Thr Lys Tyr Ser  
 370 375 380  
 Phe Gly Ala Gly Asp Ser Ser Val Ser Pro Thr Glu Leu Leu Leu Gln  
 385 390 395 400  
 Leu Glu Ala Glu Glu Lys Gln Leu Ala Ile Ala Glu Arg Thr Ile Gly  
 405 410 415  
 Glu Leu Gln Arg Arg Ser Gln Glu Val Ala Pro Leu Pro Gln Arg Arg  
 420 425 430  
 Asn Pro Pro Lys Gln Pro Leu His Val Asp Ser Ile Cys Asp Trp Asp  
 435 440 445  
 Ser Gly Glu Val Gln Leu Leu Arg Gly Glu Arg Tyr Thr Leu Lys Asp  
 450 455 460  
 Asn Ala Asp Pro Tyr Thr Trp Val Val Gln Gly Pro Gly Gly Glu Thr  
 465 470 475 480  
 Lys Ser Ala Pro Ala Ala Cys Leu Cys Ile Pro Ala Pro Asp Pro Glu  
 485 490 495  
 Ala Val Ala Lys Ala Ser Arg Leu Ala Ser Glu Leu Gln Thr Leu Lys  
 500 505 510  
 Gln Lys Leu Ser Thr Glu Lys Ser Arg Leu Lys Asn Ala Ser Ala Glu  
 515 520 525

His Leu Gln Gln Gly Gln Gln Gly Thr Arg Gly Cys Pro Gly Arg Ala  
 530 535 540  
 Leu Val Gly Gly Pro Cys Arg Val Glu Ala Pro Ala Gly Ser Ala Pro  
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 Ala Asp Pro Gln Ala Gln Lys Leu Leu Ser Gln Met Thr Gln Leu Asp  
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 Gly Asp Leu Gly Gln Val Glu Arg Gln Val Leu Ser Trp Ala Arg Ser  
 580 585 590  
 Pro Leu Asn Asp Ser Ser Pro Leu Lys Asp Leu Glu Gly Arg Ile Gln  
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 Ser Cys Glu Gly Thr Ala Gln His Leu Gln Asn Leu Gly Ala Glu Lys  
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 645 650 655  
 Lys Tyr Ser Asp Val His Ser Leu Cys Tyr Leu Tyr Gly Glu Lys Ala  
 660 665 670  
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 675 680 685  
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 Leu Lys Ala Ala Glu His Ala Cys Gly Ala Leu Gln Asn Asn Phe Gln  
 740 745 750  
 Glu Phe Cys Gln Asp Leu Pro Arg Gln Gln Arg Gln Val Arg Ala Leu  
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 Thr Asp Arg Tyr His Ser Val Gly Asp Gln Leu Asp Leu Arg Glu Lys  
 770 775 780  
 Ile Leu Gln Asp Ala Ser Leu Thr His Gln Gln Leu Lys Asn Ser Arg  
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Asp Asn Leu Ser Ser Trp Leu Glu Gln Leu Pro His His Arg Val Gln  
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 Pro Ser Asp Gly Pro Ser Gln Ile Ala Tyr Lys Leu Gln Ala Gln Lys  
 820 825 830  
  
 Arg Leu Ile Gln Glu Ile Leu Gly Arg Glu Gln Asp Gln Ala Thr Val  
 835 840 845  
  
 Ala Arg Leu Thr Arg Asp Leu Gln Glu Ala Leu Gln Glu Tyr Glu Leu  
 850 855 860  
  
 Arg Ala Asp Thr Tyr Arg Cys Ser Leu Glu Pro Thr Leu Ala Val Ser  
 865 870 875 880  
  
 Ala Pro Lys Arg Leu Arg Val Ile Ser Leu Lys Glu Asn Ile Gln Ala  
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 Gln Glu Lys Asn Leu Thr Lys Ala Tyr Thr Glu Val Ala Ala Ala Glu  
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 Gln Gln Gln Leu His Gln Leu Glu Phe Ala Lys Lys Met Leu Glu Lys  
 915 920 925  
  
 Lys Glu Leu Asn Glu Asp Phe Gln Ala Ile His Ser Ala Arg Gln Gly  
 930 935 940  
  
 Ser Gly Ser Pro Ala His Thr Lys Thr Glu Ser Glu Val Leu Lys Thr  
 945 950 955 960  
  
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 965 970 975  
  
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 980 985 990  
  
 Ala Arg Leu Glu Glu Lys Glu Val Val Glu Phe Tyr Arg Asp Pro Gln  
 995 1000 1005  
  
 Leu Lys Ser Asn Val Leu Gln Ala Ser Ser Arg Leu Glu Glu Glu  
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 Gly Lys Arg Arg Ala Arg Leu Gln Ala Glu Leu Glu Val Val Ala  
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 Gln Lys Val Val His Leu Glu Gly Lys Arg Lys Ala Met Gln Pro  
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1070

1075

1080

Arg Gly Glu Asn Ala Val Leu Ala Ala Arg Leu Glu Gly Leu Lys  
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Asp Glu Leu Leu Thr Leu Glu Gln Lys Glu Ile Asn Val Lys Glu  
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Lys Val Val Val Lys Glu Val Val Lys Val Glu Lys Asp Leu Glu  
1115 1120 1125

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Ala Arg Ile Lys Asp Leu Glu Gln Ala Ile Ser Ser Val Glu Pro  
1160 1165 1170

Lys Val Ile Val Lys Glu Val Lys Lys Val Glu Gln Asp Pro Gly  
1175 1180 1185

Leu Leu Lys Glu Ala Ser Arg Leu Arg Ser Leu Leu Glu Glu Glu  
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Asp Lys Tyr Arg Ala Val Glu Lys Gln Lys Pro Lys Val Gln Leu  
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Gln Glu Arg Val Ser Glu Ile Phe Gln Val His Pro Glu Thr Glu  
1235 1240 1245

Gln Glu Ile Leu Arg Leu Arg Ala Gln Leu Gln Glu Thr Gly Ser  
1250 1255 1260

Lys Lys Ser Cys Val Glu Arg Glu Val Glu Lys Leu Leu Pro Glu  
1265 1270 1275

Leu Glu Val Leu Arg Ala Gln Lys Pro Val Val Glu Tyr Lys Glu  
1280 1285 1290

Val Thr Gln Glu Val Val Arg His Glu Lys Asn Pro Glu Val Leu  
1295 1300 1305

Arg Glu Ile Asp Arg Leu Lys Ala Gln Leu Asn Glu Leu Val Asn  
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Thr His Gly Arg Cys Gln Glu Gln Leu Ile Arg Leu Gln Gly Glu  
1325 1330 1335

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Val	Asn	Lys	Glu	Val	Val	Arg	His	Glu	Lys	Asp	Pro	Val	Leu	Glu
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Lys	Glu	Ala	Glu	Arg	Leu	Arg	Gln	Glu	Val	Arg	Glu	Ala	Val	Gln
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Lys	Arg	Arg	Ala	Ala	Glu	Asp	Ala	Val	Tyr	Glu	Leu	Gln	Asn	Lys
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Tyr	Leu	Leu	Leu	Glu	Arg	Arg	Arg	Pro	Glu	Glu	Gln	Ile	Val	Val
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Gln	Glu	Val	Val	Val	Thr	Gln	Lys	Asp	Pro	Lys	Leu	His	Glu	Glu
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His	Ser	Arg	Leu	Ser	Arg	Ser	Leu	Asp	Glu	Glu	Val	Gly	Arg	Arg
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Arg	Gln	Leu	Glu	Leu	Glu	Val	Arg	Gln	Leu	Ser	Ala	Ser	Val	Glu
	1445					1450					1455			
Glu	Glu	Glu	Ala	Met	Leu	Ser	Phe	Glu	Glu	Asp	Arg	Ser	Lys	Lys
	1460					1465					1470			
Leu	Ala	Ala	Glu	Arg	Glu	Leu	Arg	Gln	Leu	Thr	Leu	Lys	Ile	Gln
	1475					1480					1485			
Glu	Leu	Glu	Lys	Arg	Pro	Pro	Ala	Leu	Gln	Glu	Lys	Ile	Ile	Met
	1490					1495					1500			
Glu	Glu	Val	Val	Lys	Leu	Glu	Lys	Asp	Pro	Asp	Leu	Glu	Arg	Ser
	1505					1510					1515			
Thr	Glu	Ala	Leu	Arg	Arg	Glu	Leu	Asp	Gln	Glu	Lys	Asn	Arg	Val
	1520					1525					1530			
Ile	Glu	Leu	His	Arg	Glu	Cys	Lys	Gly	Leu	Gln	Val	Glu	Val	Asp
	1535					1540					1545			
Leu	Leu	Gln	Lys	Thr	Lys	Ser	Gln	Glu	Lys	Thr	Ile	Tyr	Lys	Glu
	1550					1555					1560			
Val	Ile	Arg	Val	Glu	Lys	Asp	Pro	Val	Leu	Glu	Ser	Glu	Arg	Ala
	1565					1570					1575			
Arg	Val	Trp	Glu	Thr	Leu	Asn	Arg	Glu	Arg	Ala	Ala	Arg	Gln	Ser
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PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

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Glu	Ala	Leu	Arg	Arg	Ser	Trp	Ser	Leu	Gln	Lys	Ala	Arg	Asp	Gln
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Ala	Ser	Gln	Asp	Cys	Gly	Arg	Leu	Gln	Arg	Glu	Leu	Arg	Glu	Leu
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Glu	Gln	Gln	Lys	Leu	Gln	Lys	Ala	Gln	Gln	Leu	Gln	Glu	Glu	Gly
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Arg	Leu	Leu	Ser	Gln	Lys	Thr	Glu	Ser	Glu	Arg	Gln	Lys	Ala	Ala
	1655					1660					1665			
Gln	Arg	Ser	Gln	Ala	Leu	Ser	Gln	Leu	Glu	Ala	Ala	Ile	Leu	His
	1670					1675					1680			
Glu	Lys	Asp	Lys	Ile	Tyr	Glu	Lys	Glu	Arg	Thr	Leu	Arg	Asp	Leu
	1685					1690					1695			
His	Thr	Lys	Val	Ser	Arg	Glu	Glu	Leu	Asn	Gln	Glu	Thr	Gln	Thr
	1700					1705					1710			
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	1715					1720					1725			
Thr	Gly	Asn	Asp	Met	Ser	Pro	Tyr	Glu	Ala	Tyr	Lys	Arg	Gly	Ile
	1730					1735					1740			
Ile	Asp	Arg	Gly	Gln	Tyr	Leu	Gln	Leu	Gln	Glu	Leu	Glu	Cys	Asp
	1745					1750					1755			
Trp	Glu	Glu	Val	Thr	Thr	Ser	Ser	Pro	Cys	Gly	Glu	Glu	Ser	Val
	1760					1765					1770			
Leu	Leu	Asp	Arg	Lys	Ser	Gly	Lys	Gln	Tyr	Ser	Ile	Glu	Ala	Ala
	1775					1780					1785			
Leu	Arg	Cys	Arg	Arg	Ile	Ser	Lys	Glu	Glu	Tyr	His	Arg	Tyr	Lys
	1790					1795					1800			
Asp	Gly	Arg	Leu	Pro	Ile	Ser	Glu	Phe	Ala	Leu	Leu	Val	Ala	Gly
	1805					1810					1815			
Glu	Thr	Lys	Pro	Ser	Ser	Ser	Leu	Ser	Ile	Gly	Ser	Ile	Ile	Ser
	1820					1825					1830			
Lys	Ser	Pro	Val	Cys	Ser	Pro	Gly	Pro	Gln	Ser	Thr	Gly	Phe	Phe
	1835					1840					1845			

Ser Pro Gly Leu Ser Leu Gly Leu Thr Glu Asp Ser Phe Pro Ile  
1850 1855 1860

Ala Gly Val Tyr Asp Thr Thr Thr Asp Asn Lys Cys Ser Ile Lys  
1865 1870 1875

Ala Ala Val Ala Lys Asn Met Leu Asp Pro Ile Thr Gly Gln Lys  
1880 1885 1890

Leu Leu Glu Ala Gln Ala Ala Thr Gly Gly Ile Val Asp Leu Leu  
1895 1900 1905

Ser Arg Glu Arg Tyr Ser Val His Lys Ala Val Glu Gln Gly Leu  
1910 1915 1920

Ile Glu Asn Thr Ser Thr Gln Arg Leu Leu Asn Ala Gln Lys Ala  
1925 1930 1935

Phe Thr Gly Ile Glu Asp Pro Val Thr Arg Lys Arg Leu Ser Val  
1940 1945 1950

Gly Glu Ala Ile Gln Lys Gly Trp Met Pro Gln Glu Ser Val Leu  
1955 1960 1965

Pro His Leu Leu Val Gln His Leu Thr Gly Gly Leu Ile Asp Pro  
1970 1975 1980

Lys Arg Thr Gly Arg Ile Pro Val Pro Gln Ala Val Leu Cys Gly  
1985 1990 1995

Met Ile Ser Glu Asp Leu Gly Gln Leu Leu Gln Asp Glu Ser Ser  
2000 2005 2010

Tyr Glu Lys Asp Leu Thr Asp Pro Ile Thr Lys Glu Arg Leu Ser  
2015 2020 2025

Tyr Lys Glu Ala Met Gly Arg Cys His Lys Asp Pro Leu Ser Gly  
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ggc tcc ccc gcc aaa ggg gtc ccc caa agg ctc ccc cag caa gca cag      96
Gly Ser Pro Ala Lys Gly Val Pro Gln Arg Leu Pro Gln Gln Ala Gln
20 25 30

ccg gac cgg ctg aac agt gag cag agc cag gcc ctg cag cac cag cag      144
Pro Asp Arg Leu Asn Ser Glu Gln Ser Gln Ala Leu Gln His Gln Gln
35 40 45

gag acg ggc cgc agc ctg aag gag gcc gag gtg ctg ctc aag gac ctt      192
Glu Thr Gly Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp Leu
50 55 60

ttc ctg gac gtg gac aag gcc cgg cgg ctc aag cac ccg cag gct gag      240
Phe Leu Asp Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala Glu
65 70 75 80

gag att gag aag gac atc aag cag ctg cac gag cgg gtg acc cag gag      288
Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln Glu
85 90 95

tgt gcg gag tac cgt gcc ctg tac gag aag atg gtg ctg ccc ccc gac      336
Cys Ala Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro Asp
100 105 110

gtg gga ccc agg gtc gac tgg gca cgc gtg ctg gag cag aaa cag gcc      384
Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln Ala
115 120 125

cac cag gag gcc ctg aag atg gag tgg cag aac ttc ctg aac ctg tgt      432
His Gln Glu Ala Leu Lys Met Glu Trp Gln Asn Phe Leu Asn Leu Cys
130 135 140

atc tgc cag gag acc cag ctg cag cac gtg gag gac tac cgc cgg ttc      480
Ile Cys Gln Glu Thr Gln Leu Gln His Val Glu Asp Tyr Arg Arg Phe
145 150 155 160

cag gaa gag gcc gac tca gtc agc cag acc ctg gcg aag ctc aac tcc      528
Gln Glu Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu Asn Ser
165 170 175

aac ttg gat gcc aag tac agc cct gca cct ggg ggc ccc cct ggc gcc      576
Asn Leu Asp Ala Lys Tyr Ser Pro Ala Pro Gly Gly Pro Pro Gly Ala
180 185 190

ccc aca gag ctg ctg caa cag ctg gag gca gag gaa aaa cgg ctg gcc      624
Pro Thr Glu Leu Leu Gln Gln Leu Glu Ala Glu Glu Lys Arg Leu Ala
195 200 205

atc acc gag agg gcc act ggg gac ctg cag cgg cga agc cag gat gtg      672
Ile Thr Glu Arg Ala Thr Gly Asp Leu Gln Arg Arg Ser Gln Asp Val
210 215 220

ccc cct ctg cca cag cga aga aac cca cct cag cag ccc ctg cac gtg      720
Pro Pro Leu Pro Gln Arg Arg Asn Pro Pro Gln Gln Pro Leu His Val
225 230 235 240

gac agc atc tgc gac tgg gac tca gga gaa gtg cag ctg ctg cgg ggt      768
Asp Ser Ile Cys Asp Trp Asp Ser Gly Glu Val Gln Leu Leu Arg Gly
245 250 255

gag cgg tat aag ctg gta gat aac act gac ccg cac acc tgg gtc gtg      816
Glu Arg Tyr Lys Leu Val Asp Asn Thr Asp Pro His Thr Trp Val Val
260 265 270

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atc Ile	cca Pro 290	gca Ala	cca Pro	gac Asp	cct Pro	gat Asp 295	gct Ala	gtg Val	gcc Ala	agg Arg	gcc Ala 300	tcc Ser	cgg Arg	aag Lys	gtt Val	912
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gtt Val	ctg Leu 370	tgc Cys	agc Ser	ctc Leu	tac Tyr	ggg Gly 375	gag Glu	aaa Lys	gcc Ala	aag Lys	gct Ala 380	gcc Ala	ctg Leu	ggt Gly	ctg Leu	1152
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acc Thr	ctg Leu	gtg Val	cag Gln	gag Glu 405	gcc Ala	ccc Pro	atc Ile	cct Pro	gct Ala 410	gaa Glu	ccg Pro	ggg Gly	gct Ala	ctg Leu 415	cag Gln	1248
gag Glu	agg Arg	gtc Val	agc Ser 420	gag Glu	ctg Leu	cag Gln	cgc Arg	cag Gln 425	cgg Arg	agg Arg	gag Glu	ctg Leu	ctg Leu 430	gaa Glu	cag Gln	1296
cag Gln	acc Thr	tgc Cys 435	gtg Val	ctg Leu	cgg Arg	cta Leu	cac His 440	cgc Arg	gcg Ala	ctg Leu	aag Lys	gcc Ala 445	tgc Ser	gag Glu	cac His	1344
gca Ala	tgc Cys 450	gct Ala	gcg Ala	ctg Leu	cag Gln	aac Asn 455	aac Asn	ttc Phe	cag Gln	gag Glu	ttc Phe 460	tgc Cys	caa Gln	gac Asp	ctg Leu	1392
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Pro

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Glu Thr Gly Arg Ser Leu Lys Glu Ala Glu Val Leu Leu Lys Asp Leu  
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Phe Leu Asp Val Asp Lys Ala Arg Arg Leu Lys His Pro Gln Ala Glu  
65 70 75 80

Glu Ile Glu Lys Asp Ile Lys Gln Leu His Glu Arg Val Thr Gln Glu  
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Cys Ala Glu Tyr Arg Ala Leu Tyr Glu Lys Met Val Leu Pro Pro Asp  
100 105 110

Val Gly Pro Arg Val Asp Trp Ala Arg Val Leu Glu Gln Lys Gln Ala  
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His Gln Glu Ala Leu Lys Met Glu Trp Gln Asn Phe Leu Asn Leu Cys  
130 135 140

Ile Cys Gln Glu Thr Gln Leu Gln His Val Glu Asp Tyr Arg Arg Phe  
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Gln Glu Glu Ala Asp Ser Val Ser Gln Thr Leu Ala Lys Leu Asn Ser  
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Asn Leu Asp Ala Lys Tyr Ser Pro Ala Pro Gly Gly Pro Pro Gly Ala  
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Pro Thr Glu Leu Leu Gln Gln Leu Glu Ala Glu Glu Lys Arg Leu Ala  
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Ile Thr Glu Arg Ala Thr Gly Asp Leu Gln Arg Arg Ser Gln Asp Val  
Seite 596



210

215

220

Pro Pro Leu Pro Gln Arg Arg Asn Pro Pro Gln Gln Pro Leu His Val  
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420 425 430

Gln Thr Cys Val Leu Arg Leu His Arg Ala Leu Lys Ala Ser Glu His  
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Ala Cys Ala Ala Leu Gln Asn Asn Phe Gln Glu Phe Cys Gln Asp Leu  
450 455 460

Pro Arg Gln Gln Arg Gln Val Arg Ala Leu Thr Asp Arg Tyr His Ala  
465 470 475 480

Val Gly Asp Gln Leu Asp Leu Arg Glu Lys Val Val Gln Asp Ala Ala  
485 490 495

Leu Thr Tyr Gln Gln Phe Lys Asn Cys Lys Asp Asn Leu Ser Ser Trp  
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Leu Glu His Leu Pro Arg Ser His Val Arg Pro Ser Asp Gly Pro Ser  
515 520 525

Gln Ile Ala Tyr Lys Leu Gln Ala Gln Lys Thr Gly Pro Ala His Leu  
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Pro

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Met Val Pro Ser Val Cys  
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Ile Glu Gln Gln Tyr Gln Asn Val Leu Thr Leu Trp His Glu Ser His  
25 30 35  
ata aac atg aag agt gta gta tcc tgg cat tat ctc atc aat gaa att 319  
Ile Asn Met Lys Ser Val Val Ser Trp His Tyr Leu Ile Asn Glu Ile  
40 45 50  
gat aga att cga gct agc aat gtg gct tca ata aag aca atg cta cct 367  
Asp Arg Ile Arg Ala Ser Asn Val Ala Ser Ile Lys Thr Met Leu Pro  
55 60 65 70  
ggt gaa cat cag caa gtt cta agt aat cta caa tct cgt ttt gaa gat 415  
Gly Glu His Gln Gln Val Leu Ser Asn Leu Gln Ser Arg Phe Glu Asp  
75 80 85  
ttt ctg gaa gat agc cag gaa tcc caa gtc ttt tca ggc tca gat ata 463  
Phe Leu Glu Asp Ser Gln Glu Ser Gln Val Phe Ser Gly Ser Asp Ile  
90 95 100  
aca caa ctg gaa aag gag gtt aat gta tgt aag cag tat tat caa gaa 511  
Thr Gln Leu Glu Lys Glu Val Asn Val Cys Lys Gln Tyr Tyr Gln Glu  
105 110 115

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ctt Leu 120	ctt Leu 120	aaa Lys	tct Ser	gca Ala	gaa Glu	aga Arg 125	gag Glu	gag Glu	caa Gln	gag Glu 130	gaa Glu 130	tca Ser	ggt Val	tat Tyr	aat Asn	559
ctc Leu 135	tac Tyr	atc Ile	tct Ser	gaa Glu	gtt Val 140	cga Arg	aac Asn	att Ile	aga Arg	ctt Leu 145	cgg Arg	tta Leu	gag Glu	aac Asn	tgt Cys 150	607
gaa Glu	gat Asp	cgg Arg	ctg Leu	att Ile 155	aga Arg	cag Gln	att Ile	cga Arg	act Thr 160	ccc Pro	ctg Leu	gaa Glu	aga Arg	gat Asp 165	gat Asp	655
ttg Leu	cat His	gaa Glu	agt Ser 170	gtg Val	ttc Phe	aga Arg	atc Ile	aca Thr 175	gaa Glu	cag Gln	gag Glu	aaa Lys	cta Leu 180	aag Lys	aaa Lys	703
gag Glu	ctg Leu	gaa Glu 185	cga Arg	ctt Leu	aaa Lys	gat Asp	gat Asp 190	ttg Leu	gga Gly	aca Thr	atc Ile	aca Thr 195	aat Asn	aag Lys	tgt Cys	751
gag Glu	gag Glu 200	ttt Phe	ttc Phe	agt Ser	caa Gln	gca Ala 205	gca Ala	gcc Ala	tct Ser	tca Ser	tca Ser 210	gtc Val	cct Pro	acc Thr	cta Leu	799
cga Arg 215	tca Ser	gag Glu	ctt Leu	aat Asn	gtg Val 220	gtc Val	ctt Leu	cag Gln	aac Asn	atg Met 225	aac Asn	caa Gln	gtc Val	tat Tyr	tct Ser 230	847
atg Met	tct Ser	tcc Ser	act Thr	tac Tyr 235	ata Ile	gat Asp	aag Lys	ttg Leu	aaa Lys 240	act Thr	gtt Val	aac Asn	ttg Leu	gtg Val 245	tta Leu	895
aaa Lys	aac Asn	act Thr	caa Gln 250	gct Ala	gca Ala	gaa Glu	gcc Ala	ctc Leu 255	gta Val	aaa Lys	ctc Leu	tat Tyr	gaa Glu 260	act Thr	aaa Lys	943
ctg Leu	tgt Cys	gaa Glu 265	gaa Glu	gaa Glu	gca Ala	gtt Val	ata Ile 270	gct Ala	gac Asp	aag Lys	aat Asn	aat Asn 275	att Ile	gag Glu	aat Asn	991
cta Leu 280	ata Ile	agt Ser	act Thr	tta Leu	aag Lys	caa Gln 285	tgg Trp	aga Arg	tct Ser	gaa Glu	gta Val 290	gat Asp	gaa Glu	aag Lys	aga Arg	1039
cag Gln 295	gta Val	ttc Phe	cat His	gcc Ala	tta Leu 300	gag Glu	gat Asp	gag Glu	ttg Leu	cag Gln 305	aaa Lys	gct Ala	aaa Lys	gcc Ala	atc Ile 310	1087
agt Ser	gat Asp	gaa Glu	atg Met	ttt Phe 315	aaa Lys	acg Thr	tat Tyr	aaa Lys	gaa Glu 320	cgg Arg	gac Asp	ctt Leu	gat Asp	ttt Phe 325	gac Asp	1135
tgg Trp	cac His	aaa Lys	gaa Glu 330	aaa Lys	gca Ala	gat Asp	caa Gln	tta Leu 335	gtt Val	gaa Glu	agg Arg	tgg Trp	caa Gln 340	aat Asn	gtt Val	1183
cat His	gtg Val	cag Gln 345	att Ile	gac Asp	aac Asn	agg Arg	tta Leu 350	cgg Arg	gac Asp	tta Leu	gag Glu	ggc Gly 355	att Ile	ggc Gly	aaa Lys	1231
tca Ser 360	ctg Leu	aag Lys	tac Tyr	tac Tyr	aga Arg	gac Asp 365	act Thr	tac Tyr	cat His	cct Pro	tta Leu 370	gat Asp	gat Asp	tgg Trp	atc Ile	1279
cag Gln 375	cag Gln	gtt Val	gaa Glu	act Thr	act Thr 380	cag Gln	aga Arg	aag Lys	att Ile	cag Gln 385	gaa Glu	aat Asn	cag Gln	cct Pro	gaa Glu 390	1327
aat	agt	aaa	acc	cta	gcc	aca	cag	ttg	aat	caa	cag	aag	atg	ctg	gtg	1375

Asn	Ser	Lys	Thr	Leu	Ala	Thr	Gln	Leu	Asn	Gln	Gln	Lys	Met	Leu	Val	
395									400					405		
tcc	gaa	ata	gaa	atg	aaa	cag	agc	aaa	atg	gac	gag	tgt	caa	aaa	tat	1423
Ser	Glu	Ile	Glu	Met	Lys	Gln	Ser	Lys	Met	Asp	Glu	Cys	Gln	Lys	Tyr	
			410					415					420			
gca	gaa	cag	tac	tca	gct	aca	gtg	aag	gac	tat	gaa	tta	caa	aca	atg	1471
Ala	Glu	Gln	Tyr	Ser	Ala	Thr	Val	Lys	Asp	Tyr	Glu	Leu	Gln	Thr	Met	
			425				430					435				
acc	tac	cgg	gcc	atg	gta	gat	tca	caa	caa	aaa	tct	cca	gtg	aaa	cgc	1519
Thr	Tyr	Arg	Ala	Met	Val	Asp	Ser	Gln	Gln	Lys	Ser	Pro	Val	Lys	Arg	
	440					445					450					
cga	aga	atg	cag	agt	tca	gca	gat	ctc	att	att	caa	gag	ttc	atg	gac	1567
Arg	Arg	Met	Gln	Ser	Ser	Ala	Asp	Leu	Ile	Ile	Gln	Glu	Phe	Met	Asp	
					460				465						470	
cta	agg	act	cga	tat	act	gcc	ctg	gtc	act	ctc	atg	aca	caa	tat	att	1615
Leu	Arg	Thr	Arg	Tyr	Thr	Ala	Leu	Val	Thr	Leu	Met	Thr	Gln	Tyr	Ile	
				475					480					485		
aaa	ttt	gct	ggt	gat	tca	ttg	aag	agg	ctg	gaa	gag	gag	gag	att	aaa	1663
Lys	Phe	Ala	Gly	Asp	Ser	Leu	Lys	Arg	Leu	Glu	Glu	Glu	Glu	Ile	Lys	
			490					495					500			
agg	tgt	aag	gag	act	tct	gaa	cat	ggg	gca	tat	tca	gat	ctg	ctt	cag	1711
Arg	Cys	Lys	Glu	Thr	Ser	Glu	His	Gly	Ala	Tyr	Ser	Asp	Leu	Leu	Gln	
		505					510					515				
cgt	cag	aag	gca	aca	gtg	ctt	gag	aat	agc	aaa	ctt	aca	gga	aag	ata	1759
Arg	Gln	Lys	Ala	Thr	Val	Leu	Glu	Asn	Ser	Lys	Leu	Thr	Gly	Lys	Ile	
	520					525					530					
agt	gag	ttg	gaa	aga	atg	gta	gct	gaa	cta	aag	aaa	caa	aag	tcc	cga	1807
Ser	Glu	Leu	Glu	Arg	Met	Val	Ala	Glu	Leu	Lys	Lys	Gln	Lys	Ser	Arg	
					540					545					550	
gta	gag	gaa	gaa	ctt	ccg	aag	gtc	agg	gag	gct	gca	gaa	aat	gaa	ttg	1855
Val	Glu	Glu	Glu	Leu	Pro	Lys	Val	Arg	Glu	Ala	Ala	Glu	Asn	Glu	Leu	
				555					560					565		
aga	aag	cag	cag	aga	aat	gta	gaa	gat	atc	tct	ctg	cag	aag	ata	agg	1903
Arg	Lys	Gln	Gln	Arg	Asn	Val	Glu	Asp	Ile	Ser	Leu	Gln	Lys	Ile	Arg	
			570					575					580			
gct	gaa	agt	gaa	gcc	aag	cag	tac	cgc	agg	gaa	ctt	gaa	acc	att	gtg	1951
Ala	Glu	Ser	Glu	Ala	Lys	Gln	Tyr	Arg	Arg	Glu	Leu	Glu	Thr	Ile	Val	
		585					590					595				
aga	gag	aag	gaa	gcc	gct	gaa	aga	gaa	ctg	gag	cgg	gtg	agg	cag	ctc	1999
Arg	Glu	Lys	Glu	Ala	Ala	Glu	Arg	Glu	Leu	Glu	Arg	Val	Arg	Gln	Leu	
	600					605					610					
acc	ata	gag	gcc	gag	gct	aaa	aga	gct	gcc	gtg	gaa	gag	aac	ctc	ctg	2047
Thr	Ile	Glu	Ala	Glu	Ala	Lys	Arg	Ala	Ala	Val	Glu	Glu	Asn	Leu	Leu	
					620					625					630	
aat	ttt	cgc	aat	cag	ttg	gag	gaa	aac	acc	ttt	acc	aga	cga	aca	ctg	2095
Asn	Phe	Arg	Asn	Gln	Leu	Glu	Glu	Asn	Thr	Phe	Thr	Arg	Arg	Thr	Leu	
				635					640					645		
gaa	gat	cat	ctt	aaa	aga	aaa	gat	tta	agt	ctc	aat	gat	ttg	gag	caa	2143
Glu	Asp	His	Leu	Lys	Arg	Lys	Asp	Leu	Ser	Leu	Asn	Asp	Leu	Glu	Gln	
			650				655						660			
caa	aaa	aat	aaa	tta	atg	gaa	gaa	tta	aga	aga	aag	aga	gac	aat	gag	2191
Gln	Lys	Asn	Lys	Leu	Met	Glu	Glu	Leu	Arg	Arg	Lys	Arg	Asp	Asn	Glu	

665			670			675										
gaa Glu	gaa Glu 680	ctc Leu	tgt Leu	aag Lys	ctg Leu	ata Ile 685	aag Lys	cag Gln	atg Met	gaa Glu	aaa Lys 690	gac Asp	ctt Leu	gca Ala	ttt Phe	2239
cag Gln 695	aaa Lys	cag Gln	gta Val	gca Ala	gag Glu 700	aaa Lys	cag Gln	tgt Leu	aaa Lys	gaa Glu 705	aag Lys	cag Gln	aaa Lys	att Ile	gaa Glu 710	2287
tgt Leu	gaa Glu	gca Ala	aga Arg	aga Arg 715	aaa Lys	ata Ile	act Thr	gaa Glu	att Ile 720	cag Gln	tat Tyr	aca Thr	tgt Cys	aga Arg 725	gaa Glu	2335
aat Asn	gca Ala	tgt Leu	cca Pro 730	gtg Val	tgt Cys	ccg Pro	atc Ile	aca Thr 735	cag Gln	gct Ala	aca Thr	tca Ser	tgc Cys 740	agg Arg	gca Ala	2383
gta Val	acg Thr	ggt Gly 745	ctc Leu	cag Gln	caa Gln	gaa Glu	cat His 750	gac Asp	aag Lys	cag Gln	aaa Lys	gca Ala 755	gaa Glu	gaa Glu	ctc Leu	2431
aaa Lys	cag Gln 760	cag Gln	gta Val	gat Asp	gaa Glu	cta Leu 765	aca Thr	gct Ala	gcc Ala	aat Asn	aga Arg 770	aag Lys	gct Ala	gaa Glu	caa Gln	2479
gac Asp 775	atg Met	aga Arg	gag Glu	ctg Leu	aca Thr 780	tat Tyr	gaa Glu	ctt Leu	aat Asn	gcc Ala 785	ctc Leu	cag Gln	ctt Leu	gaa Glu	aaa Lys 790	2527
acg Thr	tca Ser	tct Ser	gag Glu	gaa Glu 795	aag Lys	gct Ala	cgt Arg	tgt Leu	cta Leu 800	aaa Lys	gat Asp	aaa Lys	cta Leu	gat Asp 805	gaa Glu	2575
aca Thr	aat Asn	aat Asn	aca Thr 810	ctc Leu	aga Arg	tgc Cys	ctt Leu	aag Lys 815	tgt Leu	gag Glu	ctg Leu	gaa Glu	agg Arg 820	aag Lys	gat Asp	2623
cag Gln	gcg Ala	gag Glu 825	aaa Lys	ggg Gly	tat Tyr	tct Ser	caa Gln 830	caa Gln	ctc Leu	aga Arg	gag Glu	ctt Leu 835	ggt Gly	agg Arg	caa Gln	2671
tgt Leu	aat Asn 840	caa Gln	acc Thr	aca Thr	ggt Gly	aaa Lys 845	gct Ala	gaa Glu	gaa Glu	gcc Ala	atg Met 850	caa Gln	gaa Glu	gct Ala	agt Ser	2719
gat Asp 855	ctc Leu	aag Lys	aaa Lys	ata Ile	aag Lys 860	cgc Arg	aat Asn	tat Tyr	cag Gln	tta Leu 865	gaa Glu	tta Leu	gaa Glu	tct Ser	ctt Leu 870	2767
aat Asn	cat His	gaa Glu	aaa Lys	ggg Gly 875	aaa Lys	cta Leu	caa Gln	aga Arg	gaa Glu 880	gta Val	gac Asp	aga Arg	atc Ile	aca Thr 885	agg Arg	2815
gca Ala	cat His	gct Ala	gta Val 890	gct Ala	gag Glu	aag Lys	aat Asn	att Ile 895	cag Gln	cat His	tta Leu	aat Asn	tca Ser 900	caa Gln	att Ile	2863
cat His	tct Ser	ttt Phe 905	cga Arg	gat Asp	gag Glu	aaa Lys	gaa Glu 910	tta Leu	gaa Glu	aga Arg	cta Leu	caa Gln 915	atc Ile	tgc Cys	cag Gln	2911
aga Arg	aaa Lys 920	tca Ser	gat Asp	cat His	cta Leu	aaa Lys 925	gaa Glu	caa Gln	ttt Phe	gag Glu	aaa Lys 930	agc Ser	cat His	gag Glu	cag Gln	2959
tgt Leu 935	ctt Leu	caa Gln	aat Asn	atc Ile	aaa Lys 940	gct Ala	gaa Glu	aaa Lys	gaa Glu	aat Asn 945	aat Asn	gat Asp	aaa Lys	atc Ile	caa Gln 950	3007

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agg ctc aat gaa gaa ttg gag aaa agt aat gag tgt gca gag atg cta	3055
Arg Leu Asn Glu Glu Leu Glu Lys Ser Asn Glu Cys Ala Glu Met Leu	
955 960 965	
aaa caa aaa gta gag gag ctt act agg cag aat aat gaa acc aaa tta	3103
Lys Gln Lys Val Glu Glu Leu Thr Arg Gln Asn Asn Glu Thr Lys Leu	
970 975 980	
atg atg cag aga att cag gca gaa tca gag aat ata gtt tta gag aaa	3151
Met Met Gln Arg Ile Gln Ala Glu Ser Glu Asn Ile Val Leu Glu Lys	
985 990 995	
caa act atc cag caa aga tgt gaa gca ctg aaa att cag gca gat	3196
Gln Thr Ile Gln Gln Arg Cys Glu Ala Leu Lys Ile Gln Ala Asp	
1000 1005 1010	
ggt ttt aaa gat cag cta cgc agc aca aat gaa cac ttg cat aaa	3241
Gly Phe Lys Asp Gln Leu Arg Ser Thr Asn Glu His Leu His Lys	
1015 1020 1025	
cag aca aaa aca gag cag gat ttt caa aga aaa att aaa tgc cta	3286
Gln Thr Lys Thr Glu Gln Asp Phe Gln Arg Lys Ile Lys Cys Leu	
1030 1035 1040	
gaa gaa gac ctg gcg aaa agt caa aat ttg gta agt gaa ttt aag	3331
Glu Glu Asp Leu Ala Lys Ser Gln Asn Leu Val Ser Glu Phe Lys	
1045 1050 1055	
caa aag tgt gac caa cag aac att atc atc cag aat acc aag aaa	3376
Gln Lys Cys Asp Gln Gln Asn Ile Ile Ile Gln Asn Thr Lys Lys	
1060 1065 1070	
gaa gtt aga aat ctg aat gcg gaa ctg aat gct tcc aaa gaa gag	3421
Glu Val Arg Asn Leu Asn Ala Glu Leu Asn Ala Ser Lys Glu Glu	
1075 1080 1085	
aag cga cgc ggg gag cag aaa gtt cag cta caa caa gct cag gtg	3466
Lys Arg Arg Gly Glu Gln Lys Val Gln Leu Gln Gln Ala Gln Val	
1090 1095 1100	
caa gag tta aat aac agg ttg aaa aaa gta caa gac gaa tta cac	3511
Gln Glu Leu Asn Asn Arg Leu Lys Lys Val Gln Asp Glu Leu His	
1105 1110 1115	
tta aag acc ata gag gag cag atg acc cac aga aag atg gtt ctg	3556
Leu Lys Thr Ile Glu Glu Gln Met Thr His Arg Lys Met Val Leu	
1120 1125 1130	
ttt cag gaa gaa tct ggt aaa ttc aaa caa tca gca gag gag ttt	3601
Phe Gln Glu Glu Ser Gly Lys Phe Lys Gln Ser Ala Glu Glu Phe	
1135 1140 1145	
cgg aag aag atg gaa aaa tta atg gag tcc aaa gtc atc act gaa	3646
Arg Lys Lys Met Glu Lys Leu Met Glu Ser Lys Val Ile Thr Glu	
1150 1155 1160	
aat gat att tca ggc att agg ctt gac ttt gtg tct ctt caa caa	3691
Asn Asp Ile Ser Gly Ile Arg Leu Asp Phe Val Ser Leu Gln Gln	
1165 1170 1175	
gaa aac tct aga gcc caa gaa aat gct aag ctt tgt gaa aca aac	3736
Glu Asn Ser Arg Ala Gln Glu Asn Ala Lys Leu Cys Glu Thr Asn	
1180 1185 1190	
att aaa gaa ctt gaa aga cag ctt caa cag tat cgt gaa caa atg	3781
Ile Lys Glu Leu Glu Arg Gln Leu Gln Gln Tyr Arg Glu Gln Met	
1195 1200 1205	

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cag Gln	caa Gln 1210	ggg Gly	cag Gln	cac His	atg Met	gaa Glu 1215	gca Ala	aat Asn	cat His	tac Tyr	caa Gln 1220	aaa Lys	tgt Cys	cag Gln	3826
aaa Lys	ctt Leu 1225	gag Glu	gat Asp	gag Glu	ctg Leu	ata Ile 1230	gcc Ala	cag Gln	aag Lys	cgt Arg	gag Glu 1235	gtt Val	gaa Glu	aac Asn	3871
ctg Leu	aag Lys 1240	caa Gln	aaa Lys	atg Met	gac Asp	caa Gln 1245	cag Gln	atc Ile	aaa Lys	gag Glu	cat His 1250	gaa Glu	cat His	caa Gln	3916
tta Leu	gtt Val 1255	ttg Leu	ctc Leu	cag Gln	tgt Cys	gaa Glu 1260	att Ile	caa Gln	aaa Lys	aag Lys	agc Ser 1265	aca Thr	gcc Ala	aaa Lys	3961
gac Asp	tgt Cys 1270	acc Thr	ttc Phe	aaa Lys	cca Pro	gat Asp 1275	ttt Phe	gag Glu	atg Met	aca Thr	gtg Val 1280	aag Lys	gag Glu	tgc Cys	4006
cag Gln	cac His 1285	tct Ser	gga Gly	gag Glu	ctg Leu	tcc Ser 1290	tct Ser	aga Arg	aac Asn	act Thr	gga Gly 1295	cac His	ctt Leu	cac His	4051
cca Pro	aca Thr 1300	ccc Pro	aga Arg	tcc Ser	cct Pro	ctg Leu 1305	ttg Leu	aga Arg	tgg Trp	act Thr	caa Gln 1310	gaa Glu	cca Pro	cag Gln	4096
cca Pro	ttg Leu 1315	gaa Glu	gag Glu	aag Lys	tgg Trp	cag Gln 1320	cat His	cgg Arg	gtt Val	gtt Val	gaa Glu 1325	cag Gln	ata Ile	ccc Pro	4141
aaa Lys	gaa Glu 1330	gtc Val	caa Gln	ttc Phe	cag Gln	cca Pro 1335	cca Pro	ggg Gly	gct Ala	cca Pro	ctc Leu 1340	gag Glu	aaa Lys	gag Glu	4186
aaa Lys	agc Ser 1345	cag Gln	cag Gln	tgt Cys	tac Tyr	tct Ser 1350	gag Glu	tac Tyr	ttt Phe	tct Ser	cag Gln 1355	aca Thr	agc Ser	acc Thr	4231
gag Glu	tta Leu 1360	cag Gln	ata Ile	act Thr	ttt Phe	gat Asp 1365	gag Glu	aca Thr	aac Asn	ccc Pro	att Ile 1370	aca Thr	aga Arg	ctg Leu	4276
tct Ser	gaa Glu 1375	att Ile	gag Glu	aag Lys	ata Ile	aga Arg 1380	gac Asp	caa Gln	gcc Ala	ctg Leu	aac Asn 1385	aat Asn	tct Ser	aga Arg	4321
cca Pro	cct Pro 1390	gtt Val	agg Arg	tat Tyr	caa Gln	gat Asp 1395	aac Asn	gca Ala	tgt Cys	gaa Glu	atg Met 1400	gaa Glu	ctg Leu	gtg Val	4366
aag Lys	gtt Val 1405	ttg Leu	aca Thr	ccc Pro	tta Leu	gag Glu 1410	ata Ile	gct Ala	aag Lys	aac Asn	aag Lys 1415	cag Gln	tat Tyr	gat Asp	4411
atg Met	cat His 1420	aca Thr	gaa Glu	gtc Val	aca Thr	aca Thr 1425	tta Leu	aaa Lys	caa Gln	gaa Glu	aag Lys 1430	aac Asn	cca Pro	gtt Val	4456
ccc Pro	agt Ser 1435	gct Ala	gaa Glu	gaa Glu	tgg Trp	atg Met 1440	ctt Leu	gaa Glu	ggg Gly	tgc Cys	aga Arg 1445	gca Ala	tct Ser	ggg Gly	4501
gga Gly	ctc Leu 1450	aag Lys	aaa Lys	ggg Gly	gat Asp	ttc Phe 1455	ctt Leu	aag Lys	aag Lys	ggc Gly	tta Leu 1460	gaa Glu	cca Pro	gag Glu	4546
acc	ttc	cag	aac	ttt	gat	ggg	gat	cat	gca	tgt	tca	gtc	agg	gat	4591

Thr	Phe	Gln	Asn	Phe	Asp	Gly	Asp	His	Ala	Cys	Ser	Val	Arg	Asp	
	1465					1470					1475				
gat	gaa	ttt	aaa	ttc	caa	ggg	ctt	agg	cac	act	gtg	act	gcc	agg	4636
Asp	Glu	Phe	Lys	Phe	Gln	Gly	Leu	Arg	His	Thr	Val	Thr	Ala	Arg	
	1480					1485					1490				
cag	ttg	gtg	gaa	gct	aag	ctt	ctg	gac	atg	aga	aca	att	gag	cag	4681
Gln	Leu	Val	Glu	Ala	Lys	Leu	Leu	Asp	Met	Arg	Thr	Ile	Glu	Gln	
	1495					1500					1505				
ctg	cga	ctc	ggt	ctt	aag	act	gtt	gaa	gaa	gtt	cag	aaa	act	ctt	4726
Leu	Arg	Leu	Gly	Leu	Lys	Thr	Val	Glu	Glu	Val	Gln	Lys	Thr	Leu	
	1510					1515					1520				
aac	aag	ttt	ctg	acg	aaa	gcc	acc	tca	att	gca	ggg	ctt	tac	cta	4771
Asn	Lys	Phe	Leu	Thr	Lys	Ala	Thr	Ser	Ile	Ala	Gly	Leu	Tyr	Leu	
	1525					1530					1535				
gaa	tct	aca	aaa	gaa	aag	att	tca	ttt	gcc	tca	gcg	gcc	gag	aga	4816
Glu	Ser	Thr	Lys	Glu	Lys	Ile	Ser	Phe	Ala	Ser	Ala	Ala	Glu	Arg	
	1540					1545					1550				
atc	ata	ata	gac	aaa	atg	gtg	gct	ttg	gca	ttt	tta	gaa	gct	cag	4861
Ile	Ile	Ile	Asp	Lys	Met	Val	Ala	Leu	Ala	Phe	Leu	Glu	Ala	Gln	
	1555					1560					1565				
gct	gca	aca	ggt	ttt	ata	att	gat	ccc	att	tca	ggt	cag	aca	tat	4906
Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro	Ile	Ser	Gly	Gln	Thr	Tyr	
	1570					1575					1580				
tct	gtt	gaa	gat	gca	gtt	ctt	aaa	gga	gtt	gtt	gac	ccc	gaa	ttc	4951
Ser	Val	Glu	Asp	Ala	Val	Leu	Lys	Gly	Val	Val	Asp	Pro	Glu	Phe	
	1585					1590					1595				
aga	att	agg	ctt	ctt	gag	gca	gag	aag	gca	gct	gtg	gga	tat	tct	4996
Arg	Ile	Arg	Leu	Leu	Glu	Ala	Glu	Lys	Ala	Ala	Val	Gly	Tyr	Ser	
	1600					1605					1610				
tat	tct	tct	aag	aca	ttg	tca	gtg	ttt	caa	gct	atg	gaa	aat	aga	5041
Tyr	Ser	Ser	Lys	Thr	Leu	Ser	Val	Phe	Gln	Ala	Met	Glu	Asn	Arg	
	1615					1620					1625				
atg	ctt	gac	aga	caa	aaa	ggt	aaa	cat	atc	ttg	gaa	gcc	cag	att	5086
Met	Leu	Asp	Arg	Gln	Lys	Gly	Lys	His	Ile	Leu	Glu	Ala	Gln	Ile	
	1630					1635					1640				
gcc	agt	ggg	ggt	gtc	att	gac	cct	gtg	aga	ggc	att	cgt	gtt	cct	5131
Ala	Ser	Gly	Gly	Val	Ile	Asp	Pro	Val	Arg	Gly	Ile	Arg	Val	Pro	
	1645					1650					1655				
cca	gaa	att	gct	ctg	cag	cag	ggg	ttg	ttg	aat	aat	gcc	atc	tta	5176
Pro	Glu	Ile	Ala	Leu	Gln	Gln	Gly	Leu	Leu	Asn	Asn	Ala	Ile	Leu	
	1660					1665					1670				
cag	ttt	tta	cat	gag	cca	tcc	agc	aac	aca	aga	gtt	ttc	cct	aat	5221
Gln	Phe	Leu	His	Glu	Pro	Ser	Ser	Asn	Thr	Arg	Val	Phe	Pro	Asn	
	1675					1680					1685				
ccc	aat	aac	aag	caa	gct	ctg	tat	tac	tca	gaa	tta	ctg	cga	atg	5266
Pro	Asn	Asn	Lys	Gln	Ala	Leu	Tyr	Tyr	Ser	Glu	Leu	Leu	Arg	Met	
	1690					1695					1700				
tgt	gta	ttt	gat	gta	gag	tcc	caa	tgc	ttt	ctg	ttt	cca	ttt	ggg	5311
Cys	Val	Phe	Asp	Val	Glu	Ser	Gln	Cys	Phe	Leu	Phe	Pro	Phe	Gly	
	1705					1710					1715				
gag	agg	aac	att	tcc	aat	ctc	aat	gtc	aag	aaa	aca	cat	aga	att	5356
Glu	Arg	Asn	Ile	Ser	Asn	Leu	Asn	Val	Lys	Lys	Thr	His	Arg	Ile	



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1720						1725						1730					
tct	gta	gta	gat	act	aaa	aca	gga	tca	gaa	ttg	acc	gtg	tat	gag			5401
Ser	Val	Val	Asp	Thr	Lys	Thr	Gly	Ser	Glu	Leu	Thr	Val	Tyr	Glu			
	1735					1740					1745						
gct	ttc	cag	aga	aac	ctg	att	gag	aaa	agt	ata	tat	ctt	gaa	ctt			5446
Ala	Phe	Gln	Arg	Asn	Leu	Ile	Glu	Lys	Ser	Ile	Tyr	Leu	Glu	Leu			
	1750					1755					1760						
tca	ggg	cag	caa	tat	cag	tgg	aag	gaa	gct	atg	ttt	ttt	gaa	tcc			5491
Ser	Gly	Gln	Gln	Tyr	Gln	Trp	Lys	Glu	Ala	Met	Phe	Phe	Glu	Ser			
	1765					1770					1775						
tat	ggg	cat	tct	tct	cat	atg	ctg	act	gat	act	aaa	aca	gga	tta			5536
Tyr	Gly	His	Ser	Ser	His	Met	Leu	Thr	Asp	Thr	Lys	Thr	Gly	Leu			
	1780					1785					1790						
cac	ttc	aat	att	aat	gag	gct	ata	gag	cag	gga	aca	att	gac	aaa			5581
His	Phe	Asn	Ile	Asn	Glu	Ala	Ile	Glu	Gln	Gly	Thr	Ile	Asp	Lys			
	1795					1800					1805						
gcc	ttg	gtc	aaa	aag	tat	cag	gaa	ggc	ctc	atc	aca	ctt	aca	gaa			5626
Ala	Leu	Val	Lys	Lys	Tyr	Gln	Glu	Gly	Leu	Ile	Thr	Leu	Thr	Glu			
	1810					1815					1820						
ctt	gct	gat	tct	ttg	ctg	agc	cgg	tta	gtc	ccc	aag	aaa	gat	ttg			5671
Leu	Ala	Asp	Ser	Leu	Leu	Ser	Arg	Leu	Val	Pro	Lys	Lys	Asp	Leu			
	1825					1830					1835						
cac	agt	cct	gtt	gca	ggg	tat	tgg	ctg	act	gct	agt	ggg	gaa	agg			5716
His	Ser	Pro	Val	Ala	Gly	Tyr	Trp	Leu	Thr	Ala	Ser	Gly	Glu	Arg			
	1840					1845					1850						
atc	tct	gta	cta	aaa	gcc	tcc	cgt	aga	aat	ttg	gtt	gat	cgg	att			5761
Ile	Ser	Val	Leu	Lys	Ala	Ser	Arg	Arg	Asn	Leu	Val	Asp	Arg	Ile			
	1855					1860					1865						
act	gcc	ctc	cga	tgc	ctt	gaa	gcc	caa	gtc	agt	aca	ggg	ggc	ata			5806
Thr	Ala	Leu	Arg	Cys	Leu	Glu	Ala	Gln	Val	Ser	Thr	Gly	Gly	Ile			
	1870					1875					1880						
att	gat	cct	ctt	act	ggc	aaa	aag	tac	cgg	gtg	gcc	gaa	gct	ttg			5851
Ile	Asp	Pro	Leu	Thr	Gly	Lys	Lys	Tyr	Arg	Val	Ala	Glu	Ala	Leu			
	1885					1890					1895						
cat	aga	ggc	ctg	gtt	gat	gag	ggg	ttt	gcc	cag	cag	ctg	cga	cag			5896
His	Arg	Gly	Leu	Val	Asp	Glu	Gly	Phe	Ala	Gln	Gln	Leu	Arg	Gln			
	1900					1905					1910						
tgt	gaa	tta	gta	atc	aca	ggg	att	ggc	cat	ccc	atc	act	aac	aaa			5941
Cys	Glu	Leu	Val	Ile	Thr	Gly	Ile	Gly	His	Pro	Ile	Thr	Asn	Lys			
	1915					1920					1925						
atg	atg	tca	gtg	gtg	gaa	gct	gtg	aat	gca	aat	att	ata	aat	aag			5986
Met	Met	Ser	Val	Val	Glu	Ala	Val	Asn	Ala	Asn	Ile	Ile	Asn	Lys			
	1930					1935					1940						
gaa	atg	gga	atc	cga	tgt	ttg	gaa	ttt	cag	tac	ttg	aca	gga	ggg			6031
Glu	Met	Gly	Ile	Arg	Cys	Leu	Glu	Phe	Gln	Tyr	Leu	Thr	Gly	Gly			
	1945					1950					1955						
ttg	ata	gag	cca	cag	gtt	cac	tct	cgg	tta	tca	ata	gaa	gag	gct			6076
Leu	Ile	Glu	Pro	Gln	Val	His	Ser	Arg	Leu	Ser	Ile	Glu	Glu	Ala			
	1960					1965					1970						
ctc	caa	gta	ggg	att	ata	gat	gtc	ctc	att	gcc	aca	aaa	ctc	aaa			6121
Leu	Gln	Val	Gly	Ile	Ile	Asp	Val	Leu	Ile	Ala	Thr	Lys	Leu	Lys			
	1975					1980					1985						

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Asp Gln Lys Ser Tyr Val Arg Asn Ile Ile Cys Pro Gln Thr Lys	
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aga aag ttg aca tat aaa gaa gcc tta gaa aaa gct gat ttt gat	6211
Arg Lys Leu Thr Tyr Lys Glu Ala Leu Glu Lys Ala Asp Phe Asp	
2005 2010 2015	
ttc cac aca gga ctt aaa ctg tta gaa gta tct gag ccc ctg atg	6256
Phe His Thr Gly Leu Lys Leu Leu Glu Val Ser Glu Pro Leu Met	
2020 2025 2030	
aca gga att tct agc ctc tac tat tct tcc taatgggaca tgtttaaata	6306
Thr Gly Ile Ser Ser Leu Tyr Tyr Ser Ser	
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ctacatatgc agtctgtgaa ttatgtaaca tactctatatt cttgaggggct gcaaattgct	6426
aagtgtctcaa aatagagtaa gttttaaatt gaaaattaca taagatttaa tgcccttcaa	6486
atggtttcat ttagccttga gaatggtttt ttgaaacttg gccacactaa aatgtttttt	6546
tttttttacg tagaatgtgg gataaacttg atgaactcca agttcacagt gtcattttctt	6606
cagaactccc cttcattgaa tagtgatcat ttattaaatg ataaattgca ctcgctgaaa	6666
gagcacgtca tgaagcacca tggaatcaaa gagaaagata taaattcggtt cccacagcct	6726
tcaagctgca gtgtttttaga ttgcttcaaa aaatgaaaaa gttttgcctt tttcgatata	6786
gtgaccttct ttgcatatta aaatgtttac cacaatgtcc catttctagt taagtcttcg	6846
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ctgtgtattt tccgg	6921

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Leu Trp His Glu Ser His Ile Asn Met Lys Ser Val Val Ser Trp His
35 40 45

Tyr Leu Ile Asn Glu Ile Asp Arg Ile Arg Ala Ser Asn Val Ala Ser
50 55 60

Ile Lys Thr Met Leu Pro Gly Glu His Gln Gln Val Leu Ser Asn Leu
65 70 75 80

Gln Ser Arg Phe Glu Asp Phe Leu Glu Asp Ser Gln Glu Ser Gln Val
85 90 95

Phe Ser Gly Ser Asp Ile Thr Gln Leu Glu Lys Glu Val Asn Val Cys  
                   100                  105                  110  
 Lys Gln Tyr Tyr Gln Glu Leu Leu Lys Ser Ala Glu Arg Glu Glu Gln  
                   115                  120                  125  
 Glu Glu Ser Val Tyr Asn Leu Tyr Ile Ser Glu Val Arg Asn Ile Arg  
           130                  135                  140  
 Leu Arg Leu Glu Asn Cys Glu Asp Arg Leu Ile Arg Gln Ile Arg Thr  
           145                  150                  155                  160  
 Pro Leu Glu Arg Asp Asp Leu His Glu Ser Val Phe Arg Ile Thr Glu  
                   165                  170                  175  
 Gln Glu Lys Leu Lys Lys Glu Leu Glu Arg Leu Lys Asp Asp Leu Gly  
                   180                  185                  190  
 Thr Ile Thr Asn Lys Cys Glu Glu Phe Phe Ser Gln Ala Ala Ala Ser  
           195                  200                  205  
 Ser Ser Val Pro Thr Leu Arg Ser Glu Leu Asn Val Val Leu Gln Asn  
           210                  215                  220  
 Met Asn Gln Val Tyr Ser Met Ser Ser Thr Tyr Ile Asp Lys Leu Lys  
           225                  230                  235                  240  
 Thr Val Asn Leu Val Leu Lys Asn Thr Gln Ala Ala Glu Ala Leu Val  
                   245                  250                  255  
 Lys Leu Tyr Glu Thr Lys Leu Cys Glu Glu Glu Ala Val Ile Ala Asp  
                   260                  265                  270  
 Lys Asn Asn Ile Glu Asn Leu Ile Ser Thr Leu Lys Gln Trp Arg Ser  
           275                  280                  285  
 Glu Val Asp Glu Lys Arg Gln Val Phe His Ala Leu Glu Asp Glu Leu  
           290                  295                  300  
 Gln Lys Ala Lys Ala Ile Ser Asp Glu Met Phe Lys Thr Tyr Lys Glu  
           305                  310                  315                  320  
 Arg Asp Leu Asp Phe Asp Trp His Lys Glu Lys Ala Asp Gln Leu Val  
                   325                  330                  335  
 Glu Arg Trp Gln Asn Val His Val Gln Ile Asp Asn Arg Leu Arg Asp  
                   340                  345                  350  
 Leu Glu Gly Ile Gly Lys Ser Leu Lys Tyr Tyr Arg Asp Thr Tyr His  
           355                  360                  365

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Pro Leu Asp Asp Trp Ile Gln Gln Val Glu Thr Thr Gln Arg Lys Ile  
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Gln Glu Asn Gln Pro Glu Asn Ser Lys Thr Leu Ala Thr Gln Leu Asn  
385 390 395 400

Gln Gln Lys Met Leu Val Ser Glu Ile Glu Met Lys Gln Ser Lys Met  
405 410 415

Asp Glu Cys Gln Lys Tyr Ala Glu Gln Tyr Ser Ala Thr Val Lys Asp  
420 425 430

Tyr Glu Leu Gln Thr Met Thr Tyr Arg Ala Met Val Asp Ser Gln Gln  
435 440 445

Lys Ser Pro Val Lys Arg Arg Arg Met Gln Ser Ser Ala Asp Leu Ile  
450 455 460

Ile Gln Glu Phe Met Asp Leu Arg Thr Arg Tyr Thr Ala Leu Val Thr  
465 470 475 480

Leu Met Thr Gln Tyr Ile Lys Phe Ala Gly Asp Ser Leu Lys Arg Leu  
485 490 495

Glu Glu Glu Glu Ile Lys Arg Cys Lys Glu Thr Ser Glu His Gly Ala  
500 505 510

Tyr Ser Asp Leu Leu Gln Arg Gln Lys Ala Thr Val Leu Glu Asn Ser  
515 520 525

Lys Leu Thr Gly Lys Ile Ser Glu Leu Glu Arg Met Val Ala Glu Leu  
530 535 540

Lys Lys Gln Lys Ser Arg Val Glu Glu Glu Leu Pro Lys Val Arg Glu  
545 550 555 560

Ala Ala Glu Asn Glu Leu Arg Lys Gln Gln Arg Asn Val Glu Asp Ile  
565 570 575

Ser Leu Gln Lys Ile Arg Ala Glu Ser Glu Ala Lys Gln Tyr Arg Arg  
580 585 590

Glu Leu Glu Thr Ile Val Arg Glu Lys Glu Ala Ala Glu Arg Glu Leu  
595 600 605

Glu Arg Val Arg Gln Leu Thr Ile Glu Ala Glu Ala Lys Arg Ala Ala  
610 615 620

Val Glu Glu Asn Leu Leu Asn Phe Arg Asn Gln Leu Glu Glu Asn Thr  
625 630 635 640

Phe Thr Arg Arg Thr Leu Glu Asp His Leu Lys Arg Lys Asp Leu Ser  
645 650 655

Leu Asn Asp Leu Glu Gln Gln Lys Asn Lys Leu Met Glu Glu Leu Arg  
660 665 670

Arg Lys Arg Asp Asn Glu Glu Glu Leu Leu Lys Leu Ile Lys Gln Met  
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Glu Lys Asp Leu Ala Phe Gln Lys Gln Val Ala Glu Lys Gln Leu Lys  
690 695 700

Glu Lys Gln Lys Ile Glu Leu Glu Ala Arg Arg Lys Ile Thr Glu Ile  
705 710 715 720

Gln Tyr Thr Cys Arg Glu Asn Ala Leu Pro Val Cys Pro Ile Thr Gln  
725 730 735

Ala Thr Ser Cys Arg Ala Val Thr Gly Leu Gln Gln Glu His Asp Lys  
740 745 750

Gln Lys Ala Glu Glu Leu Lys Gln Gln Val Asp Glu Leu Thr Ala Ala  
755 760 765

Asn Arg Lys Ala Glu Gln Asp Met Arg Glu Leu Thr Tyr Glu Leu Asn  
770 775 780

Ala Leu Gln Leu Glu Lys Thr Ser Ser Glu Glu Lys Ala Arg Leu Leu  
785 790 795 800

Lys Asp Lys Leu Asp Glu Thr Asn Asn Thr Leu Arg Cys Leu Lys Leu  
805 810 815

Glu Leu Glu Arg Lys Asp Gln Ala Glu Lys Gly Tyr Ser Gln Gln Leu  
820 825 830

Arg Glu Leu Gly Arg Gln Leu Asn Gln Thr Thr Gly Lys Ala Glu Glu  
835 840 845

Ala Met Gln Glu Ala Ser Asp Leu Lys Lys Ile Lys Arg Asn Tyr Gln  
850 855 860

Leu Glu Leu Glu Ser Leu Asn His Glu Lys Gly Lys Leu Gln Arg Glu  
865 870 875 880

Val Asp Arg Ile Thr Arg Ala His Ala Val Ala Glu Lys Asn Ile Gln  
885 890 895

His Leu Asn Ser Gln Ile His Ser Phe Arg Asp Glu Lys Glu Leu Glu  
900 905 910

Arg Leu Gln Ile Cys Gln Arg Lys Ser Asp His Leu Lys Glu Gln Phe  
Seite 609

915

920

925

Glu Lys Ser His Glu Gln Leu Leu Gln Asn Ile Lys Ala Glu Lys Glu  
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Asn Asn Asp Lys Ile Gln Arg Leu Asn Glu Glu Leu Glu Lys Ser Asn  
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Glu Cys Ala Glu Met Leu Lys Gln Lys Val Glu Glu Leu Thr Arg Gln  
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Asn Asn Glu Thr Lys Leu Met Met Gln Arg Ile Gln Ala Glu Ser Glu  
 980 985 990

Asn Ile Val Leu Glu Lys Gln Thr Ile Gln Gln Arg Cys Glu Ala Leu  
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Lys Ile Gln Ala Asp Gly Phe Lys Asp Gln Leu Arg Ser Thr Asn  
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Glu His Leu His Lys Gln Thr Lys Thr Glu Gln Asp Phe Gln Arg  
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Lys Ile Lys Cys Leu Glu Glu Asp Leu Ala Lys Ser Gln Asn Leu  
 1040 1045 1050

Val Ser Glu Phe Lys Gln Lys Cys Asp Gln Gln Asn Ile Ile Ile  
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Gln Asn Thr Lys Lys Glu Val Arg Asn Leu Asn Ala Glu Leu Asn  
 1070 1075 1080

Ala Ser Lys Glu Glu Lys Arg Arg Gly Glu Gln Lys Val Gln Leu  
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Gln Gln Ala Gln Val Gln Glu Leu Asn Asn Arg Leu Lys Lys Val  
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Gln Asp Glu Leu His Leu Lys Thr Ile Glu Glu Gln Met Thr His  
 1115 1120 1125

Arg Lys Met Val Leu Phe Gln Glu Glu Ser Gly Lys Phe Lys Gln  
 1130 1135 1140

Ser Ala Glu Glu Phe Arg Lys Lys Met Glu Lys Leu Met Glu Ser  
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Lys Val Ile Thr Glu Asn Asp Ile Ser Gly Ile Arg Leu Asp Phe  
 1160 1165 1170

Val Ser Leu Gln Gln Glu Asn Ser Arg Ala Gln Glu Asn Ala Lys  
 1175 1180 1185

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Leu	Cys 1190	Glu	Thr	Asn	Ile	Lys 1195	Glu	Leu	Glu	Arg	Gln 1200	Leu	Gln	Gln
Tyr	Arg 1205	Glu	Gln	Met	Gln	Gln 1210	Gly	Gln	His	Met	Glu 1215	Ala	Asn	His
Tyr	Gln 1220	Lys	Cys	Gln	Lys	Leu 1225	Glu	Asp	Glu	Leu	Ile 1230	Ala	Gln	Lys
Arg	Glu 1235	Val	Glu	Asn	Leu	Lys 1240	Gln	Lys	Met	Asp	Gln 1245	Gln	Ile	Lys
Glu	His 1250	Glu	His	Gln	Leu	Val 1255	Leu	Leu	Gln	Cys	Glu 1260	Ile	Gln	Lys
Lys	Ser 1265	Thr	Ala	Lys	Asp	Cys 1270	Thr	Phe	Lys	Pro	Asp 1275	Phe	Glu	Met
Thr	Val 1280	Lys	Glu	Cys	Gln	His 1285	Ser	Gly	Glu	Leu	Ser 1290	Ser	Arg	Asn
Thr	Gly 1295	His	Leu	His	Pro	Thr 1300	Pro	Arg	Ser	Pro	Leu 1305	Leu	Arg	Trp
Thr	Gln 1310	Glu	Pro	Gln	Pro	Leu 1315	Glu	Glu	Lys	Trp	Gln 1320	His	Arg	Val
Val	Glu 1325	Gln	Ile	Pro	Lys	Glu 1330	Val	Gln	Phe	Gln	Pro 1335	Pro	Gly	Ala
Pro	Leu 1340	Glu	Lys	Glu	Lys	Ser 1345	Gln	Gln	Cys	Tyr	Ser 1350	Glu	Tyr	Phe
Ser	Gln 1355	Thr	Ser	Thr	Glu	Leu 1360	Gln	Ile	Thr	Phe	Asp 1365	Glu	Thr	Asn
Pro	Ile 1370	Thr	Arg	Leu	Ser	Glu 1375	Ile	Glu	Lys	Ile	Arg 1380	Asp	Gln	Ala
Leu	Asn 1385	Asn	Ser	Arg	Pro	Pro 1390	Val	Arg	Tyr	Gln	Asp 1395	Asn	Ala	Cys
Glu	Met 1400	Glu	Leu	Val	Lys	Val 1405	Leu	Thr	Pro	Leu	Glu 1410	Ile	Ala	Lys
Asn	Lys 1415	Gln	Tyr	Asp	Met	His 1420	Thr	Glu	Val	Thr	Thr 1425	Leu	Lys	Gln
Glu	Lys 1430	Asn	Pro	Val	Pro	Ser 1435	Ala	Glu	Glu	Trp	Met 1440	Leu	Glu	Gly

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 Gly Leu Glu Pro Glu Thr Phe Gln Asn Phe Asp Gly Asp His Ala  
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 Cys Ser Val Arg Asp Asp Glu Phe Lys Phe Gln Gly Leu Arg His  
 1475 1480 1485  
 Thr Val Thr Ala Arg Gln Leu Val Glu Ala Lys Leu Leu Asp Met  
 1490 1500  
 Arg Thr Ile Glu Gln Leu Arg Leu Gly Leu Lys Thr Val Glu Glu  
 1505 1510 1515  
 Val Gln Lys Thr Leu Asn Lys Phe Leu Thr Lys Ala Thr Ser Ile  
 1520 1525 1530  
 Ala Gly Leu Tyr Leu Glu Ser Thr Lys Glu Lys Ile Ser Phe Ala  
 1535 1540 1545  
 Ser Ala Ala Glu Arg Ile Ile Ile Asp Lys Met Val Ala Leu Ala  
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 Phe Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Ile Asp Pro Ile  
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 Ser Gly Gln Thr Tyr Ser Val Glu Asp Ala Val Leu Lys Gly Val  
 1580 1585 1590  
 Val Asp Pro Glu Phe Arg Ile Arg Leu Leu Glu Ala Glu Lys Ala  
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 Ala Val Gly Tyr Ser Tyr Ser Ser Lys Thr Leu Ser Val Phe Gln  
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 Ala Met Glu Asn Arg Met Leu Asp Arg Gln Lys Gly Lys His Ile  
 1625 1630 1635  
 Leu Glu Ala Gln Ile Ala Ser Gly Gly Val Ile Asp Pro Val Arg  
 1640 1645 1650  
 Gly Ile Arg Val Pro Pro Glu Ile Ala Leu Gln Gln Gly Leu Leu  
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 Asn Asn Ala Ile Leu Gln Phe Leu His Glu Pro Ser Ser Asn Thr  
 1670 1675 1680  
 Arg Val Phe Pro Asn Pro Asn Asn Lys Gln Ala Leu Tyr Tyr Ser  
 1685 1690 1695



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 Leu Phe 1715 Pro Phe Gly Glu Arg 1720 Asn Ile Ser Asn Leu 1725 Asn Val Lys  
 Lys Thr 1730 His Arg Ile Ser Val 1735 Val Asp Thr Lys Thr 1740 Gly Ser Glu  
 Leu Thr 1745 Val Tyr Glu Ala Phe 1750 Gln Arg Asn Leu Ile 1755 Glu Lys Ser  
 Ile Tyr 1760 Leu Glu Leu Ser Gly 1765 Gln Gln Tyr Gln Trp 1770 Lys Glu Ala  
 Met Phe 1775 Phe Glu Ser Tyr Gly 1780 His Ser Ser His Met 1785 Leu Thr Asp  
 Thr Lys 1790 Thr Gly Leu His Phe 1795 Asn Ile Asn Glu Ala 1800 Ile Glu Gln  
 Gly Thr 1805 Ile Asp Lys Ala Leu 1810 Val Lys Lys Tyr Gln 1815 Glu Gly Leu  
 Ile Thr 1820 Leu Thr Glu Leu Ala 1825 Asp Ser Leu Leu Ser 1830 Arg Leu Val  
 Pro Lys 1835 Lys Asp Leu His Ser 1840 Pro Val Ala Gly Tyr 1845 Trp Leu Thr  
 Ala Ser 1850 Gly Glu Arg Ile Ser 1855 Val Leu Lys Ala Ser 1860 Arg Arg Asn  
 Leu Val 1865 Asp Arg Ile Thr Ala 1870 Leu Arg Cys Leu Glu 1875 Ala Gln Val  
 Ser Thr 1880 Gly Gly Ile Ile Asp 1885 Pro Leu Thr Gly Lys 1890 Lys Tyr Arg  
 Val Ala 1895 Glu Ala Leu His Arg 1900 Gly Leu Val Asp Glu 1905 Gly Phe Ala  
 Gln Gln 1910 Leu Arg Gln Cys Glu 1915 Leu Val Ile Thr Gly 1920 Ile Gly His  
 Pro Ile 1925 Thr Asn Lys Met Met 1930 Ser Val Val Glu Ala 1935 Val Asn Ala  
 Asn Ile 1940 Ile Asn Lys Glu Met 1945 Gly Ile Arg Cys Leu 1950 Glu Phe Gln  
 Tyr Leu Thr Gly Gly Leu Ile Glu Pro Gln Val His Ser Arg Leu

1955

1960

1965

Ser Ile Glu Glu Ala Leu Gln Val Gly Ile Ile Asp Val Leu Ile  
 1970 1975 1980

Ala Thr Lys Leu Lys Asp Gln Lys Ser Tyr Val Arg Asn Ile Ile  
 1985 1990 1995

Cys Pro Gln Thr Lys Arg Lys Leu Thr Tyr Lys Glu Ala Leu Glu  
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 2015 2020 2025

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 Gln Gln Ile Ala Thr Arg Val Gln Arg Asp Ser Val Ser Cys Glu Asp  
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 Lys Leu Ile Leu Ala Arg Asn Ala Leu Gln Ser Asp Ser Lys Arg Leu  
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 Leu Glu Cys Glu Asn Leu Leu Arg Gln His Val Ile Asp Val Gln Ile  
 85 90 95  
 ctg ata gat ggg aaa tac tac cag gcc gat cag ctg gtg cag agg gtt 336  
 Leu Ile Asp Gly Lys Tyr Tyr Gln Ala Asp Gln Leu Val Gln Arg Val  
 100 105 110  
 gca aag ctg cgt gat gag att atg gcc tta agg aac gaa tgt tct tcg 384  
 Ala Lys Leu Arg Asp Glu Ile Met Ala Leu Arg Asn Glu Cys Ser Ser  
 115 120 125  
 gtg tac agc aaa gga cgc atg ctg acc acg gaa cag acc aag ctc atg 432  
 Val Tyr Ser Lys Gly Arg Met Leu Thr Thr Glu Gln Thr Lys Leu Met  
 130 135 140

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ata Ile 145	tca Ser	gga Gly	atc Ile	act Thr	caa Gln 150	agc Ser	tta Leu	aac Asn	tca Ser	gga Gly 155	ttt Phe	gca Ala	caa Gln	acc Thr	tta Leu 160	480
cac His	ccc Pro	agc Ser	ctg Leu	aac Asn 165	tca Ser	ggg Gly	cta Leu	acc Thr	cag Gln 170	agt Ser	tta Leu	acc Thr	cct Pro	tcc Ser 175	ttg Leu	528
acg Thr	tct Ser	tct Ser	agc Ser 180	gtg Val	act Thr	tct Ser	ggc Gly	ttg Leu 185	tcg Ser	tcc Ser	ggg Gly	atg Met	act Thr 190	tcc Ser	cgc Arg	576
ctg Leu	acg Thr	cca Pro 195	tca Ser	gtt Val	act Thr	ccg Pro	gtg Val 200	tat Tyr	gca Ala	cct Pro	ggg Gly	ttc Phe 205	cct Pro	tca Ser	gtt Val	624
gta Val	gct Ala 210	cca Pro	aac Asn	ttc Phe	agt Ser	tta Leu 215	ggg Gly	gta Val	gag Glu	cca Pro	aat Asn 220	tca Ser	tta Leu	cag Gln	act Thr	672
ctg Leu 225	aag Lys	cta Leu	atg Met	cag Gln	atc Ile 230	cga Arg	aag Lys	ccc Pro	ctt Leu	ctc Leu 235	aag Lys	tcg Ser	tct Ser	ttg Leu	ctg Leu 240	720
gat Asp	cag Gln	aac Asn	ttg Leu	aca Thr 245	gaa Glu	gag Glu	gaa Glu	gtc Val	aat Asn 250	atg Met	aaa Lys	ttt Phe	gtt Val	caa Gln 255	gat Asp	768
ctc Leu	ttg Leu	aac Asn	tgg Trp 260	gtt Val	gat Asp	gag Glu	atg Met	cag Gln 265	gtg Val	cag Gln	ctg Leu	gac Asp	cgc Arg 270	act Thr	gaa Glu	816
tgg Trp	ggc Gly	tca Ser 275	gat Asp	ttg Leu	cca Pro	agt Ser	gtt Val 280	gaa Glu	agc Ser	cat His	tta Leu	gaa Glu 285	aac Asn	cat His	aaa Lys	864
aat Asn	gtt Val 290	cac His	cga Arg	gcc Ala	att Ile	gaa Glu 295	gaa Glu	ttt Phe	gaa Glu	tcc Ser	agc Ser 300	ctt Leu	aag Lys	gaa Glu	gct Ala	912
aaa Lys 305	att Ile	agt Ser	gag Glu	att Ile	cag Gln 310	atg Met	aca Thr	gcg Ala	cct Pro	ctg Leu 315	aaa Lys	ctc Leu	tct Ser	tac Tyr	aca Thr 320	960
gat Asp	aag Lys	ttg Leu	cac His	aga Arg 325	tta Leu	gag Glu	agt Ser	cag Gln	tac Tyr 330	gct Ala	aaa Lys	ctc Leu	ttg Leu	aat Asn 335	aca Thr	1008
tcc Ser	aga Arg	aat Asn	cag Gln 340	gag Glu	cga Arg	cat His	ctc Leu	gat Asp 345	aca Thr	ctc Leu	cac His	aac Asn	ttt Phe 350	gta Val	acc Thr	1056
cgc Arg	gca Ala	act Thr 355	aac Asn	gag Glu	ctt Leu	atc Ile	tgg Trp 360	ttg Leu	aat Asn	gaa Glu	aag Lys	gag Glu 365	gag Glu	tcg Ser	gaa Glu	1104
gtt Val	gct Ala 370	tat Tyr	gat Asp	tgg Trp	agt Ser	gag Glu 375	aga Arg	aac Asn	agc Ser	agt Ser	gtc Val 380	gcc Ala	cgg Arg	aag Lys	aaa Lys	1152
agc Ser 385	tac Tyr	cac His	gtg Val	gag Glu	ctg Leu 390	atg Met	cgg Arg	gag Glu	ctg Leu	gag Glu 395	cag Gln	aag Lys	gag Glu	gag Glu	agc Ser 400	1200
att Ile	aaa Lys	gct Ala	gtt Val	cag Gln 405	gag Glu	atc Ile	gca Ala	gag Glu	cag Gln 410	ctg Leu	ctt Leu	ctg Leu	gaa Glu	aac Asn 415	cac His	1248

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cca	gcc	cg	ttg	acc	atc	gag	gcg	tac	aga	gcg	gcc	atg	cag	aca	cag	1296
Pro	Ala	Arg	Leu	Thr	Ile	Glu	Ala	Tyr	Arg	Ala	Ala	Met	Gln	Thr	Gln	
			420					425					430			
tgg	agc	tgg	atc	cta	cag	ctg	tgc	cag	tgc	gtg	gag	cag	cac	att	cag	1344
Trp	Ser	Trp	Ile	Leu	Gln	Leu	Cys	Gln	Cys	Val	Glu	Gln	His	Ile	Gln	
		435					440					445				
gag	aac	tct	gcc	tat	ttc	gag	ttt	ttc	aat	gat	gcc	aaa	gaa	gcc	act	1392
Glu	Asn	Ser	Ala	Tyr	Phe	Glu	Phe	Phe	Asn	Asp	Ala	Lys	Glu	Ala	Thr	
	450					455					460					
gat	tac	cta	agg	aat	ctg	aaa	gat	gcc	atc	cag	cg	aag	tac	agc	tgt	1440
Asp	Tyr	Leu	Arg	Asn	Leu	Lys	Asp	Ala	Ile	Gln	Arg	Lys	Tyr	Ser	Cys	
	465				470					475					480	
gac	agg	tcc	agc	agc	att	cac	aaa	ctg	gaa	gac	ctt	gtc	cag	gag	tcc	1488
Asp	Arg	Ser	Ser	Ser	Ile	His	Lys	Leu	Glu	Asp	Leu	Val	Gln	Glu	Ser	
				485					490					495		
atg	gaa	aag	gag	gag	ctc	ctg	cag	tac	cg	agt	gtg	gtg	gca	ggg	ctg	1536
Met	Glu	Lys	Glu	Glu	Leu	Leu	Gln	Tyr	Arg	Ser	Val	Val	Ala	Gly	Leu	
			500					505					510			
atg	ggg	cga	gcg	aag	aca	gtg	gtg	cag	ctg	aag	ccg	agg	aat	cct	gac	1584
Met	Gly	Arg	Ala	Lys	Thr	Val	Val	Gln	Leu	Lys	Pro	Arg	Asn	Pro	Asp	
		515					520					525				
aac	cca	ctc	aag	acg	tcc	atc	ccc	atc	aaa	gcc	atc	tgc	gac	tac	aga	1632
Asn	Pro	Leu	Lys	Thr	Ser	Ile	Pro	Ile	Lys	Ala	Ile	Cys	Asp	Tyr	Arg	
	530					535					540					
cag	att	gag	ata	acc	att	tac	aaa	gac	gat	gag	tgt	gtc	ttg	gca	aac	1680
Gln	Ile	Glu	Ile	Thr	Ile	Tyr	Lys	Asp	Asp	Glu	Cys	Val	Leu	Ala	Asn	
	545				550					555					560	
aac	tct	cat	cga	gct	aaa	tgg	aag	gtc	atc	agt	cct	act	ggg	aac	gag	1728
Asn	Ser	His	Arg	Ala	Lys	Trp	Lys	Val	Ile	Ser	Pro	Thr	Gly	Asn	Glu	
				565					570					575		
gcc	gtg	gtc	ccg	tct	gtg	tgc	ttt	act	gtt	ccc	cca	cca	aac	aaa	gaa	1776
Ala	Val	Val	Pro	Ser	Val	Cys	Phe	Thr	Val	Pro	Pro	Pro	Asn	Lys	Glu	
			580					585					590			
gca	gtt	gac	ttt	gcc	aac	aga	att	gag	caa	cag	tat	cag	agt	gta	ctc	1824
Ala	Val	Asp	Phe	Ala	Asn	Arg	Ile	Glu	Gln	Gln	Tyr	Gln	Ser	Val	Leu	
		595					600					605				
act	ctc	tgg	cat	gag	tct	cac	ata	aac	atg	aag	agt	gtc	gtc	tcc	tgg	1872
Thr	Leu	Trp	His	Glu	Ser	His	Ile	Asn	Met	Lys	Ser	Val	Val	Ser	Trp	
	610					615					620					
cac	tat	cta	gtc	aat	gaa	atc	gac	aga	att	cga	gct	agt	aat	gtg	gct	1920
His	Tyr	Leu	Val	Asn	Glu	Ile	Asp	Arg	Ile	Arg	Ala	Ser	Asn	Val	Ala	
	625				630					635					640	
tcg	ata	aag	acg	atg	ttg	cct	ggc	gag	cac	cag	cag	gtt	ctc	agt	aat	1968
Ser	Ile	Lys	Thr	Met	Leu	Pro	Gly	Glu	His	Gln	Gln	Val	Leu	Ser	Asn	
				645					650					655		
ctc	cag	tcc	cg	ttg	gag	gat	ttc	ctg	gag	gat	agc	cag	gaa	tcc	cag	2016
Leu	Gln	Ser	Arg	Leu	Glu	Asp	Phe	Leu	Glu	Asp	Ser	Gln	Glu	Ser	Gln	
			660					665					670			
ata	ttc	tca	ggc	tcg	gat	ata	agt	caa	cta	gaa	aag	gaa	gtg	agt	gtg	2064
Ile	Phe	Ser	Gly	Ser	Asp	Ile	Ser	Gln	Leu	Glu	Lys	Glu	Val	Ser	Val	
		675					680					685				
tgc	agg	aag	tat	tat	caa	gag	ctc	ctc	aag	tct	gca	gaa	aga	gag	gag	2112

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Cys	Arg	Lys	Tyr	Tyr	Gln	Glu	Leu	Leu	Lys	Ser	Ala	Glu	Arg	Glu	Glu	
690						695					700					
caa	gag	gaa	tct	gtg	tat	aat	ctt	tac	atc	tcg	gaa	gtg	cga	aac	att	2160
Gln	Glu	Glu	Ser	Val	Tyr	Asn	Leu	Tyr	Ile	Ser	Glu	Val	Arg	Asn	Ile	
705					710					715						
cgg	ctc	cgc	ctg	gag	agc	tgt	gaa	gac	agg	ttg	att	cgg	cag	atc	cgg	2208
Arg	Leu	Arg	Leu	Glu	Ser	Cys	Glu	Asp	Arg	Leu	Ile	Arg	Gln	Ile	Arg	
				725					730					735		
act	ccc	ctg	gaa	aga	gat	gat	tta	cat	gaa	agc	atg	ctc	agg	atc	acg	2256
Thr	Pro	Leu	Glu	Arg	Asp	Asp	Leu	His	Glu	Ser	Met	Leu	Arg	Ile	Thr	
			740					745					750			
gag	cag	gag	aaa	ctg	aag	aaa	gag	ctg	gat	cgg	ctt	aaa	gat	gac	ttg	2304
Glu	Gln	Glu	Lys	Leu	Lys	Lys	Glu	Leu	Asp	Arg	Leu	Lys	Asp	Asp	Leu	
		755					760					765				
gga	acg	atc	aca	aat	aag	tgt	gaa	gag	ttt	ttc	agc	caa	gcg	gct	gac	2352
Gly	Thr	Ile	Thr	Asn	Lys	Cys	Glu	Glu	Phe	Phe	Ser	Gln	Ala	Ala	Asp	
	770					775					780					
tcg	ccg	tct	gtc	ccc	gct	ctc	cga	tca	gag	ctc	agc	gtg	gtc	att	cag	2400
Ser	Pro	Ser	Val	Pro	Ala	Leu	Arg	Ser	Glu	Leu	Ser	Val	Val	Ile	Gln	
785					790					795					800	
agc	ttg	agt	cag	atc	tac	tct	atg	tct	tcc	acg	tac	ata	gag	aaa	ttg	2448
Ser	Leu	Ser	Gln	Ile	Tyr	Ser	Met	Ser	Ser	Thr	Tyr	Ile	Glu	Lys	Leu	
				805					810					815		
aag	act	gtg	aat	ttg	gtt	tta	aaa	aac	act	caa	gcc	gca	gaa	gcc	ctt	2496
Lys	Thr	Val	Asn	Leu	Val	Leu	Lys	Asn	Thr	Gln	Ala	Ala	Glu	Ala	Leu	
			820					825					830			
gtc	aaa	ctc	tac	gaa	acc	aaa	ctg	tgt	gaa	gag	gaa	gca	gtt	ata	gca	2544
Val	Lys	Leu	Tyr	Glu	Thr	Lys	Leu	Cys	Glu	Glu	Glu	Ala	Val	Ile	Ala	
		835					840					845				
gac	aag	aat	aac	att	gag	aat	tta	atg	agt	act	tta	aag	caa	tgg	cga	2592
Asp	Lys	Asn	Asn	Ile	Glu	Asn	Leu	Met	Ser	Thr	Leu	Lys	Gln	Trp	Arg	
	850					855					860					
tca	gaa	gta	gat	gag	aag	aga	gag	gtg	ttc	cat	gca	ttg	gaa	gac	gag	2640
Ser	Glu	Val	Asp	Glu	Lys	Arg	Glu	Val	Phe	His	Ala	Leu	Glu	Asp	Glu	
865					870				875						880	
ttg	cag	aaa	gca	aaa	gcc	atc	agc	gat	gag	atg	ttc	aag	aca	cac	aaa	2688
Leu	Gln	Lys	Ala	Lys	Ala	Ile	Ser	Asp	Glu	Met	Phe	Lys	Thr	His	Lys	
				885					890					895		
gaa	cgg	gac	ctt	gac	ttt	gac	tgg	cac	aaa	gaa	aag	gca	gac	cag	ctt	2736
Glu	Arg	Asp	Leu	Asp	Phe	Asp	Trp	His	Lys	Glu	Lys	Ala	Asp	Gln	Leu	
			900					905					910			
gtc	gaa	agg	tgg	cag	agc	gtt	cac	gtc	cag	atc	gac	aac	agg	ctc	cgg	2784
Val	Glu	Arg	Trp	Gln	Ser	Val	His	Val	Gln	Ile	Asp	Asn	Arg	Leu	Arg	
		915					920					925				
gac	tta	gaa	gga	atc	ggg	aag	tcc	ctg	aag	cac	tac	agg	gac	tcc	tac	2832
Asp	Leu	Glu	Gly	Ile	Gly	Lys	Ser	Leu	Lys	His	Tyr	Arg	Asp	Ser	Tyr	
	930					935					940					
cac	cct	ctc	gat	gac	tgg	atc	cag	cac	att	gaa	acg	acc	cag	aga	aaa	2880
His	Pro	Leu	Asp	Asp	Trp	Ile	Gln	His	Ile	Glu	Thr	Thr	Gln	Arg	Lys	
945					950					955					960	
att	cag	gaa	aat	cag	cca	gaa	aac	agc	aaa	gcc	ctg	gcc	ctg	cag	ctg	2928
Ile	Gln	Glu	Asn	Gln	Pro	Glu	Asn	Ser	Lys	Ala	Leu	Ala	Leu	Gln	Leu	

aac caa cag aag atg ctg gtg tct gaa ata gag gtg aag cag agc aaa Asn Gln Gln Lys Met Leu Val Ser Glu Ile Glu Val Lys Gln Ser Lys	2976
980 985 990	
atg gac gag tgt cag aaa tac tca gag cag tac tcg gct gcc gtc aag Met Asp Glu Cys Gln Lys Tyr Ser Glu Gln Tyr Ser Ala Ala Val Lys	3024
995 1000 1005	
gac tat gag ttg caa aca atg acc tac agg gct atg gtg gag tcc Asp Tyr Glu Leu Gln Thr Met Thr Tyr Arg Ala Met Val Glu Ser	3069
1010 1015 1020	
cag cag aag tcg cca gtg aag cga cgg cgg ata cag agc tca gca Gln Gln Lys Ser Pro Val Lys Arg Arg Arg Ile Gln Ser Ser Ala	3114
1025 1030 1035	
gac ctg gtt att caa gag ttc atg gac cta cgg aca cgg tac act Asp Leu Val Ile Gln Glu Phe Met Asp Leu Arg Thr Arg Tyr Thr	3159
1040 1045 1050	
gcc ctg gtc act ctt atg acg cag tat att aaa ttt gct ggt gat Ala Leu Val Thr Leu Met Thr Gln Tyr Ile Lys Phe Ala Gly Asp	3204
1055 1060 1065	
tcg ttg aaa agg ctg gaa gag gag gag atg aaa agg tct aaa gag Ser Leu Lys Arg Leu Glu Glu Glu Met Lys Arg Ser Lys Glu	3249
1070 1075 1080	
aat tct gag cac ggg gcg tat tca gat cta ctg cag cgt cag aga Asn Ser Glu His Gly Ala Tyr Ser Asp Leu Leu Gln Arg Gln Arg	3294
1085 1090 1095	
gca acc atg gtt gag aat agc aaa ctt acc ggg aag atc agt gaa Ala Thr Met Val Glu Asn Ser Lys Leu Thr Gly Lys Ile Ser Glu	3339
1100 1105 1110	
ctg gaa aca atg gtg gct gag cta aag aaa cag aaa tcc cgg gtc Leu Glu Thr Met Val Ala Glu Leu Lys Lys Gln Lys Ser Arg Val	3384
1115 1120 1125	
gag gag gag ctt ccg aaa gtt aag gag gcc gcc gaa aat gaa ctg Glu Glu Glu Leu Pro Lys Val Lys Glu Ala Ala Glu Asn Glu Leu	3429
1130 1135 1140	
agg aag caa cag agg aac gtg gaa gac atc gcc ctg cag aag ctg Arg Lys Gln Gln Arg Asn Val Glu Asp Ile Ala Leu Gln Lys Leu	3474
1145 1150 1155	
agg gcc gag agc gag gcc aag cag tac cgc cgt gag ctg gag acg Arg Ala Glu Ser Glu Ala Lys Gln Tyr Arg Arg Glu Leu Glu Thr	3519
1160 1165 1170	
atc gtg agg gag aag gaa gct gcc gag cgg gag ctg gag cgg gtg Ile Val Arg Glu Lys Glu Ala Ala Glu Arg Glu Leu Glu Arg Val	3564
1175 1180 1185	
agg cag ctc acg gcg gag gcg gaa gct cgg cga gcc gcg gtg gag Arg Gln Leu Thr Ala Glu Ala Glu Ala Arg Arg Ala Ala Val Glu	3609
1190 1195 1200	
gag aac ctc cgc aac ttc cgg agc cag ctg cag gaa aac acc ttc Glu Asn Leu Arg Asn Phe Arg Ser Gln Leu Gln Glu Asn Thr Phe	3654
1205 1210 1215	
acc agg cag acg ctg gaa gat cat ctg cgg agg aaa gac tcg agc Thr Arg Gln Thr Leu Glu Asp His Leu Arg Arg Lys Asp Ser Ser	3699
1220 1225 1230	

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ctc Leu	agt Ser 1235	gat Asp	ctg Leu	gaa Glu	cag Gln	cag Gln 1240	aaa Lys	cgg Arg	gcc Ala	ctg Leu	gtg Val 1245	gaa Glu	gaa Glu	ctg Leu	3744
caa Gln	cga Arg 1250	aag Lys	cgg Arg	gac Asp	cac His	gag Glu 1255	gag Glu	gag Glu	ctc Leu	ctg Leu	cga Arg 1260	ctg Leu	gtg Val	aag Lys	3789
cag Gln	atg Met 1265	gag Glu	cgg Arg	gac Asp	ctg Leu	gcc Ala 1270	ttc Phe	cag Gln	aag Lys	cag Gln	gtg Val 1275	gcc Ala	gag Glu	aag Lys	3834
cag Gln	ctg Leu 1280	aag Lys	gaa Glu	aag Lys	cag Gln	aag Lys 1285	gtc Val	gag Glu	ttg Leu	gaa Glu	gcc Ala 1290	aga Arg	agg Arg	aaa Lys	3879
atc Ile	acc Thr 1295	gaa Glu	att Ile	cag Gln	ttt Phe	tca Ser 1300	tgt Cys	aga Arg	gag Glu	agc Ser	gct Ala 1305	gcg Ala	gtg Val	gca Ala	3924
cag Gln	gca Ala 1310	cgg Arg	ccc Pro	cag Gln	agg Arg	gag Glu 1315	cag Gln	ggc Gly	aga Arg	cag Gln	aaa Lys 1320	gag Glu	gag Glu	gag Glu	3969
ctg Leu	aag Lys 1325	cag Gln	cag Gln	gtg Val	gat Asp	gag Glu 1330	ctg Leu	acc Thr	ttg Leu	gcc Ala	aat Asn 1335	agg Arg	aag Lys	gca Ala	4014
gag Glu	aaa Lys 1340	gag Glu	atg Met	agg Arg	gag Glu	ctg Leu 1345	aag Lys	tat Tyr	gaa Glu	ctc Leu	agc Ser 1350	gcg Ala	gtc Val	cag Gln	4059
ctc Leu	gaa Glu 1355	aag Lys	gcc Ala	tcg Ser	tct Ser	gag Glu 1360	gaa Glu	aag Lys	gcc Ala	cgg Arg	ctg Leu 1365	ttg Leu	aag Lys	gat Asp	4104
aaa Lys	ttg Leu 1370	gac Asp	gag Glu	acg Thr	aat Asn	aac Asn 1375	aca Thr	ctc Leu	aag Lys	tcg Cys	ctc Leu 1380	aag Lys	gaa Glu	gat Asp	4149
ctg Leu	gaa Glu 1385	agg Arg	aag Lys	gat Asp	cag Gln	gcc Ala 1390	cag Gln	gaa Glu	cgc Arg	tat Tyr	tcc Ser 1395	cag Gln	cag Gln	ctc Leu	4194
aga Arg	gac Asp 1400	ctt Leu	ggc Gly	ggg Gly	cag Gln	ctg Leu 1405	aac Asn	caa Gln	aca Thr	aca Thr	gac Asp 1410	aaa Lys	gct Ala	gaa Glu	4239
gag Glu	gtc Val 1415	agg Arg	cag Gln	gaa Glu	gca Ala	aac Asn 1420	gat Asp	ctc Leu	aag Lys	aaa Lys	ata Ile 1425	aag Lys	cac His	acc Thr	4284
tat Tyr	cag Gln 1430	ttg Leu	gaa Glu	tta Leu	gag Glu	tct Ser 1435	ctc Leu	cat His	caa Gln	gag Glu	aaa Lys 1440	gga Gly	aaa Lys	ctc Leu	4329
cag Gln	agg Arg 1445	gaa Glu	gtt Val	gac Asp	aga Arg	gtc Val 1450	acc Thr	agg Arg	gcg Ala	cac His	gca Ala 1455	cta Leu	gcc Ala	gag Glu	4374
agg Arg	aac Asn 1460	att Ile	cag Gln	tgt Cys	tta Leu	aac Asn 1465	tcc Ser	caa Gln	gtt Val	cac His	gct Ala 1470	tcg Ser	agg Arg	gat Asp	4419
gag Glu	aag Lys 1475	gac Asp	ctc Leu	tca Ser	gaa Glu	gag Glu 1480	agg Arg	aga Arg	cgg Arg	ctc Leu	tcg Cys 1485	cag Gln	aga Arg	aaa Lys	4464

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tca Ser	gac Asp 1490	cat His	tta Leu	aaa Lys	gaa Glu	gag Glu 1495	ttt Phe	gag Glu	agg Arg	agc Ser	cat His 1500	gca Ala	cag Gln	ttg Leu	4509
ctt Leu	cag Gln 1505	aat Asn	att Ile	caa Gln	gcc Ala	gag Glu 1510	aaa Lys	gaa Glu	aat Asn	aat Asn	gat Asp 1515	aaa Lys	atc Ile	caa Gln	4554
aag Lys	ctg Leu 1520	aat Asn	aaa Lys	gag Glu	ctg Leu	gag Glu 1525	aaa Lys	agc Ser	aat Asn	gag Glu	tgc Cys 1530	gca Ala	gaa Glu	acg Thr	4599
ctc Leu	aag Lys 1535	cag Gln	aag Lys	gtg Val	gat Asp	gaa Glu 1540	ctc Leu	act Thr	agg Arg	cag Gln	aat Asn 1545	aat Asn	gaa Glu	acc Thr	4644
aaa Lys	ttg Leu 1550	atg Met	atg Met	cag Gln	agg Arg	att Ile 1555	cag Gln	gca Ala	gag Glu	tcc Ser	aag Lys 1560	aac Asn	ata Ile	gtc Val	4689
cgc Arg	gag Glu 1565	aag Lys	caa Gln	gcc Ala	atc Ile	cag Gln 1570	cag Gln	aga Arg	tgc Cys	gaa Glu	gtg Val 1575	ctg Leu	cgg Arg	atc Ile	4734
cag Gln	gca Ala 1580	gac Asp	ggg Gly	ttt Phe	aag Lys	gat Asp 1585	cag Gln	tta Leu	cgg Arg	aac Asn	acc Thr 1590	aac Asn	gaa Glu	cac His	4779
ttg Leu	cat His 1595	aag Lys	cag Gln	aca Thr	aaa Lys	aca Thr 1600	gag Glu	cag Gln	gat Asp	ttc Phe	cac His 1605	aga Arg	aaa Lys	att Ile	4824
aaa Lys	agc Ser 1610	ctc Leu	gaa Glu	gat Asp	gat Asp	cta Leu 1615	gcc Ala	caa Gln	agt Ser	caa Gln	aac Asn 1620	cta Leu	gta Val	agc Ser	4869
gag Glu	ttc Phe 1625	aag Lys	caa Gln	aag Lys	tgt Cys	gac Asp 1630	cag Gln	cag Gln	agc Ser	atg Met	atc Ile 1635	atc Ile	cag Gln	aaa Lys	4914
acg Thr	gag Glu 1640	aag Lys	gag Glu	gtg Val	agg Arg	agc Ser 1645	ctg Leu	agc Ser	gca Ala	gaa Glu	ctg Leu 1650	agc Ser	gcg Ala	tcc Ser	4959
aaa Lys	gag Glu 1655	gag Glu	aag Lys	cgg Arg	cgg Arg	gaa Glu 1660	gag Glu	cag Gln	aag Lys	gct Ala	cag Gln 1665	ctg Leu	cag Gln	cga Arg	5004
gct Ala	cag Gln 1670	gtg Val	cag Gln	gag Glu	ctg Leu	aat Asn 1675	gac Asp	agg Arg	ctg Leu	aag Lys	agg Arg 1680	gtg Val	caa Gln	gac Asp	5049
gag Glu	ctg Leu 1685	cac His	ctg Leu	aag Lys	acc Thr	atc Ile 1690	gaa Glu	gag Glu	cag Gln	atg Met	acc Thr 1695	cac His	agg Arg	aag Lys	5094
atg Met	atc Ile 1700	ctg Leu	ctc Leu	cag Gln	gaa Glu	gag Glu 1705	tcg Ser	gat Asp	aag Lys	ttc Phe	aaa Lys 1710	cgc Arg	tcg Ser	gca Ala	5139
gat Asp	gag Glu 1715	ttt Phe	cgg Arg	aag Lys	aag Lys	atg Met 1720	gag Glu	aag Lys	cta Leu	atg Met	gag Glu 1725	tcc Ser	aag Lys	gtc Val	5184
gtc Val	act Thr 1730	gaa Glu	acc Thr	gat Asp	ctc Leu	tca Ser 1735	ggc Gly	atc Ile	aag Lys	cac His	gac Asp 1740	ttt Phe	gtg Val	tct Ser	5229
ctc Leu	cag Glu	aga Glu	gaa Glu	aac Glu	ttc Glu	cgg Glu	gcg Glu	caa Glu	gag Glu	aac Glu	gag Glu	aag Glu	ctg Glu	tgg Glu	5274



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Leu	Gln	Arg	Glu	Asn	Phe	Arg	Ala	Gln	Glu	Asn	Ala	Lys	Leu	Trp	
	1745					1750					1755				
gag	acc	aac	att	cga	gag	ctt	gag	cgg	cag	ctt	cag	tgc	tac	cgt	5319
Glu	Thr	Asn	Ile	Arg	Glu	Leu	Glu	Arg	Gln	Leu	Gln	Cys	Tyr	Arg	
	1760					1765					1770				
gag	aag	atg	cag	caa	ggc	ccg	ccc	gtg	gaa	gca	aac	cac	tat	cag	5364
Glu	Lys	Met	Gln	Gln	Gly	Pro	Pro	Val	Glu	Ala	Asn	His	Tyr	Gln	
	1775					1780					1785				
aag	tgc	cgg	aga	ctc	gag	gag	gag	ctg	ttg	gcc	cag	aga	cgg	gaa	5409
Lys	Cys	Arg	Arg	Leu	Glu	Glu	Glu	Leu	Leu	Ala	Gln	Arg	Arg	Glu	
	1790					1795					1800				
gtt	gaa	aac	ctc	aaa	caa	aaa	atg	gac	cag	cag	ata	aag	gaa	cat	5454
Val	Glu	Asn	Leu	Lys	Gln	Lys	Met	Asp	Gln	Gln	Ile	Lys	Glu	His	
	1805					1810					1815				
gag	cac	cag	ttg	ctt	cgg	ctc	cag	tgt	gaa	atc	caa	aag	aag	agc	5499
Glu	His	Gln	Leu	Leu	Arg	Leu	Gln	Cys	Glu	Ile	Gln	Lys	Lys	Ser	
	1820					1825					1830				
aca	acc	caa	gac	cac	acc	ttc	gcg	tcg	gct	ttt	gat	acg	gca	ggg	5544
Thr	Thr	Gln	Asp	His	Thr	Phe	Ala	Ser	Ala	Phe	Asp	Thr	Ala	Gly	
	1835					1840					1845				
aga	gag	tgc	cac	cac	cct	gca	gag	atc	tcc	cct	ggg	aac	tct	ggg	5589
Arg	Glu	Cys	His	His	Pro	Ala	Glu	Ile	Ser	Pro	Gly	Asn	Ser	Gly	
	1850					1855					1860				
cac	ctt	aac	cta	aag	acc	aga	ctc	cca	ctg	tcc	agg	tgg	act	cag	5634
His	Leu	Asn	Leu	Lys	Thr	Arg	Leu	Pro	Leu	Ser	Arg	Trp	Thr	Gln	
	1865					1870					1875				
gag	cca	cac	cag	aca	gaa	gga	aaa	tgg	ccg	cac	agg	gct	gct	gaa	5679
Glu	Pro	His	Gln	Thr	Glu	Gly	Lys	Trp	Pro	His	Arg	Ala	Ala	Glu	
	1880					1885					1890				
caa	ctt	ccg	aag	gag	gtt	cag	ttc	cga	cag	cca	ggg	gct	ccg	ctg	5724
Gln	Leu	Pro	Lys	Glu	Val	Gln	Phe	Arg	Gln	Pro	Gly	Ala	Pro	Leu	
	1895					1900					1905				
gac	agg	gag	agc	agc	cag	cca	tgc	tac	tcg	gag	tat	ttt	tct	cag	5769
Asp	Arg	Glu	Ser	Ser	Gln	Pro	Cys	Tyr	Ser	Glu	Tyr	Phe	Ser	Gln	
	1910					1915					1920				
aca	agc	act	gaa	ctg	cag	ata	act	ttt	gat	gat	aaa	aac	cca	atc	5814
Thr	Ser	Thr	Glu	Leu	Gln	Ile	Thr	Phe	Asp	Asp	Lys	Asn	Pro	Ile	
	1925					1930					1935				
acg	cga	ctg	tct	gaa	cta	gag	acg	atg	agg	gag	caa	gcc	ctg	cat	5859
Thr	Arg	Leu	Ser	Glu	Leu	Glu	Thr	Met	Arg	Glu	Gln	Ala	Leu	His	
	1940					1945					1950				
ccc	tcc	aga	ccg	ccg	gtg	acg	tat	cag	gat	gac	aaa	ctt	gaa	agg	5904
Pro	Ser	Arg	Pro	Pro	Val	Thr	Tyr	Gln	Asp	Asp	Lys	Leu	Glu	Arg	
	1955					1960					1965				
gag	ttg	gtg	aag	ctt	ttg	aca	ccc	tta	gag	ata	gct	aag	aac	aaa	5949
Glu	Leu	Val	Lys	Leu	Leu	Thr	Pro	Leu	Glu	Ile	Ala	Lys	Asn	Lys	
	1970					1975					1980				
cag	tgt	ggc	atg	cat	aca	gaa	gtc	acg	acc	tta	aaa	caa	gag	aag	5994
Gln	Cys	Gly	Met	His	Thr	Glu	Val	Thr	Thr	Leu	Lys	Gln	Glu	Lys	
	1985					1990					1995				
agg	ctg	ggt	tcc	agt	gct	ggt	gga	tgg	atg	ctg	gaa	ggg	tgc	aga	6039
Arg	Leu	Gly	Ser	Ser	Ala	Gly	Gly	Trp	Met	Leu	Glu	Gly	Cys	Arg	

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2000	2005	2010	
aca Thr 2015	tct Ser	ggt Gly	6084
cca Pro 2030	gag Glu	gct Ala	6129
agg Arg 2045	gat Asp	gag Glu	6174
ggc Gly 2060	agg Arg	cag Gln	6219
gag Glu 2075	cag Gln	ctg Leu	6264
agt Ser 2090	ctt Leu	agc Ser	6309
tat Tyr 2105	cta Leu	gaa Glu	6354
cag Gln 2120	aaa Lys	atc Ile	6399
gct Ala 2135	cag Gln	gct Ala	6444
act Thr 2150	tac Tyr	tgt Cys	6489
gag Glu 2165	ttc Phe	agg Arg	6534
tat Tyr 2180	tca Ser	cat His	6579
aat Asn 2195	aga Arg	atg Met	6624
caa Gln 2210	att Ile	gcc Ala	6669
gtc Val 2225	cct Pro	cca Pro	6714
gtc Val 2240	cta Leu	cag Gln	6759
cct Pro 2255	aat Asn	ccc Pro	6804

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cag Gln 2270	atc Ile 2270	tgt Cys 2270	gtg Val 2270	ttt Phe 2270	gat Asp 2270	gta Val 2275	gat Asp 2275	tgc Cys 2275	cag Gln 2275	tgt Cys 2275	ttt Phe 2280	ctc Leu 2280	ttg Leu 2280	ccg Pro 2280	6849
ttt Phe 2285	ggg Gly 2285	gag Glu 2285	agg Arg 2285	gaa Glu 2285	ata Ile 2285	tcc Ser 2290	aat Asn 2290	ctc Leu 2290	aac Asn 2290	ata Ile 2290	gag Glu 2295	aaa Lys 2295	act Thr 2295	cat His 2295	6894
aaa Lys 2300	att Ile 2300	gcc Ala 2300	gtg Val 2300	gta Val 2300	gat Asp 2300	acc Thr 2305	aaa Lys 2305	act Thr 2305	ggg Gly 2305	gcg Ala 2305	gaa Glu 2310	ctg Leu 2310	acg Thr 2310	gca Ala 2310	6939
ttc Phe 2315	gag Glu 2315	gct Ala 2315	ttc Phe 2315	cag Gln 2315	aga Arg 2315	aac Asn 2320	ctg Leu 2320	att Ile 2320	gac Asp 2320	aag Lys 2320	ggg Gly 2325	att Ile 2325	tat Tyr 2325	ctc Leu 2325	6984
gaa Glu 2330	ctc Leu 2330	tca Ser 2330	ggg Gly 2330	cag Gln 2330	cag Gln 2330	tat Tyr 2335	cag Gln 2335	tgg Trp 2335	aag Lys 2335	gaa Glu 2335	gct Ala 2340	aca Thr 2340	ttt Phe 2340	ttt Phe 2340	7029
gac Asp 2345	tcc Ser 2345	tac Tyr 2345	ggg Gly 2345	cat His 2345	cct Pro 2345	tct Ser 2350	cac His 2350	atg Met 2350	ctg Leu 2350	act Thr 2350	gat Asp 2355	act Thr 2355	aaa Lys 2355	act Thr 2355	7074
ggg Gly 2360	ctg Leu 2360	cag Gln 2360	ttc Phe 2360	aat Asn 2360	att Ile 2360	agt Ser 2365	gaa Glu 2365	gct Ala 2365	gtc Val 2365	gag Glu 2365	cag Gln 2370	gga Gly 2370	acg Thr 2370	cta Leu 2370	7119
gac Asp 2375	aaa Lys 2375	gcc Ala 2375	ttg Leu 2375	gtg Val 2375	caa Gln 2375	aag Lys 2380	tat Tyr 2380	cag Gln 2380	gaa Glu 2380	ggc Gly 2380	cta Leu 2385	act Thr 2385	aca Thr 2385	cta Leu 2385	7164
aca Thr 2390	gaa Glu 2390	ctg Leu 2390	gct Ala 2390	gac Asp 2390	ttt Phe 2390	ctt Leu 2395	ctg Leu 2395	agc Ser 2395	aag Lys 2395	gta Val 2395	gtt Val 2400	ccc Pro 2400	aag Lys 2400	aag Lys 2400	7209
gat Asp 2405	ttg Leu 2405	cac His 2405	agt Ser 2405	ccc Pro 2405	att Ile 2405	gca Ala 2410	ggc Gly 2410	tat Tyr 2410	tgg Trp 2410	ctg Leu 2410	acc Thr 2415	gct Ala 2415	agt Ser 2415	ggg Gly 2415	7254
gag Glu 2420	cga Arg 2420	atc Ile 2420	tcc Ser 2420	ttg Leu 2420	ctg Leu 2420	aaa Lys 2425	gcc Ala 2425	tcc Ser 2425	cgt Arg 2425	aga Arg 2425	aac Asn 2430	ttg Leu 2430	gtt Val 2430	gat Asp 2430	7299
agg Arg 2435	gtt Val 2435	aca Thr 2435	gcc Ala 2435	ctc Leu 2435	aga Arg 2435	tgc Cys 2440	ctt Leu 2440	gaa Glu 2440	gcc Ala 2440	caa Gln 2440	atc Ile 2445	tgt Cys 2445	aca Thr 2445	gga Gly 2445	7344
ggg Gly 2450	atc Ile 2450	atc Ile 2450	gat Asp 2450	ccc Pro 2450	cta Leu 2450	act Thr 2455	ggg Gly 2455	aaa Lys 2455	aag Lys 2455	tac Tyr 2455	agg Arg 2460	gtg Val 2460	gcc Ala 2460	gag Glu 2460	7389
gct Ala 2465	ttg Leu 2465	cat His 2465	aga Arg 2465	ggg Gly 2465	ctg Leu 2465	gtg Val 2470	gac Asp 2470	gag Glu 2470	ggc Gly 2470	ttc Phe 2470	gcc Ala 2475	cag Gln 2475	cag Gln 2475	cta Leu 2475	7434
cgc Arg 2480	cag Gln 2480	tgt Cys 2480	gaa Glu 2480	tta Leu 2480	gtg Val 2480	atc Ile 2485	acg Thr 2485	ggg Gly 2485	atc Ile 2485	agc Ser 2485	cac His 2490	ccc Pro 2490	gtc Val 2490	agc Ser 2490	7479
aat Asn 2495	aaa Lys 2495	atg Met 2495	atg Met 2495	tca Ser 2495	gtg Val 2495	gtg Val 2500	gaa Glu 2500	gcc Ala 2500	gtg Val 2500	aat Asn 2500	gca Ala 2505	aat Asn 2505	atc Ile 2505	atc Ile 2505	7524
agt Ser 2510	aaa Lys 2510	gaa Glu 2510	atg Met 2510	ggc Gly 2510	atg Met 2510	cgg Arg 2515	tgc Cys 2515	ctg Leu 2515	gaa Glu 2515	ttt Phe 2515	cag Gln 2520	tac Tyr 2520	ctg Leu 2520	aca Thr 2520	7569

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ggg ggc ctg ata gag ccg aag gtt ttc tcg agg ctg acc ata gaa 7614
Gly Gly Leu Ile Glu Pro Lys Val Phe Ser Arg Leu Thr Ile Glu
2525 2530 2535

gag gcc ctt cac gtc ggt atc att gat gtc ctc atc gcc acc aga 7659
Glu Ala Leu His Val Gly Ile Ile Asp Val Leu Ile Ala Thr Arg
2540 2545 2550

ctc aaa gat caa aag tca tat gtc agg gat ata atg tgc ccc cag 7704
Leu Lys Asp Gln Lys Ser Tyr Val Arg Asp Ile Met Cys Pro Gln
2555 2560 2565

act aag aga aaa ttg aca tat aaa gag gcc ctg gag aaa gct gat 7749
Thr Lys Arg Lys Leu Thr Tyr Lys Glu Ala Leu Glu Lys Ala Asp
2570 2575 2580

ttt gat ttc cac aca gga ctt aag ctg tta gaa gtg tct gaa ccc 7794
Phe Asp Phe His Thr Gly Leu Lys Leu Leu Glu Val Ser Glu Pro
2585 2590 2595

ttg ggg aca ggg ata tcc aac ctc tac tat tct tcc cag 7833
Leu Gly Thr Gly Ile Ser Asn Leu Tyr Tyr Ser Ser Gln
2600 2605 2610

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<210> 106
<211> 2611
<212> PRT
<213> Mus musculus

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<400> 106
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Met Arg Ile Ser Cys Pro Phe Ile Val Val Pro Leu Ile Asn Ser Cys
1 5 10 15
```

```
Ile Ser Phe Ser Asn Glu Ser Leu Asp Gly His Arg Leu Asp Met Leu
20 25 30
```

```
Gln Gln Ile Ala Thr Arg Val Gln Arg Asp Ser Val Ser Cys Glu Asp
35 40 45
```

```
Lys Leu Ile Leu Ala Arg Asn Ala Leu Gln Ser Asp Ser Lys Arg Leu
50 55 60
```

```
Glu Ser Gly Val Gln Phe Gln Asn Glu Ala Glu Ile Ala Gly Tyr Ile
65 70 75 80
```

```
Leu Glu Cys Glu Asn Leu Leu Arg Gln His Val Ile Asp Val Gln Ile
85 90 95
```

```
Leu Ile Asp Gly Lys Tyr Tyr Gln Ala Asp Gln Leu Val Gln Arg Val
100 105 110
```

```
Ala Lys Leu Arg Asp Glu Ile Met Ala Leu Arg Asn Glu Cys Ser Ser
115 120 125
```

```
Val Tyr Ser Lys Gly Arg Met Leu Thr Thr Glu Gln Thr Lys Leu Met
130 135 140
```

```
Ile Ser Gly Ile Thr Gln Ser Leu Asn Ser Gly Phe Ala Gln Thr Leu
Seite 624
```

145                   150                   155                   160  
 His Pro Ser Leu Asn Ser Gly Leu Thr Gln Ser Leu Thr Pro Ser Leu  
                   165                   170                   175  
 Thr Ser Ser Ser Val Thr Ser Gly Leu Ser Ser Gly Met Thr Ser Arg  
                   180                   185                   190  
 Leu Thr Pro Ser Val Thr Pro Val Tyr Ala Pro Gly Phe Pro Ser Val  
                   195                   200                   205  
 Val Ala Pro Asn Phe Ser Leu Gly Val Glu Pro Asn Ser Leu Gln Thr  
                   210                   215                   220  
 Leu Lys Leu Met Gln Ile Arg Lys Pro Leu Leu Lys Ser Ser Leu Leu  
                   225                   230                   235                   240  
 Asp Gln Asn Leu Thr Glu Glu Glu Val Asn Met Lys Phe Val Gln Asp  
                   245                   250                   255  
 Leu Leu Asn Trp Val Asp Glu Met Gln Val Gln Leu Asp Arg Thr Glu  
                   260                   265                   270  
 Trp Gly Ser Asp Leu Pro Ser Val Glu Ser His Leu Glu Asn His Lys  
                   275                   280                   285  
 Asn Val His Arg Ala Ile Glu Glu Phe Glu Ser Ser Leu Lys Glu Ala  
                   290                   295                   300  
 Lys Ile Ser Glu Ile Gln Met Thr Ala Pro Leu Lys Leu Ser Tyr Thr  
                   305                   310                   315                   320  
 Asp Lys Leu His Arg Leu Glu Ser Gln Tyr Ala Lys Leu Leu Asn Thr  
                   325                   330                   335  
 Ser Arg Asn Gln Glu Arg His Leu Asp Thr Leu His Asn Phe Val Thr  
                   340                   345                   350  
 Arg Ala Thr Asn Glu Leu Ile Trp Leu Asn Glu Lys Glu Glu Ser Glu  
                   355                   360                   365  
 Val Ala Tyr Asp Trp Ser Glu Arg Asn Ser Ser Val Ala Arg Lys Lys  
                   370                   375                   380  
 Ser Tyr His Val Glu Leu Met Arg Glu Leu Glu Gln Lys Glu Glu Ser  
                   385                   390                   395                   400  
 Ile Lys Ala Val Gln Glu Ile Ala Glu Gln Leu Leu Leu Glu Asn His  
                   405                   410                   415  
 Pro Ala Arg Leu Thr Ile Glu Ala Tyr Arg Ala Ala Met Gln Thr Gln  
                   420                   425                   430

Trp Ser Trp Ile Leu Gln Leu Cys Gln Cys Val Glu Gln His Ile Gln  
 435 440 445  
 Glu Asn Ser Ala Tyr Phe Glu Phe Phe Asn Asp Ala Lys Glu Ala Thr  
 450 455 460  
 Asp Tyr Leu Arg Asn Leu Lys Asp Ala Ile Gln Arg Lys Tyr Ser Cys  
 465 470 475 480  
 Asp Arg Ser Ser Ser Ile His Lys Leu Glu Asp Leu Val Gln Glu Ser  
 485 490 495  
 Met Glu Lys Glu Glu Leu Leu Gln Tyr Arg Ser Val Val Ala Gly Leu  
 500 505 510  
 Met Gly Arg Ala Lys Thr Val Val Gln Leu Lys Pro Arg Asn Pro Asp  
 515 520 525  
 Asn Pro Leu Lys Thr Ser Ile Pro Ile Lys Ala Ile Cys Asp Tyr Arg  
 530 535 540  
 Gln Ile Glu Ile Thr Ile Tyr Lys Asp Asp Glu Cys Val Leu Ala Asn  
 545 550 555 560  
 Asn Ser His Arg Ala Lys Trp Lys Val Ile Ser Pro Thr Gly Asn Glu  
 565 570 575  
 Ala Val Val Pro Ser Val Cys Phe Thr Val Pro Pro Pro Asn Lys Glu  
 580 585 590  
 Ala Val Asp Phe Ala Asn Arg Ile Glu Gln Gln Tyr Gln Ser Val Leu  
 595 600 605  
 Thr Leu Trp His Glu Ser His Ile Asn Met Lys Ser Val Val Ser Trp  
 610 615 620  
 His Tyr Leu Val Asn Glu Ile Asp Arg Ile Arg Ala Ser Asn Val Ala  
 625 630 635 640  
 Ser Ile Lys Thr Met Leu Pro Gly Glu His Gln Gln Val Leu Ser Asn  
 645 650 655  
 Leu Gln Ser Arg Leu Glu Asp Phe Leu Glu Asp Ser Gln Glu Ser Gln  
 660 665 670  
 Ile Phe Ser Gly Ser Asp Ile Ser Gln Leu Glu Lys Glu Val Ser Val  
 675 680 685  
 Cys Arg Lys Tyr Tyr Gln Glu Leu Leu Lys Ser Ala Glu Arg Glu Glu  
 690 695 700

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Gln Glu Glu Ser Val Tyr Asn Leu Tyr Ile Ser Glu Val Arg Asn Ile  
705 710 715 720

Arg Leu Arg Leu Glu Ser Cys Glu Asp Arg Leu Ile Arg Gln Ile Arg  
725 730 735

Thr Pro Leu Glu Arg Asp Asp Leu His Glu Ser Met Leu Arg Ile Thr  
740 745 750

Glu Gln Glu Lys Leu Lys Lys Glu Leu Asp Arg Leu Lys Asp Asp Leu  
755 760 765

Gly Thr Ile Thr Asn Lys Cys Glu Glu Phe Phe Ser Gln Ala Ala Asp  
770 775 780

Ser Pro Ser Val Pro Ala Leu Arg Ser Glu Leu Ser Val Val Ile Gln  
785 790 795 800

Ser Leu Ser Gln Ile Tyr Ser Met Ser Ser Thr Tyr Ile Glu Lys Leu  
805 810 815

Lys Thr Val Asn Leu Val Leu Lys Asn Thr Gln Ala Ala Glu Ala Leu  
820 825 830

Val Lys Leu Tyr Glu Thr Lys Leu Cys Glu Glu Glu Ala Val Ile Ala  
835 840 845

Asp Lys Asn Asn Ile Glu Asn Leu Met Ser Thr Leu Lys Gln Trp Arg  
850 855 860

Ser Glu Val Asp Glu Lys Arg Glu Val Phe His Ala Leu Glu Asp Glu  
865 870 875 880

Leu Gln Lys Ala Lys Ala Ile Ser Asp Glu Met Phe Lys Thr His Lys  
885 890 895

Glu Arg Asp Leu Asp Phe Asp Trp His Lys Glu Lys Ala Asp Gln Leu  
900 905 910

Val Glu Arg Trp Gln Ser Val His Val Gln Ile Asp Asn Arg Leu Arg  
915 920 925

Asp Leu Glu Gly Ile Gly Lys Ser Leu Lys His Tyr Arg Asp Ser Tyr  
930 935 940

His Pro Leu Asp Asp Trp Ile Gln His Ile Glu Thr Thr Gln Arg Lys  
945 950 955 960

Ile Gln Glu Asn Gln Pro Glu Asn Ser Lys Ala Leu Ala Leu Gln Leu  
965 970 975

Asn Gln Gln Lys Met Leu Val Ser Glu Ile Glu Val Lys Gln Ser Lys  
 980 985 990  
  
 Met Asp Glu Cys Gln Lys Tyr Ser Glu Gln Tyr Ser Ala Ala Val Lys  
 995 1000 1005  
  
 Asp Tyr Glu Leu Gln Thr Met Thr Tyr Arg Ala Met Val Glu Ser  
 1010 1015 1020  
  
 Gln Gln Lys Ser Pro Val Lys Arg Arg Arg Ile Gln Ser Ser Ala  
 1025 1030 1035  
  
 Asp Leu Val Ile Gln Glu Phe Met Asp Leu Arg Thr Arg Tyr Thr  
 1040 1045 1050  
  
 Ala Leu Val Thr Leu Met Thr Gln Tyr Ile Lys Phe Ala Gly Asp  
 1055 1060 1065  
  
 Ser Leu Lys Arg Leu Glu Glu Glu Met Lys Arg Ser Lys Glu  
 1070 1075 1080  
  
 Asn Ser Glu His Gly Ala Tyr Ser Asp Leu Leu Gln Arg Gln Arg  
 1085 1090 1095  
  
 Ala Thr Met Val Glu Asn Ser Lys Leu Thr Gly Lys Ile Ser Glu  
 1100 1105 1110  
  
 Leu Glu Thr Met Val Ala Glu Leu Lys Lys Gln Lys Ser Arg Val  
 1115 1120 1125  
  
 Glu Glu Glu Leu Pro Lys Val Lys Glu Ala Ala Glu Asn Glu Leu  
 1130 1135 1140  
  
 Arg Lys Gln Gln Arg Asn Val Glu Asp Ile Ala Leu Gln Lys Leu  
 1145 1150 1155  
  
 Arg Ala Glu Ser Glu Ala Lys Gln Tyr Arg Arg Glu Leu Glu Thr  
 1160 1165 1170  
  
 Ile Val Arg Glu Lys Glu Ala Ala Glu Arg Glu Leu Glu Arg Val  
 1175 1180 1185  
  
 Arg Gln Leu Thr Ala Glu Ala Glu Ala Arg Arg Ala Ala Val Glu  
 1190 1195 1200  
  
 Glu Asn Leu Arg Asn Phe Arg Ser Gln Leu Gln Glu Asn Thr Phe  
 1205 1210 1215  
  
 Thr Arg Gln Thr Leu Glu Asp His Leu Arg Arg Lys Asp Ser Ser  
 1220 1225 1230  
  
 Leu Ser Asp Leu Glu Gln Gln Lys Arg Ala Leu Val Glu Glu Leu  
 Seite 628



1235

1240

1245

Gln Arg Lys Arg Asp His Glu Glu Glu Leu Leu Arg Leu Val Lys  
 1250 1255 1260

Gln Met Glu Arg Asp Leu Ala Phe Gln Lys Gln Val Ala Glu Lys  
 1265 1270 1275

Gln Leu Lys Glu Lys Gln Lys Val Glu Leu Glu Ala Arg Arg Lys  
 1280 1285 1290

Ile Thr Glu Ile Gln Phe Ser Cys Arg Glu Ser Ala Ala Val Ala  
 1295 1300 1305

Gln Ala Arg Pro Gln Arg Glu Gln Gly Arg Gln Lys Glu Glu Glu  
 1310 1315 1320

Leu Lys Gln Gln Val Asp Glu Leu Thr Leu Ala Asn Arg Lys Ala  
 1325 1330 1335

Glu Lys Glu Met Arg Glu Leu Lys Tyr Glu Leu Ser Ala Val Gln  
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Leu Glu Lys Ala Ser Ser Glu Glu Lys Ala Arg Leu Leu Lys Asp  
 1355 1360 1365

Lys Leu Asp Glu Thr Asn Asn Thr Leu Lys Cys Leu Lys Glu Asp  
 1370 1375 1380

Leu Glu Arg Lys Asp Gln Ala Gln Glu Arg Tyr Ser Gln Gln Leu  
 1385 1390 1395

Arg Asp Leu Gly Gly Gln Leu Asn Gln Thr Thr Asp Lys Ala Glu  
 1400 1405 1410

Glu Val Arg Gln Glu Ala Asn Asp Leu Lys Lys Ile Lys His Thr  
 1415 1420 1425

Tyr Gln Leu Glu Leu Glu Ser Leu His Gln Glu Lys Gly Lys Leu  
 1430 1435 1440

Gln Arg Glu Val Asp Arg Val Thr Arg Ala His Ala Leu Ala Glu  
 1445 1450 1455

Arg Asn Ile Gln Cys Leu Asn Ser Gln Val His Ala Ser Arg Asp  
 1460 1465 1470

Glu Lys Asp Leu Ser Glu Glu Arg Arg Arg Leu Cys Gln Arg Lys  
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Ser Asp His Leu Lys Glu Glu Phe Glu Arg Ser His Ala Gln Leu  
 1490 1495 1500

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Leu	Gln	Asn	Ile	Gln	Ala	Glu	Lys	Glu	Asn	Asn	Asp	Lys	Ile	Gln
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Lys	Leu	Asn	Lys	Glu	Leu	Glu	Lys	Ser	Asn	Glu	Cys	Ala	Glu	Thr
	1520					1525					1530			
Leu	Lys	Gln	Lys	Val	Asp	Glu	Leu	Thr	Arg	Gln	Asn	Asn	Glu	Thr
	1535					1540					1545			
Lys	Leu	Met	Met	Gln	Arg	Ile	Gln	Ala	Glu	Ser	Lys	Asn	Ile	Val
	1550					1555					1560			
Arg	Glu	Lys	Gln	Ala	Ile	Gln	Gln	Arg	Cys	Glu	Val	Leu	Arg	Ile
	1565					1570					1575			
Gln	Ala	Asp	Gly	Phe	Lys	Asp	Gln	Leu	Arg	Asn	Thr	Asn	Glu	His
	1580					1585					1590			
Leu	His	Lys	Gln	Thr	Lys	Thr	Glu	Gln	Asp	Phe	His	Arg	Lys	Ile
	1595					1600					1605			
Lys	Ser	Leu	Glu	Asp	Asp	Leu	Ala	Gln	Ser	Gln	Asn	Leu	Val	Ser
	1610					1615					1620			
Glu	Phe	Lys	Gln	Lys	Cys	Asp	Gln	Gln	Ser	Met	Ile	Ile	Gln	Lys
	1625					1630					1635			
Thr	Glu	Lys	Glu	Val	Arg	Ser	Leu	Ser	Ala	Glu	Leu	Ser	Ala	Ser
	1640					1645					1650			
Lys	Glu	Glu	Lys	Arg	Arg	Glu	Glu	Gln	Lys	Ala	Gln	Leu	Gln	Arg
	1655					1660					1665			
Ala	Gln	Val	Gln	Glu	Leu	Asn	Asp	Arg	Leu	Lys	Arg	Val	Gln	Asp
	1670					1675					1680			
Glu	Leu	His	Leu	Lys	Thr	Ile	Glu	Glu	Gln	Met	Thr	His	Arg	Lys
	1685					1690					1695			
Met	Ile	Leu	Leu	Gln	Glu	Glu	Ser	Asp	Lys	Phe	Lys	Arg	Ser	Ala
	1700					1705					1710			
Asp	Glu	Phe	Arg	Lys	Lys	Met	Glu	Lys	Leu	Met	Glu	Ser	Lys	Val
	1715					1720					1725			
Val	Thr	Glu	Thr	Asp	Leu	Ser	Gly	Ile	Lys	His	Asp	Phe	Val	Ser
	1730					1735					1740			
Leu	Gln	Arg	Glu	Asn	Phe	Arg	Ala	Gln	Glu	Asn	Ala	Lys	Leu	Trp
	1745					1750					1755			

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Glu	Thr	Asn	Ile	Arg	Glu	Leu	Glu	Arg	Gln	Leu	Gln	Cys	Tyr	Arg
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Glu	Lys	Met	Gln	Gln	Gly	Pro	Pro	Val	Glu	Ala	Asn	His	Tyr	Gln
	1775					1780					1785			
Lys	Cys	Arg	Arg	Leu	Glu	Glu	Glu	Leu	Leu	Ala	Gln	Arg	Arg	Glu
	1790					1795					1800			
Val	Glu	Asn	Leu	Lys	Gln	Lys	Met	Asp	Gln	Gln	Ile	Lys	Glu	His
	1805					1810					1815			
Glu	His	Gln	Leu	Leu	Arg	Leu	Gln	Cys	Glu	Ile	Gln	Lys	Lys	Ser
	1820					1825					1830			
Thr	Thr	Gln	Asp	His	Thr	Phe	Ala	Ser	Ala	Phe	Asp	Thr	Ala	Gly
	1835					1840					1845			
Arg	Glu	Cys	His	His	Pro	Ala	Glu	Ile	Ser	Pro	Gly	Asn	Ser	Gly
	1850					1855					1860			
His	Leu	Asn	Leu	Lys	Thr	Arg	Leu	Pro	Leu	Ser	Arg	Trp	Thr	Gln
	1865					1870					1875			
Glu	Pro	His	Gln	Thr	Glu	Gly	Lys	Trp	Pro	His	Arg	Ala	Ala	Glu
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Gln	Leu	Pro	Lys	Glu	Val	Gln	Phe	Arg	Gln	Pro	Gly	Ala	Pro	Leu
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Asp	Arg	Glu	Ser	Ser	Gln	Pro	Cys	Tyr	Ser	Glu	Tyr	Phe	Ser	Gln
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Thr	Ser	Thr	Glu	Leu	Gln	Ile	Thr	Phe	Asp	Asp	Lys	Asn	Pro	Ile
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Thr	Arg	Leu	Ser	Glu	Leu	Glu	Thr	Met	Arg	Glu	Gln	Ala	Leu	His
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Pro	Ser	Arg	Pro	Pro	Val	Thr	Tyr	Gln	Asp	Asp	Lys	Leu	Glu	Arg
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Glu	Leu	Val	Lys	Leu	Leu	Thr	Pro	Leu	Glu	Ile	Ala	Lys	Asn	Lys
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Gln	Cys	Gly	Met	His	Thr	Glu	Val	Thr	Thr	Leu	Lys	Gln	Glu	Lys
	1985					1990					1995			
Arg	Leu	Gly	Ser	Ser	Ala	Gly	Gly	Trp	Met	Leu	Glu	Gly	Cys	Arg
	2000					2005					2010			

Thr	Ser	Gly	Gly	Leu	Lys	Gly	Asp	Phe	Leu	Lys	Lys	Ser	Val	Glu
	2015					2020					2025			
Pro	Glu	Ala	Ser	Pro	Ser	Leu	Asp	Leu	Asn	Gln	Ala	Cys	Ser	Val
	2030					2035					2040			
Arg	Asp	Glu	Glu	Phe	Gln	Phe	Gln	Gly	Leu	Arg	His	Thr	Val	Thr
	2045					2050					2055			
Gly	Arg	Gln	Leu	Val	Glu	Ala	Lys	Leu	Leu	Asp	Met	Arg	Thr	Val
	2060					2065					2070			
Glu	Gln	Leu	Arg	Leu	Gly	Leu	Lys	Thr	Val	Glu	Glu	Val	Gln	Arg
	2075					2080					2085			
Ser	Leu	Ser	Lys	Phe	Leu	Thr	Lys	Ala	Thr	Ser	Ile	Ala	Gly	Leu
	2090					2095					2100			
Tyr	Leu	Glu	Ser	Ser	Lys	Glu	Lys	Met	Ser	Phe	Thr	Ser	Ala	Ala
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Gln	Lys	Ile	Ile	Ile	Asp	Lys	Met	Ile	Ala	Leu	Ala	Phe	Leu	Glu
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Ala	Gln	Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro	Val	Ser	Gly	Gln
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Thr	Tyr	Cys	Val	Glu	Asp	Ala	Val	Leu	His	Gly	Ile	Val	Asp	Pro
	2150					2155					2160			
Glu	Phe	Arg	Ser	Arg	Leu	Leu	Glu	Ala	Glu	Lys	Ala	Val	Leu	Gly
	2165					2170					2175			
Tyr	Ser	His	Ala	Ser	Lys	Thr	Leu	Ser	Val	Phe	Gln	Ala	Met	Glu
	2180					2185					2190			
Asn	Arg	Met	Leu	Asp	Arg	Lys	Lys	Gly	Lys	His	Ile	Leu	Glu	Ala
	2195					2200					2205			
Gln	Ile	Ala	Ser	Gly	Gly	Val	Ile	Asp	Pro	Val	Arg	Gly	Val	Arg
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Val	Pro	Pro	Glu	Met	Ala	Val	Gln	Gln	Gly	Leu	Leu	Asn	Asn	Ala
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Val	Leu	Gln	Phe	Leu	His	Glu	Pro	Ser	Ser	Asn	Thr	Arg	Val	Phe
	2240					2245					2250			
Pro	Asn	Pro	Asn	Asn	Lys	Gln	Ala	Leu	Tyr	Tyr	Ser	Glu	Leu	Leu
	2255					2260					2265			
Gln	Ile	Cys	Val	Phe	Asp	Val	Asp	Cys	Gln	Cys	Phe	Leu	Leu	Pro

2270

2275

2280

Phe Gly Glu Arg Glu Ile Ser Asn Leu Asn Ile Glu Lys Thr His  
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Lys Ile Ala Val Val Asp Thr Lys Thr Gly Ala Glu Leu Thr Ala  
 2300 2305 2310

Phe Glu Ala Phe Gln Arg Asn Leu Ile Asp Lys Gly Ile Tyr Leu  
 2315 2320 2325

Glu Leu Ser Gly Gln Gln Tyr Gln Trp Lys Glu Ala Thr Phe Phe  
 2330 2335 2340

Asp Ser Tyr Gly His Pro Ser His Met Leu Thr Asp Thr Lys Thr  
 2345 2350 2355

Gly Leu Gln Phe Asn Ile Ser Glu Ala Val Glu Gln Gly Thr Leu  
 2360 2365 2370

Asp Lys Ala Leu Val Gln Lys Tyr Gln Glu Gly Leu Thr Thr Leu  
 2375 2380 2385

Thr Glu Leu Ala Asp Phe Leu Leu Ser Lys Val Val Pro Lys Lys  
 2390 2395 2400

Asp Leu His Ser Pro Ile Ala Gly Tyr Trp Leu Thr Ala Ser Gly  
 2405 2410 2415

Glu Arg Ile Ser Leu Leu Lys Ala Ser Arg Arg Asn Leu Val Asp  
 2420 2425 2430

Arg Val Thr Ala Leu Arg Cys Leu Glu Ala Gln Ile Cys Thr Gly  
 2435 2440 2445

Gly Ile Ile Asp Pro Leu Thr Gly Lys Lys Tyr Arg Val Ala Glu  
 2450 2455 2460

Ala Leu His Arg Gly Leu Val Asp Glu Gly Phe Ala Gln Gln Leu  
 2465 2470 2475

Arg Gln Cys Glu Leu Val Ile Thr Gly Ile Ser His Pro Val Ser  
 2480 2485 2490

Asn Lys Met Met Ser Val Val Glu Ala Val Asn Ala Asn Ile Ile  
 2495 2500 2505

Ser Lys Glu Met Gly Met Arg Cys Leu Glu Phe Gln Tyr Leu Thr  
 2510 2515 2520

Gly Gly Leu Ile Glu Pro Lys Val Phe Ser Arg Leu Thr Ile Glu  
 2525 2530 2535

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Glu Ala Leu His Val Gly Ile Ile Asp Val Leu Ile Ala Thr Arg  
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 Leu Lys Asp Gln Lys Ser Tyr Val Arg Asp Ile Met Cys Pro Gln  
 2555 2560 2565  
 Thr Lys Arg Lys Leu Thr Tyr Lys Glu Ala Leu Glu Lys Ala Asp  
 2570 2575 2580  
 Phe Asp Phe His Thr Gly Leu Lys Leu Leu Glu Val Ser Glu Pro  
 2585 2590 2595  
 Leu Gly Thr Gly Ile Ser Asn Leu Tyr Tyr Ser Ser Gln  
 2600 2605 2610

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<220>  
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<400> 107  
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 aag tac gcc att gag gat ggc gtc aac cag gca aca ctg acc cgc aca 96  
 Lys Tyr Ala Ile Glu Asp Gly Val Asn Gln Ala Thr Leu Thr Arg Thr  
 20 25 30  
 gag ctg aga cag ctc ctt gag gga gaa att ggg gac ttc ctt cag cca 144  
 Glu Leu Arg Gln Leu Leu Glu Gly Glu Ile Gly Asp Phe Leu Gln Pro  
 35 40 45  
 cat gtc ttt cat gct gtg gag aga aag ttg aac ctt ctg aat ttt gac 192  
 His Val Phe His Ala Val Glu Arg Lys Leu Asn Leu Leu Asn Phe Asp  
 50 55 60  
 aga gat ggt acc atc agt ttt gag gaa ttt gtt ctt gca atc ttc agc 240  
 Arg Asp Gly Thr Ile Ser Phe Glu Glu Phe Val Leu Ala Ile Phe Ser  
 65 70 75 80  
 tta ttg aat ccc tct tat ttt gac ata tca tta cta aat tca gaa cca 288  
 Leu Leu Asn Pro Ser Tyr Phe Asp Ile Ser Leu Leu Asn Ser Glu Pro  
 85 90 95  
 aga ctg atg tct aaa tca gag aag ata gat gct gtg gat ttg ggg gca 336  
 Arg Leu Met Ser Lys Ser Glu Lys Ile Asp Ala Val Asp Leu Gly Ala  
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 Ile Gly Gly Asn Ile Gln Gln Val Val Gly Val Gly Pro Thr Gln Glu  
 115 120 125  
 agg ctc ata ttt cca tca gaa atg gca tca tca ggt cag ccc agc aat 432  
 Arg Leu Ile Phe Pro Ser Glu Met Ala Ser Ser Gly Gln Pro Ser Asn  
 130 135 140

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att Ile	aag Lys	acc Thr	cac His	agc Ser 165	ctg Leu	cca Pro	aga Arg	aat Asn	gtg Val 170	tct Ser	gag Glu	cca Pro	aat Asn	gac Asp 175	cct Pro	528
gag Glu	aac Asn	caa Gln	cag Gln 180	cca Pro	aaa Lys	gaa Glu	gat Asp	gct Ala 185	cag Gln	gaa Glu	gtc Val	gca Ala	caa Gln 190	aat Asn	gta Val	576
cca Pro	gca Ala	act Thr 195	gaa Glu	tat Tyr	gat Asp	gga Gly	gtc Val 200	caa Gln	ttt Phe	aag Lys	aga Arg	aat Asn 205	aca Thr	gta Val	gtc Val	624
gaa Glu	gta Val 210	ccc Pro	aaa Lys	cag Gln	agc Ser	acc Thr 215	agt Ser	cca Pro	aca Thr	cag Gln	gag Glu 220	atc Ile	cca Pro	aga Arg	gaa Glu	672
aga Arg 225	agt Ser	aaa Lys	cca Pro	tcc Ser	agg Arg 230	agg Arg	cta Leu	agt Ser	gac Asp	acc Thr 235	aag Lys	ata Ile	agt Ser	gac Asp	cat His 240	720
atg Met	att Ile	cag Gln	agg Arg	cca Pro 245	act Thr	gaa Glu	gat Asp	gag Glu	gaa Glu 250	cat His	act Thr	tct Ser	aca Thr	aca Thr 255	caa Gln	768
gat Asp	cca Pro	ttc Phe	ctg Leu 260	caa Gln	aaa Lys	aga Arg	gac Asp	aaa Lys 265	gcc Ala	acc Thr	ggg Gly	tca Ser	gag Glu 270	aac Asn	act Thr	816
gat Asp	ttg Leu	tca Ser 275	gta Val	gta Val	gct Ala	gct Ala	acc Thr 280	agg Arg	aaa Lys	tca Ser	tct Ser	caa Gln 285	aca Thr	cag Gln	gaa Glu	864
att Ile	ttt Phe 290	gag Glu	cct Pro	atg Met	gat Asp	gat Asp 295	act Thr	aaa Lys	cta Leu	tct Ser	gag Glu 300	gct Ala	caa Gln	gaa Glu	act Thr	912
gga Gly 305	aag Lys	gat Asp	gct Ala	ggc Gly	aga Arg 310	ata Ile	cca Pro	cct Pro	gaa Glu	aca Thr 315	aat Asn	tta Leu	gag Glu	gag Glu	ccc Pro 320	960
caa Gln	gct Ala	gat Asp	gct Ala	aaa Lys 325	gta Val	gct Ala	gag Glu	agc Ser	cac His 330	gga Gly	ttg Leu	cca Pro	gca Ala	caa Gln 335	gaa Glu	1008
aga Arg	gaa Glu	cac His	aat Asn 340	aca Thr	agg Arg	gac Asp	cag Gln	tct Ser 345	gtt Val	caa Gln	agc Ser	cgg Arg	agc Ser 350	aga Arg	aat Asn	1056
gtt Val	tca Ser	gaa Glu 355	aca Thr	tct Ser	agt Ser	aga Arg	gga Gly 360	gaa Glu	cag Gln	gag Glu	ggg Gly	gag Glu 365	tgg Trp	aaa Lys	gaa Glu	1104
cat His	gaa Glu 370	aga Arg	ata Ile	act Thr	cta Leu	tcc Ser 375	cca Pro	aca Thr	gca Ala	gat Asp	gct Ala 380	gaa Glu	aca Thr	cag Gln	gat Asp	1152
gag Glu 385	aag Lys	tgt Cys	caa Gln	gaa Glu	ttt Phe 390	cca Pro	gga Gly	tca Ser	tgg Trp	agg Arg 395	gaa Glu	aac Asn	gat Asp	gcc Ala	aaa Lys 400	1200
aag Lys	gac Asp	tct Ser	gct Ala	gca Ala 405	aaa Lys	gat Asp	cca Pro	agt Ser	tct Ser 410	gaa Glu	gaa Glu	gga Gly	aat Asn	cag Gln 415	aat Asn	1248
ctc	cct	gaa	att	aag	gaa	gat	tct	gtc	tca	gga	aaa	gaa	gca	aga	cac	1296

Leu	Pro	Glu	Ile	Lys	Glu	Asp	Ser	Val	Ser	Gly	Lys	Glu	Ala	Arg	His		
			420					425					430				
agt	gag	gaa	gac	aca	gta	tat	gca	ttt	gaa	atc	aac	aaa	aac	agc	cct	1344	
Ser	Glu	Glu	Asp	Thr	Val	Tyr	Ala	Phe	Glu	Ile	Asn	Lys	Asn	Ser	Pro		
		435					440					445					
gca	gct	gaa	gag	aca	ttg	gaa	aca	aga	gaa	agg	tcc	cag	gag	ctg	gca	1392	
Ala	Ala	Glu	Glu	Thr	Leu	Glu	Thr	Arg	Glu	Arg	Ser	Gln	Glu	Leu	Ala		
	450					455					460						
cca	ctt	gag	aag	caa	tct	caa	aga	aaa	aag	cac	agg	gcc	acc	agg	att	1440	
Pro	Leu	Glu	Lys	Gln	Ser	Gln	Arg	Lys	Lys	His	Arg	Ala	Thr	Arg	Ile		
465					470					475					480		
cag	gac	aag	ccg	gtc	agg	aag	gag	gac	cac	aat	gag	gga	gaa	gat	tct	1488	
Gln	Asp	Lys	Pro	Val	Arg	Lys	Glu	Asp	His	Asn	Glu	Gly	Glu	Asp	Ser		
				485					490					495			
gag	tta	tca	ctt	aca	cag	agt	gat	gag	ggc	ttt	tgt	gaa	att	ccc	aac	1536	
Glu	Leu	Ser	Leu	Thr	Gln	Ser	Asp	Glu	Gly	Phe	Cys	Glu	Ile	Pro	Asn		
			500					505					510				
agc	ctg	gct	cca	gag	gta	ggt	aag	agc	agc	tca	gag	ata	gct	gaa	cca	1584	
Ser	Leu	Ala	Pro	Glu	Val	Gly	Lys	Ser	Ser	Ser	Glu	Ile	Ala	Glu	Pro		
		515					520					525					
cat	gta	cca	gag	gat	tca	cag	agt	cag	ata	gac	cac	cat	gga	gat	gct	1632	
His	Val	Pro	Glu	Asp	Ser	Gln	Ser	Gln	Ile	Asp	His	His	Gly	Asp	Ala		
	530					535					540						
aag	caa	gaa	agt	cac	act	aac	aac	cca	gat	ccc	cag	aag	cag	gga	gca	1680	
Lys	Gln	Glu	Ser	His	Thr	Asn	Asn	Pro	Asp	Pro	Gln	Lys	Gln	Gly	Ala		
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cca	ggt	gag	agc	agc	aga	gag	cag	gag	gca	gta	gtg	ctg	tca	atc	caa	1728	
Pro	Gly	Glu	Ser	Ser	Arg	Glu	Gln	Glu	Ala	Val	Val	Leu	Ser	Ile	Gln		
				565					570					575			
gaa	gat	ggg	cag	ctc	cca	gag	gga	cag	gaa	cag	tct	gcc	aga	gat	ggt	1776	
Glu	Asp	Gly	Gln	Leu	Pro	Glu	Gly	Gln	Glu	Gln	Ser	Ala	Arg	Asp	Gly		
			580					585					590				
ctg	cat	gat	ggt	ctg	agc	tca	agg	acc	aaa	gga	ggc	cca	ggg	gca	gct	1824	
Leu	His	Asp	Gly	Leu	Ser	Ser	Arg	Thr	Lys	Gly	Gly	Pro	Gly	Ala	Ala		
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gtg	gag	ccc	agt	gag	gga	gag	gag	gta	cag	gag	gcc	aca	gca	ggg	aga	1872	
Val	Glu	Pro	Ser	Glu	Gly	Glu	Glu	Val	Gln	Glu	Ala	Thr	Ala	Gly	Arg		
	610					615					620						
gaa	aac	agg	aaa	gcc	cta	gag	gca	gag	agt	ttg	gag	gcc	cag			1914	
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Lys	Tyr	Ala	Ile	Glu	Asp	Gly	Val	Asn	Gln	Ala	Thr	Leu	Thr	Arg	Thr
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Glu Leu Arg Gln Leu Leu Glu Gly Glu Ile Gly Asp Phe Leu Gln Pro  
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 His Val Phe His Ala Val Glu Arg Lys Leu Asn Leu Leu Asn Phe Asp  
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 Arg Asp Gly Thr Ile Ser Phe Glu Glu Phe Val Leu Ala Ile Phe Ser  
 65                  70                  75                  80  
 Leu Leu Asn Pro Ser Tyr Phe Asp Ile Ser Leu Leu Asn Ser Glu Pro  
           85                  90                  95  
 Arg Leu Met Ser Lys Ser Glu Lys Ile Asp Ala Val Asp Leu Gly Ala  
          100                 105                 110  
 Ile Gly Gly Asn Ile Gln Gln Val Val Gly Val Gly Pro Thr Gln Glu  
          115                 120                 125  
 Arg Leu Ile Phe Pro Ser Glu Met Ala Ser Ser Gly Gln Pro Ser Asn  
 130                 135                 140  
 Glu Glu Gly Glu Val Gly Asp Glu Pro Met Val Ser Pro Cys Glu Asp  
 145                 150                 155                 160  
 Ile Lys Thr His Ser Leu Pro Arg Asn Val Ser Glu Pro Asn Asp Pro  
          165                 170                 175  
 Glu Asn Gln Gln Pro Lys Glu Asp Ala Gln Glu Val Ala Gln Asn Val  
          180                 185                 190  
 Pro Ala Thr Glu Tyr Asp Gly Val Gln Phe Lys Arg Asn Thr Val Val  
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 Glu Val Pro Lys Gln Ser Thr Ser Pro Thr Gln Glu Ile Pro Arg Glu  
 210                 215                 220  
 Arg Ser Lys Pro Ser Arg Arg Leu Ser Asp Thr Lys Ile Ser Asp His  
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 Met Ile Gln Arg Pro Thr Glu Asp Glu Glu His Thr Ser Thr Thr Gln  
          245                 250                 255  
 Asp Pro Phe Leu Gln Lys Arg Asp Lys Ala Thr Gly Ser Glu Asn Thr  
          260                 265                 270  
 Asp Leu Ser Val Val Ala Ala Thr Arg Lys Ser Ser Gln Thr Gln Glu  
          275                 280                 285  
 Ile Phe Glu Pro Met Asp Asp Thr Lys Leu Ser Glu Ala Gln Glu Thr  
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Gly Lys Asp Ala Gly Arg Ile Pro Pro Glu Thr Asn Leu Glu Glu Pro  
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Gln Ala Asp Ala Lys Val Ala Glu Ser His Gly Leu Pro Ala Gln Glu  
325 330 335

Arg Glu His Asn Thr Arg Asp Gln Ser Val Gln Ser Arg Ser Arg Asn  
340 345 350

Val Ser Glu Thr Ser Ser Arg Gly Glu Gln Glu Gly Glu Trp Lys Glu  
355 360 365

His Glu Arg Ile Thr Leu Ser Pro Thr Ala Asp Ala Glu Thr Gln Asp  
370 375 380

Glu Lys Cys Gln Glu Phe Pro Gly Ser Trp Arg Glu Asn Asp Ala Lys  
385 390 395 400

Lys Asp Ser Ala Ala Lys Asp Pro Ser Ser Glu Glu Gly Asn Gln Asn  
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Leu Pro Glu Ile Lys Glu Asp Ser Val Ser Gly Lys Glu Ala Arg His  
420 425 430

Ser Glu Glu Asp Thr Val Tyr Ala Phe Glu Ile Asn Lys Asn Ser Pro  
435 440 445

Ala Ala Glu Glu Thr Leu Glu Thr Arg Glu Arg Ser Gln Glu Leu Ala  
450 455 460

Pro Leu Glu Lys Gln Ser Gln Arg Lys Lys His Arg Ala Thr Arg Ile  
465 470 475 480

Gln Asp Lys Pro Val Arg Lys Glu Asp His Asn Glu Gly Glu Asp Ser  
485 490 495

Glu Leu Ser Leu Thr Gln Ser Asp Glu Gly Phe Cys Glu Ile Pro Asn  
500 505 510

Ser Leu Ala Pro Glu Val Gly Lys Ser Ser Ser Glu Ile Ala Glu Pro  
515 520 525

His Val Pro Glu Asp Ser Gln Ser Gln Ile Asp His His Gly Asp Ala  
530 535 540

Lys Gln Glu Ser His Thr Asn Asn Pro Asp Pro Gln Lys Gln Gly Ala  
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Pro Gly Glu Ser Ser Arg Glu Gln Glu Ala Val Val Leu Ser Ile Gln  
565 570 575

Glu Asp Gly Gln Leu Pro Glu Gly Gln Glu Gln Ser Ala Arg Asp Gly  
580 585 590

Leu His Asp Gly Leu Ser Ser Arg Thr Lys Gly Gly Pro Gly Ala Ala  
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Ser Asp Ser Gly Phe Ala Ile Tyr Leu Arg Leu Asn Lys Arg Phe Glu	
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cac ctc ctg tca gct cac agc cgc tgc ccc aca ttc cac ttg ctc tca	144
His Leu Leu Ser Ala His Ser Arg Cys Pro Thr Phe His Leu Leu Ser	
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Leu Glu Asn Lys Ser Pro Glu Phe Val Lys Met Pro Gln Leu Leu Arg	
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gac atc ctc tgt gta att gag aca ttc cac aag tac gcc agg gag gat	240
Asp Ile Leu Cys Val Ile Glu Thr Phe His Lys Tyr Ala Arg Glu Asp	
65 70 75 80	
gca gcg acg ctg acc tgc aca gag ctg aaa cag ctc atc cag agc gaa	288
Ala Ala Thr Leu Thr Cys Thr Glu Leu Lys Gln Leu Ile Gln Ser Glu	
85 90 95	
ttt gag gac att ttt cag cca tgt gcc atc cac gct gtg gag aga aac	336
Phe Glu Asp Ile Phe Gln Pro Cys Ala Ile His Ala Val Glu Arg Asn	
100 105 110	
ttg aat ctt ctg aat atc gac agt aat ggc gcc atc agc ttt gat gaa	384
Leu Asn Leu Leu Asn Ile Asp Ser Asn Gly Ala Ile Ser Phe Asp Glu	
115 120 125	
ttt gtt ctt gca atc ttc agc ttt ttg aat gtc tgt tac ctt gac aca	432
Phe Val Leu Ala Ile Phe Ser Phe Leu Asn Val Cys Tyr Leu Asp Thr	
130 135 140	
cag tca tta cta aac tca gaa cca aga caa gta tct aaa cca gag ggg	480
Gln Ser Leu Leu Asn Ser Glu Pro Arg Gln Val Ser Lys Pro Glu Gly	
145 150 155 160	
atg cca cat gat atg ggt ctt cag gtg acg aat gaa act gac cag tgg	528
Met Pro His Asp Met Gly Leu Gln Val Thr Asn Glu Thr Asp Gln Trp	

aca Thr	gaa Glu	gga Gly	act Thr 180	tca Ser	caa Gln	act Thr	caa Gln	gac Asp 185	aaa Lys	gtg Val	gtg Val	ctt Leu	cct Pro 190	tca Ser	gga Gly	576
acg Thr	gca Ala	tca Ser 195	tca Ser	act Thr	cat His	ctc Leu	agc Ser 200	ctc Leu	gaa Glu	gag Glu	aga Arg	gca Ala 205	gtt Val	gaa Glu	cac His	624
aat Asn 210	agg Arg	gtg Val	gac Asp	cca Pro	cag Gln	gga Gly 215	cat His	acc Thr	aca Thr	gct Ala	cac His 220	aaa Lys	cta Leu	cca Pro	gta Val	672
gaa Glu 225	acg Thr	tct Ser	gaa Glu	cac His	agt Ser 230	gac Asp	tct Ser	aag Lys	aac Asn	caa Gln 235	cat His	ctg Leu	aaa Lys	gga Gly	gat Asp 240	720
gaa Glu	cag Gln	agc Ser	cag Gln	aaa Lys 245	gtg Val	gac Asp	caa Gln	gat Asp	gta Val 250	tca Ser	gca Ala	aca Thr	ggt Gly	gac Asp 255	agt Ser	768
aga Arg	acc Thr	caa Gln	cgt Arg 260	gag Glu	aca Thr	agt Ser	aag Lys	cca Pro 265	atg Met	gca Ala	gga Gly	tca Ser	gaa Glu 270	cag Gln	atc Ile	816
agc Ser	agt Ser	cac His 275	aca Thr	aag Lys	ggg Gly	gag Glu	gga Gly 280	cag Gln	aat Asn	aag Lys	gag Glu	att Ile 285	ctc Leu	cag Gln	aag Lys	864
gga Gly 290	gat Asp	ata Ile	cta Leu	gcc Ala	agg Arg	aaa Lys 295	caa Gln	agt Ser	ggc Gly	act Thr	gag Glu 300	aca Thr	gga Gly	gga Gly	cgg Arg	912
ttt Phe 305	gga Gly	gaa Glu	cag Gln	gaa Glu	ggg Gly 310	agc Ser	ttg Leu	gga Gly	atc Ile	ctg Leu 315	cat His	tct Ser	cca Pro	ctg Leu	gaa Glu 320	960
gaa Glu	acc Thr	aca Thr	cag Gln	agg Arg 325	cct Pro	ggt Gly	gga Gly	tca Ser	tct Ser 330	gag Glu	gat Asp	cag Gln	gaa Glu	gtt Val 335	gca Ala	1008
gga Gly	gag Glu	aag Lys	ggt Gly 340	gtt Val	aag Lys	gga Gly	cac His	cct Pro 345	aaa Lys	tca Ser	caa Gln	gaa Glu	cca Pro 350	tca Ser	gta Val	1056
cag Gln	gga Gly	aaa Lys 355	gat Asp	gag Glu	ccc Pro	agt Ser	tca Ser 360	gaa Glu	cat His	gtc Val	gac Asp	ctg Leu 365	cca Pro	aaa Lys	caa Gln	1104
gct Ala 370	gct Ala	gct Ala	cgg Arg	aaa Lys	cca Pro	tct Ser 375	cag Gln	aca Thr	cag Gln	aaa Lys	tca Ser 380	gct Ala	gct Ala	gcc Ala	aag Lys	1152
gat Asp 385	gag Glu	agt Ser	aga Arg	aca Thr	gct Ala 390	gag Glu	act Thr	cca Pro	gaa Glu	cca Pro 395	ccc Pro	ata Ile	caa Gln	gaa Glu	aaa Lys 400	1200
gaa Glu	tat Tyr	gaa Glu	aca Thr	agg Arg 405	gac Asp	ttg Leu	tca Ser	gtc Val	caa Gln 410	ggt Gly	gag Glu	aac Asn	aga Arg	aat Asn 415	gtt Val	1248
tca Ser	gaa Glu	aca Thr	ccc Pro 420	atg Met	gtt Val	aga Arg	gtt Val	gaa Glu 425	agg Arg	aag Lys	ggt Gly	gta Val 430	aga Arg	ggt Gly	cca Pro	1296
gag Glu	gtc Val	cat His 435	caa Gln	aca Thr	gta Val	ggg Gly	cag Gln 440	aaa Lys	caa Gln	att Ile	gag Glu	gaa Glu 445	aaa Lys	act Thr	cag Gln	1344

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cca Pro	cca Pro 450	gct Ala	ctg Leu	gaa Glu	gag Glu	cca Pro 455	aca Thr	gaa Glu	gat Asp	aag Lys	aag Lys 460	tat Tyr	cat His	gaa Glu	ctc Leu	1392
cag Gln 465	gaa Glu	tca Ser	tca Ser	aaa Lys	gaa Glu 470	aag Lys	aat Asn	gct Ala	gga Gly	gaa Glu 475	gat Asp	tct Ser	gag Glu	aca Thr	cat His 480	1440
gag Glu	tta Leu	aac Asn	tca Ser	gaa Glu 485	gga Gly	gga Gly	gaa Glu	cag Gln	aaa Lys 490	gat Asp	tcc Ser	gaa Glu	agt Ser	gaa Glu 495	gga Gly	1488
gcc Ala	atc Ile	agc Ser	cca Pro 500	gga Gly	gaa Glu	gag Glu	gca Ala	aga Arg 505	cat His	gct Ala	gag Glu	gaa Glu	ggc Gly 510	aca Thr	gca Ala	1536
gaa Glu	gca Ala	ctt Leu 515	gtg Val	aac Asn	agt Ser	aaa Lys	aat Asn 520	gcc Ala	cct Pro	gaa Glu	gca Ala	gaa Glu 525	ggg Gly	aca Thr	cca Pro	1584
gga Gly	aca Thr 530	aga Arg	gaa Glu	aga Arg	ata Ile	tgg Trp 535	gag Glu	ttg Leu	aca Thr	aca Thr	ctt Leu 540	gag Glu	aac Asn	caa Gln	tct Ser	1632
gga Gly 545	gaa Glu	aaa Lys	aat Asn	aag Lys	atg Met 550	acc Thr	acc Thr	aaa Lys	att Ile	cat His 555	gac Asp	aag Lys	ttg Leu	gtc Val	aag Lys 560	1680
gaa Glu	gat Asp	gac Asp	ggc Gly	tac Tyr 565	cag Gln	ggg Gly	gaa Glu	ggt Gly	tct Ser 570	gag Glu	cca Pro	gtg Val	gcc Ala	aca Thr 575	cag Gln	1728
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ggt Gly	gac Asp	agc Ser 595	aac Asn	tca Ser	gag Glu	aca Thr	agt Ser 600	gat Asp	ctg Leu	ttt Phe	gtg Val	caa Gln 605	ggg Gly	gat Asp	tcc Ser	1824
caa Gln 610	agt Ser	caa Gln	aca Thr	aac Asn	cca Pro	ttc Phe 615	aga Arg	ggg Gly	tct Ser	gtg Val	caa Gln 620	gga Gly	agt Ser	gac Asp	agt Ser	1872
aat Asn 625	aac Asn	cca Pro	gaa Glu	act Thr	cag Gln 630	aaa Lys	cac His	tta Leu	gca Ala	ctg Leu 635	agt Ser	gag Glu	gaa Glu	aag Lys	aga Arg 640	1920
gtt Val	cag Gln	gag Glu	gca Ala	gca Ala 645	gtg Val	ctg Leu	gca Ala	gtc Val	aga Arg 650	gga Gly	gag Glu	gat Asp	gag Glu	cag Gln 655	gtc Val	1968
aca Thr	gag Glu	gaa Glu	cat His 660	gca Ala	cag Gln	gag Glu	cac His	gag Glu 665	ggt Gly	cag Gln	ggc Gly	tca Ser	gcg Ala 670	aca Thr	aca Thr	2016
ggc Gly	cga Arg	ggc Gly 675	cca Pro	gct Ala	gtg Val	gag Glu	ccc Pro 680	agg Arg	gga Gly	cac His	tcc Ser	gac Asp 685	acg Thr	cag Gln	gtg Val	2064
ttc Phe 690	ata Ile	gtg Val	aga Arg	gat Asp	gaa Glu	aac Asn 695	aca Thr	aag Lys	tcc Ser	ctg Leu	gag Glu 700	cca Pro	ggg Gly	atc Ile	cca Pro	2112
ggt Gly 705	gcc Ala	cca Pro	aat Asn	gca Ala	ggc Gly 710	atc Ile	acc Thr	aaa Lys	cag Gln	ctt Leu 715	tcc Ser	gta Val	agg Arg	caa Gln	ctc Leu 720	2160

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Thr	Lys	Lys	Glu	Glu	Asp	Gly	Ala	Leu	Glu	Ala	Gln	Glu	Asp	Leu	Val	
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aaa	agt	ctg	gat	gag	aac	aat	gca	gtc	tcc	caa	aag	aca	tgc	cct	gca	2304
Lys	Ser	Leu	Asp	Glu	Asn	Asn	Ala	Val	Ser	Gln	Lys	Thr	Cys	Pro	Ala	
		755					760					765				
aca	ctg	gag	gag	gag	act	gaa	agc	ccc	caa	cag	ctg	gca	gga	gaa	caa	2352
Thr	Leu	Glu	Glu	Glu	Thr	Glu	Ser	Pro	Gln	Gln	Leu	Ala	Gly	Glu	Gln	
	770					775					780					
agt	ctc	tct	aca	aaa	gaa	cat	gat	cct	tca	gtc	tct	gag	tca	ggc	ctt	2400
Ser	Leu	Ser	Thr	Lys	Glu	His	Asp	Pro	Ser	Val	Ser	Glu	Ser	Gly	Leu	
	785				790					795					800	
gaa	gag	agg	atg	cag	aga	gac	caa	gaa	ctc	tgt	ttg	gtg	gag	aga	ggc	2448
Glu	Glu	Arg	Met	Gln	Arg	Asp	Gln	Glu	Leu	Cys	Leu	Val	Glu	Arg	Gly	
				805					810					815		
gca	gaa	cac	tct	agt	ccc	ctg	tac	gag	gcc	ctg	cag	gag	aag	atg	ctg	2496
Ala	Glu	His	Ser	Ser	Pro	Leu	Tyr	Glu	Ala	Leu	Gln	Glu	Lys	Met	Leu	
			820					825					830			
cag	caa	aca	aac	gta	acc	caa	ggg	aag	cat	caa	aat	caa	gct	cag	aca	2544
Gln	Gln	Thr	Asn	Val	Thr	Gln	Gly	Lys	His	Gln	Asn	Gln	Ala	Gln	Thr	
		835					840					845				
gcc	agt	gta	gca	agc	cca	gag	atc	cgc	aga	aac	cag	tcg	agt	gca	tcc	2592
Ala	Ser	Val	Ala	Ser	Pro	Glu	Ile	Arg	Arg	Asn	Gln	Ser	Ser	Ala	Ser	
	850					855					860					
ctc	acc	aat	gac	agc	tca	gat	ggc	ctt	gtc	ttt	ttt	att	gac	aga	caa	2640
Leu	Thr	Asn	Asp	Ser	Ser	Asp	Gly	Leu	Val	Phe	Phe	Ile	Asp	Arg	Gln	
	865				870					875					880	
gca	cta	caa	aag	tac	atc	agg	gag	ttt	ctg	cct	gat	gag	gat	cct	act	2688
Ala	Leu	Gln	Lys	Tyr	Ile	Arg	Glu	Phe	Leu	Pro	Asp	Glu	Asp	Pro	Thr	
				885				890						895		
ggc	gca	cag	caa	ata	tca	gct	ccc	cag	gcc	ttg	gaa	gat	aag	cag	ggc	2736
Gly	Ala	Gln	Gln	Ile	Ser	Ala	Pro	Gln	Ala	Leu	Glu	Asp	Lys	Gln	Gly	
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cgc	cct	caa	aga	gag	gaa	cta	gaa	cca	caa	aag	gaa	gca	agc	act	cca	2784
Arg	Pro	Gln	Arg	Glu	Glu	Leu	Glu	Pro	Gln	Lys	Glu	Ala	Ser	Thr	Pro	
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Lys	Gln															
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Ser	Asp	Ser	Gly	Phe	Ala	Ile	Tyr	Leu	Arg	Leu	Asn	Lys	Arg	Phe	Glu
Seite 642															

His Leu Leu Ser Ala His Ser Arg Cys Pro Thr Phe His Leu Leu Ser  
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Leu Glu Asn Lys Ser Pro Glu Phe Val Lys Met Pro Gln Leu Leu Arg  
50 55 60

Asp Ile Leu Cys Val Ile Glu Thr Phe His Lys Tyr Ala Arg Glu Asp  
65 70 75 80

Ala Ala Thr Leu Thr Cys Thr Glu Leu Lys Gln Leu Ile Gln Ser Glu  
85 90 95

Phe Glu Asp Ile Phe Gln Pro Cys Ala Ile His Ala Val Glu Arg Asn  
100 105 110

Leu Asn Leu Leu Asn Ile Asp Ser Asn Gly Ala Ile Ser Phe Asp Glu  
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Phe Val Leu Ala Ile Phe Ser Phe Leu Asn Val Cys Tyr Leu Asp Thr  
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Gln Ser Leu Leu Asn Ser Glu Pro Arg Gln Val Ser Lys Pro Glu Gly  
145 150 155 160

Met Pro His Asp Met Gly Leu Gln Val Thr Asn Glu Thr Asp Gln Trp  
165 170 175

Thr Glu Gly Thr Ser Gln Thr Gln Asp Lys Val Val Leu Pro Ser Gly  
180 185 190

Thr Ala Ser Ser Thr His Leu Ser Leu Glu Glu Arg Ala Val Glu His  
195 200 205

Asn Arg Val Asp Pro Gln Gly His Thr Thr Ala His Lys Leu Pro Val  
210 215 220

Glu Thr Ser Glu His Ser Asp Ser Lys Asn Gln His Leu Lys Gly Asp  
225 230 235 240

Glu Gln Ser Gln Lys Val Asp Gln Asp Val Ser Ala Thr Gly Asp Ser  
245 250 255

Arg Thr Gln Arg Glu Thr Ser Lys Pro Met Ala Gly Ser Glu Gln Ile  
260 265 270

Ser Ser His Thr Lys Gly Glu Gly Gln Asn Lys Glu Ile Leu Gln Lys  
275 280 285

Gly Asp Ile Leu Ala Arg Lys Gln Ser Gly Thr Glu Thr Gly Gly Arg  
290 295 300

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Phe Gly Glu Gln Glu Gly Ser Leu Gly Ile Leu His Ser Pro Leu Glu  
 305 310 315 320  
 Glu Thr Thr Gln Arg Pro Gly Gly Ser Ser Glu Asp Gln Glu Val Ala  
 325 330 335  
 Gly Glu Lys Gly Val Lys Gly His Pro Lys Ser Gln Glu Pro Ser Val  
 340 345 350  
 Gln Gly Lys Asp Glu Pro Ser Ser Glu His Val Asp Leu Pro Lys Gln  
 355 360 365  
 Ala Ala Ala Arg Lys Pro Ser Gln Thr Gln Lys Ser Ala Ala Ala Lys  
 370 375 380  
 Asp Glu Ser Arg Thr Ala Glu Thr Pro Glu Pro Pro Ile Gln Glu Lys  
 385 390 395 400  
 Glu Tyr Glu Thr Arg Asp Leu Ser Val Gln Gly Glu Asn Arg Asn Val  
 405 410 415  
 Ser Glu Thr Pro Met Val Arg Val Glu Arg Lys Gly Val Arg Gly Pro  
 420 425 430  
 Glu Val His Gln Thr Val Gly Gln Lys Gln Ile Glu Glu Lys Thr Gln  
 435 440 445  
 Pro Pro Ala Leu Glu Glu Pro Thr Glu Asp Lys Lys Tyr His Glu Leu  
 450 455 460  
 Gln Glu Ser Ser Lys Glu Lys Asn Ala Gly Glu Asp Ser Glu Thr His  
 465 470 475 480  
 Glu Leu Asn Ser Glu Gly Gly Glu Gln Lys Asp Ser Glu Ser Glu Gly  
 485 490 495  
 Ala Ile Ser Pro Gly Glu Glu Ala Arg His Ala Glu Glu Gly Thr Ala  
 500 505 510  
 Glu Ala Leu Val Asn Ser Lys Asn Ala Pro Glu Ala Glu Gly Thr Pro  
 515 520 525  
 Gly Thr Arg Glu Arg Ile Trp Glu Leu Thr Thr Leu Glu Asn Gln Ser  
 530 535 540  
 Gly Glu Lys Asn Lys Met Thr Thr Lys Ile His Asp Lys Leu Val Lys  
 545 550 555 560  
 Glu Asp Asp Gly Tyr Gln Gly Glu Gly Ser Glu Pro Val Ala Thr Gln  
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Asn Asp Glu Arg Ser Pro Glu Thr Pro Asn Ser Leu Thr Ala Glu Asp  
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 Gly Asp Ser Asn Ser Glu Thr Ser Asp Leu Phe Val Gln Gly Asp Ser  
 595 600 605  
 Gln Ser Gln Thr Asn Pro Phe Arg Gly Ser Val Gln Gly Ser Asp Ser  
 610 615 620  
 Asn Asn Pro Glu Thr Gln Lys His Leu Ala Leu Ser Glu Glu Lys Arg  
 625 630 635 640  
 Val Gln Glu Ala Ala Val Leu Ala Val Arg Gly Glu Asp Glu Gln Val  
 645 650 655  
 Thr Glu Glu His Ala Gln Glu His Glu Gly Gln Gly Ser Ala Thr Thr  
 660 665 670  
 Gly Arg Gly Pro Ala Val Glu Pro Arg Gly His Ser Asp Thr Gln Val  
 675 680 685  
 Phe Ile Val Arg Asp Glu Asn Thr Lys Ser Leu Glu Pro Gly Ile Pro  
 690 695 700  
 Gly Ala Pro Asn Ala Gly Ile Thr Lys Gln Leu Ser Val Arg Gln Leu  
 705 710 715 720  
 Pro Thr Lys Lys Asp Ser Arg Lys Glu Leu Lys Asp Gln Ser Pro Ser  
 725 730 735  
 Thr Lys Lys Glu Glu Asp Gly Ala Leu Glu Ala Gln Glu Asp Leu Val  
 740 745 750  
 Lys Ser Leu Asp Glu Asn Asn Ala Val Ser Gln Lys Thr Cys Pro Ala  
 755 760 765  
 Thr Leu Glu Glu Glu Thr Glu Ser Pro Gln Gln Leu Ala Gly Glu Gln  
 770 775 780  
 Ser Leu Ser Thr Lys Glu His Asp Pro Ser Val Ser Glu Ser Gly Leu  
 785 790 795 800  
 Glu Glu Arg Met Gln Arg Asp Gln Glu Leu Cys Leu Val Glu Arg Gly  
 805 810 815  
 Ala Glu His Ser Ser Pro Leu Tyr Glu Ala Leu Gln Glu Lys Met Leu  
 820 825 830  
 Gln Gln Thr Asn Val Thr Gln Gly Lys His Gln Asn Gln Ala Gln Thr  
 835 840 845

Ala Ser Val Ala Ser Pro Glu Ile Arg Arg Asn Gln Ser Ser Ala Ser  
850 855 860

Leu Thr Asn Asp Ser Ser Asp Gly Leu Val Phe Phe Ile Asp Arg Gln  
865 870 875 880

Ala Leu Gln Lys Tyr Ile Arg Glu Phe Leu Pro Asp Glu Asp Pro Thr  
885 890 895

Gly Ala Gln Gln Ile Ser Ala Pro Gln Ala Leu Glu Asp Lys Gln Gly  
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Lys Gln  
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Lys Tyr Ala Ser Glu Asp Ser Asn Gly Ala Thr Leu Thr Gly Arg Glu  
20 25 30  
ctg aaa caa ctc atc cag ggc gag ttt ggg gac ttt ttt cag ccc tgt 144  
Leu Lys Gln Leu Ile Gln Gly Glu Phe Gly Asp Phe Phe Gln Pro Cys  
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gtc ctt cat gct gtg gaa aaa aat tca aat ctt ctg aat att gac agt 192  
Val Leu His Ala Val Glu Lys Asn Ser Asn Leu Leu Asn Ile Asp Ser  
50 55 60  
aat ggc atc atc agt ttt gat gaa ttt gtt ctt gca atc ttc aac ttg 240  
Asn Gly Ile Ile Ser Phe Asp Glu Phe Val Leu Ala Ile Phe Asn Leu  
65 70 75 80  
ttg aac ctc tgt tat ctt gac ata aaa tca tta cta agt tct gaa cta 288  
Leu Asn Leu Cys Tyr Leu Asp Ile Lys Ser Leu Leu Ser Ser Glu Leu  
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Arg Gln Val Thr Lys Pro Glu Lys Glu Lys Leu Asp Asp Val Asp Val  
100 105 110  
cag gca acc acc gga gat ggt cag tgg aca gtg gga act tca cca act 384  
Gln Ala Thr Thr Gly Asp Gly Gln Trp Thr Val Gly Thr Ser Pro Thr  
115 120 125  
caa gaa aag agg atg ctt cct tca gga atg gca tca tca tct cag ctc 432  
Gln Glu Lys Arg Met Leu Pro Ser Gly Met Ala Ser Ser Ser Gln Leu  
130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365 370 375 380 385 390 395 400 405 410 415 420 425 430 435 440 445 450 455 460 465 470 475 480 485 490 495 500 505 510 515 520 525 530 535 540 545 550 555 560 565 570 575 580 585 590 595 600 605 610 615 620 625 630 635 640 645 650 655 660 665 670 675 680 685 690 695 700 705 710 715 720 725 730 735 740 745 750 755 760 765 770 775 780 785 790 795 800 805 810 815 820 825 830 835 840 845 850 855 860 865 870 875 880 885 890 895 900 905 910 915 920 925 930 935 940 945 950 955 960 965 970 975 980 985 990 995

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gca Ala	ggt Val	gga Gly	
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gtg Val	gac Asp	cca Pro	
tgg Trp 160			
aga Arg	gaa Glu	gcc Ala	528
aag Lys	act Thr 165	cac His	
aac Asn	ttt Phe	cca Pro	
gga Gly 170	gaa Glu	gca Ala	
tct Ser	gaa Glu	cac His 175	
aat Asn			
gat Asp	cct Pro	aag Lys 180	576
aaa Lys	cac His	ctg Leu	
gaa Glu	gga Gly 185	gat Asp	
gaa Glu	caa Gln	agt Ser	
cag Gln 190	gaa Glu	gtg Val	
gct Ala	caa Gln 195	ata Ile	624
caa Gln	aca Thr	aca Thr	
gaa Glu 200	gac Asp	aat Asn	
gaa Glu	ggc Gly	caa Gln 205	
ctt Leu	aag Lys	aca Thr	
agg Arg			
aat Asn	aag Lys 210	cca Pro	672
atg Met	gca Ala	gga Gly	
tca Ser 215	aaa Lys	aag Lys	
acc Thr	agc Ser	agt Ser 220	
ccc Pro	aca Thr	gag Glu	
agg Arg			
aag Lys 225	gga Gly	caa Gln	720
gat Asp	aag Lys	gag Glu 230	
atc Ile	tcc Ser	cag Gln	
gaa Glu	gga Gly 235	gat Asp	
gaa Glu	cca Pro	gcc Ala	
aga Arg 240			
gag Glu	caa Gln	agt Ser	768
gtt Val	tcc Ser 245	aag Lys	
ata Ile	aga Arg	gac Asp	
cag Gln 250	ttt Phe	gga Gly	
gaa Glu	cag Gln 255	gga Gly	
aac Asn	ttg Leu	gca Ala 260	816
acc Thr	caa Gln	agt Ser	
tca Ser	cca Pro	cca Pro 265	
aaa Lys	gaa Glu	gca Ala	
aca Thr	caa Gln 270	aga Arg	
cca Pro			
tgt Cys	gaa Glu	gat Asp 275	864
cag Gln	gaa Glu	gtt Val	
aga Arg	aca Thr 280	gaa Glu	
aag Lys	gaa Glu	aaa Lys	
cac His 285	tct Ser	aat Asn	
ata Ile			
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ccc Pro	cta Leu	caa Gln	
aga Arg 295	gaa Glu	gat Asp	
gag Glu	ccc Pro	agt Ser 300	
tca Ser	cag Gln	cat His	
gct Ala			
gac Asp 305	ctg Leu	cca Pro	960
gaa Glu	caa Gln	gct Ala 310	
gct Ala	gcc Ala	agg Arg	
tca Ser	cca Pro 315	tct Ser	
cag Gln	aca Thr	cag Gln	
aaa Lys 320			
tca Ser	act Thr	caa Gln	1008
gaa Glu	cca Pro	gaa Glu 335	
gga Gly	aag Lys	gat Asp	
gct Ala 340	gac Asp	cag Gln	
aca Thr	cca Pro	gct Ala 345	
aaa Lys	aca Thr	aag Lys	
aat Asn	ttg Leu 350	ggt Gly	
gaa Glu			
cct Pro	gag Glu	gat Asp 355	1104
tat Tyr	ggc Gly	aga Arg	
aca Thr	tct Ser 360	gag Glu	
acc Thr	caa Gln	gaa Glu	
aaa Lys 365	gaa Glu	aaa Lys	
gaa Glu	tgt Cys	gaa Glu	
aca Thr 370	aag Lys	gac Asp	1152
ctg Leu	cca Pro	gtc Val	
caa Gln 375	tat Tyr	ggg Gly	
agc Ser	aga Arg	aat Asn 380	
ggg Gly	cct Pro	gag Glu	
gcc Ala	cat His 400		
tct Ser 385	gac Asp	atg Met	1200
aga Arg	gat Asp	gaa Glu 390	
agg Arg	aaa Lys	gag Glu	
agg Arg	aga Arg 395	ggg Gly	
cct Pro	gag Glu	gcc Ala	
gaa Glu	gaa Glu	gaa Glu	
gga Gly	aca Thr	gca Ala	1248
ggg Gly	cag Gln 405	aaa Lys	
gaa Glu	cgt Arg	gac Asp	
aga Arg 410	aaa Lys	act Thr	
cgg Arg	cca Pro	cta Leu 415	
gtc Val			

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ctg Leu	gaa Glu	acc Thr	caa Gln 420	aca Thr	cag Gln	gat Asp	ggg Gly	aag Lys 425	tat Tyr	cag Gln	gaa Glu	ctc Leu	caa Gln 430	gga Gly	tta Leu	1296
tca Ser	aaa Lys	tca Ser 435	aaa Lys	gat Asp	gct Ala	gaa Glu	aaa Lys 440	ggt Gly	tct Ser	gag Glu	aca Thr	caa Gln 445	tat Tyr	cta Leu	agc Ser	1344
tca Ser	gaa Glu 450	gga Gly	gga Gly	gat Asp	cag Gln	act Thr 455	cac His	cct Pro	gaa Glu	ctt Leu	gaa Glu 460	gga Gly	aca Thr	gca Ala	gtc Val	1392
tca Ser 465	gga Gly	gaa Glu	gag Glu	gca Ala	gaa Glu 470	cac His	acc Thr	aaa Lys	gaa Glu	ggc Gly 475	aca Thr	gca Ala	gaa Glu	gca Ala	ttt Phe 480	1440
gtg Val	aac Asn	agc Ser	aaa Lys	aac Asn 485	gca Ala	cct Pro	gca Ala	gca Ala	gaa Glu 490	agg Arg	aca Thr	ctg Leu	ggg Gly	gca Ala 495	aga Arg	1488
gaa Glu	aga Arg	aca Thr	caa Gln 500	gat Asp	tta Leu	gca Ala	cca Pro	ctt Leu 505	gag Glu	aag Lys	cag Gln	tct Ser	gta Val 510	gga Gly	gaa Glu	1536
aat Asn	act Thr	agg Arg 515	gtc Val	acc Thr	aag Lys	act Thr	cat His 520	gac Asp	caa Gln	cca Pro	gtt Val	gag Glu 525	gag Glu	gag Glu	gat Asp	1584
ggt Gly	tac Tyr 530	cag Gln	ggg Gly	gag Glu	gac Asp	cct Pro 535	gag Glu	tca Ser	cca Pro	ttc Phe	aca Thr 540	cag Gln	agt Ser	gat Asp	gag Glu	1632
ggg Gly 545	tct Ser	tct Ser	gaa Glu	act Thr	ccc Pro 550	aac Asn	agc Ser	ctg Leu	gct Ala	tca Ser 555	gag Glu	gaa Glu	ggc Gly	aat Asn	agc Ser 560	1680
agc Ser	tca Ser	gag Glu	aca Thr	ggt Gly 565	gaa Glu	ctg Leu	cct Pro	gtg Val	caa Gln 570	ggg Gly	gac Asp	tcc Ser	cag Gln	agt Ser 575	caa Gln	1728
ggg Gly	gac Asp	caa Gln	cat His 580	gga Gly	gag Glu	tct Ser	gtg Val	caa Gln 585	gga Gly	ggt Gly	cac His	aat Asn	aat Asn 590	aac Asn	cca Pro	1776
gat Asp	acc Thr	cag Gln 595	agg Arg	cag Gln	gga Gly	aca Thr	cct Pro 600	ggt Gly	gag Glu	aaa Lys	aac Asn	aga Arg 605	gct Ala	ctg Leu	gag Glu	1824
gca Ala	gtg Val 610	gta Val	cca Pro	gca Ala	gtc Val	aga Arg 615	gga Gly	gag Glu	gat Asp	gta Val	cag Gln 620	ctc Leu	aca Thr	gag Glu	gac Asp	1872
cag Gln 625	gaa Glu	cag Gln	cct Pro	gcc Ala	aga Arg 630	gga Gly	gaa Glu	cac His	aag Lys	aat Asn 635	caa Gln	ggc Gly	cca Pro	ggg Gly	acc Thr 640	1920
aaa Lys	ggc Gly	cca Pro	ggt Gly	gca Ala 645	gct Ala	gtg Val	gag Glu	ccc Pro	aat Asn 650	gga Gly	cac His	cca Pro	gaa Glu	gca Ala 655	cag Gln	1968
gaa Glu	tcc Ser	aca Thr	gca Ala 660	gga Gly	gat Asp	gaa Glu	aat Asn	aga Arg 665	aag Lys	tcc Ser	ctg Leu	gaa Glu	ata Ile 670	gag Glu	atc Ile	2016
aca Thr	ggt Gly	gcc Ala 675	ctg Leu	gat Asp	gaa Glu	gac Asp	ttc Phe 680	act Thr	gac Asp	cag Gln	ctt Leu	tcc Ser 685	cta Leu	atg Met	cag Gln	2064

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ctc	cct	gga	aag	gga	gat	agc	aga	aat	gaa	tta	aag	gtc	caa	ggc	cca	2112
Leu	Pro	Gly	Lys	Gly	Asp	Ser	Arg	Asn	Glu	Leu	Lys	Val	Gln	Gly	Pro	
	690					695					700					
agt	agc	aaa	gaa	gag	aaa	gga	aga	gca	aca	gag	gcc	cag	aat	act	ctg	2160
Ser	Ser	Lys	Glu	Glu	Lys	Gly	Arg	Ala	Thr	Glu	Ala	Gln	Asn	Thr	Leu	
705					710					715					720	
tta	gaa	agt	cta	gat	gag	gac	aat	tca	gcc	tcc	ctc	aag	ata	caa	ctt	2208
Leu	Glu	Ser	Leu	Asp	Glu	Asp	Asn	Ser	Ala	Ser	Leu	Lys	Ile	Gln	Leu	
				725					730					735		
gaa	aca	aag	gaa	cct	gta	aca	tca	gag	gag	gaa	gat	gaa	agt	ccc	caa	2256
Glu	Thr	Lys	Glu	Pro	Val	Thr	Ser	Glu	Glu	Glu	Asp	Glu	Ser	Pro	Gln	
			740					745					750			
gag	ctg	gca	gga	gaa	ggt	ggt	gac	caa	aaa	agt	cca	gcc	aag	aaa	gag	2304
Glu	Leu	Ala	Gly	Glu	Gly	Gly	Asp	Gln	Lys	Ser	Pro	Ala	Lys	Lys	Glu	
		755					760					765				
cac	aat	tct	tca	gtc	ccc	tgg	tca	agt	ctt	gaa	aag	cag	atg	cag	aga	2352
His	Asn	Ser	Ser	Val	Pro	Trp	Ser	Ser	Leu	Glu	Lys	Gln	Met	Gln	Arg	
	770					775					780					
gac	caa	gag	ccc	tgt	tct	gtg	gag	agg	ggt	gca	gtc	tat	tcc	agt	cca	2400
Asp	Gln	Glu	Pro	Cys	Ser	Val	Glu	Arg	Gly	Ala	Val	Tyr	Ser	Ser	Pro	
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cta	tac	cag	tac	cta	cag	gag	aag	ata	ctg	cag	caa	aca	aat	gta	acc	2448
Leu	Tyr	Gln	Tyr	Leu	Gln	Glu	Lys	Ile	Leu	Gln	Gln	Thr	Asn	Val	Thr	
				805					810					815		
caa	gag	gag	cat	caa	aag	caa	gtt	cag	ata	gcc	cag	gca	tca	ggc	cca	2496
Gln	Glu	Glu	His	Gln	Lys	Gln	Val	Gln	Ile	Ala	Gln	Ala	Ser	Gly	Pro	
			820					825					830			
gag	ctt	tgc	agt	gta	tcc	ctc	acc	agt	gag	atc	tca	gat	tgt	tct	gtc	2544
Glu	Leu	Cys	Ser	Val	Ser	Leu	Thr	Ser	Glu	Ile	Ser	Asp	Cys	Ser	Val	
		835					840					845				
ttt	ttc	aac	tac	agc	caa	gca	tca	caa	cca	tat	acc	agg	gga	ctt	cca	2592
Phe	Phe	Asn	Tyr	Ser	Gln	Ala	Ser	Gln	Pro	Tyr	Thr	Arg	Gly	Leu	Pro	
	850					855					860					
ctt	gat	gag	agt	cct	gct	ggt	gca	cag	gaa	aca	cca	gct	ccc	cag	gcc	2640
Leu	Asp	Glu	Ser	Pro	Ala	Gly	Ala	Gln	Glu	Thr	Pro	Ala	Pro	Gln	Ala	
					870					875					880	
ttg	gaa	gat	aag	caa	ggt	cac	cct	cag	aga	gag	agg	ctg	gta	cta	caa	2688
Leu	Glu	Asp	Lys	Gln	Gly	His	Pro	Gln	Arg	Glu	Arg	Leu	Val	Leu	Gln	
				885					890					895		
agg	gag	gca	agc	acc	aca	aag	caa									2712
Arg	Glu	Ala	Ser	Thr	Thr	Lys	Gln									
				900												

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 <212> PRT  
 <213> Homo sapiens  
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Lys Tyr Ala Ser Glu Asp Ser Asn Gly Ala Thr Leu Thr Gly Arg Glu  
 Seite 649

Leu Lys Gln Leu Ile Gln Gly Glu Phe Gly Asp Phe Phe Gln Pro Cys  
35 40 45

Val Leu His Ala Val Glu Lys Asn Ser Asn Leu Leu Asn Ile Asp Ser  
50 55 60

Asn Gly Ile Ile Ser Phe Asp Glu Phe Val Leu Ala Ile Phe Asn Leu  
65 70 75 80

Leu Asn Leu Cys Tyr Leu Asp Ile Lys Ser Leu Leu Ser Ser Glu Leu  
85 90 95

Arg Gln Val Thr Lys Pro Glu Lys Glu Lys Leu Asp Asp Val Asp Val  
100 105 110

Gln Ala Thr Thr Gly Asp Gly Gln Trp Thr Val Gly Thr Ser Pro Thr  
115 120 125

Gln Glu Lys Arg Met Leu Pro Ser Gly Met Ala Ser Ser Ser Gln Leu  
130 135 140

Ile Pro Glu Glu Ser Gly Ala Val Gly Asn Asn Arg Val Asp Pro Trp  
145 150 155 160

Arg Glu Ala Lys Thr His Asn Phe Pro Gly Glu Ala Ser Glu His Asn  
165 170 175

Asp Pro Lys Asn Lys His Leu Glu Gly Asp Glu Gln Ser Gln Glu Val  
180 185 190

Ala Gln Asp Ile Gln Thr Thr Glu Asp Asn Glu Gly Gln Leu Lys Thr  
195 200 205

Asn Lys Pro Met Ala Gly Ser Lys Lys Thr Ser Ser Pro Thr Glu Arg  
210 215 220

Lys Gly Gln Asp Lys Glu Ile Ser Gln Glu Gly Asp Glu Pro Ala Arg  
225 230 235 240

Glu Gln Ser Val Ser Lys Ile Arg Asp Gln Phe Gly Glu Gln Glu Gly  
245 250 255

Asn Leu Ala Thr Gln Ser Ser Pro Pro Lys Glu Ala Thr Gln Arg Pro  
260 265 270

Cys Glu Asp Gln Glu Val Arg Thr Glu Lys Glu Lys His Ser Asn Ile  
275 280 285

Gln Glu Pro Pro Leu Gln Arg Glu Asp Glu Pro Ser Ser Gln His Ala  
290 295 300

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Asp Leu Pro Glu Gln Ala Ala Ala Arg Ser Pro Ser Gln Thr Gln Lys  
 305 310 315 320  
 Ser Thr Asp Ser Lys Asp Val Cys Arg Met Phe Asp Thr Gln Glu Pro  
 325 330 335  
 Gly Lys Asp Ala Asp Gln Thr Pro Ala Lys Thr Lys Asn Leu Gly Glu  
 340 345 350  
 Pro Glu Asp Tyr Gly Arg Thr Ser Glu Thr Gln Glu Lys Glu Cys Glu  
 355 360 365  
 Thr Lys Asp Leu Pro Val Gln Tyr Gly Ser Arg Asn Gly Ser Glu Thr  
 370 375 380  
 Ser Asp Met Arg Asp Glu Arg Lys Glu Arg Arg Gly Pro Glu Ala His  
 385 390 395 400  
 Gly Thr Ala Gly Gln Lys Glu Arg Asp Arg Lys Thr Arg Pro Leu Val  
 405 410 415  
 Leu Glu Thr Gln Thr Gln Asp Gly Lys Tyr Gln Glu Leu Gln Gly Leu  
 420 425 430  
 Ser Lys Ser Lys Asp Ala Glu Lys Gly Ser Glu Thr Gln Tyr Leu Ser  
 435 440 445  
 Ser Glu Gly Gly Asp Gln Thr His Pro Glu Leu Glu Gly Thr Ala Val  
 450 455 460  
 Ser Gly Glu Glu Ala Glu His Thr Lys Glu Gly Thr Ala Glu Ala Phe  
 465 470 475 480  
 Val Asn Ser Lys Asn Ala Pro Ala Ala Glu Arg Thr Leu Gly Ala Arg  
 485 490 495  
 Glu Arg Thr Gln Asp Leu Ala Pro Leu Glu Lys Gln Ser Val Gly Glu  
 500 505 510  
 Asn Thr Arg Val Thr Lys Thr His Asp Gln Pro Val Glu Glu Glu Asp  
 515 520 525  
 Gly Tyr Gln Gly Glu Asp Pro Glu Ser Pro Phe Thr Gln Ser Asp Glu  
 530 535 540  
 Gly Ser Ser Glu Thr Pro Asn Ser Leu Ala Ser Glu Glu Gly Asn Ser  
 545 550 555 560  
 Ser Ser Glu Thr Gly Glu Leu Pro Val Gln Gly Asp Ser Gln Ser Gln  
 565 570 575

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Gly Asp Gln His 580 Gly Glu Ser Val 585 Gln Gly Gly His Asn 590 Asn Asn Pro

Asp Thr Gln 595 Arg Gln Gly Thr 600 Gly Glu Lys Asn 605 Arg Ala Leu Glu

Ala Val 610 Val Pro Ala Val 615 Arg Gly Glu Asp Val 620 Gln Leu Thr Glu Asp

Gln Glu Gln Pro Ala 630 Arg Gly Glu His Lys 635 Asn Gln Gly Pro Gly Thr 640

Lys Gly Pro Gly 645 Ala Ala Val Glu Pro 650 Asn Gly His Pro Glu 655 Ala Gln

Glu Ser Thr 660 Ala Gly Asp Glu Asn 665 Arg Lys Ser Leu Glu 670 Ile Glu Ile

Thr Gly Ala 675 Leu Asp Glu Asp Phe 680 Thr Asp Gln Leu 685 Ser Leu Met Gln

Leu Pro 690 Gly Lys Gly Asp 695 Ser Arg Asn Glu Leu 700 Lys Val Gln Gly Pro

Ser 705 Ser Lys Glu Glu 710 Lys Gly Arg Ala Thr 715 Glu Ala Gln Asn Thr 720 Leu

Leu Glu Ser Leu 725 Asp Glu Asp Asn Ser 730 Ala Ser Leu Lys Ile 735 Gln Leu

Glu Thr Lys 740 Glu Pro Val Thr Ser 745 Glu Glu Glu Asp Glu 750 Ser Pro Gln

Glu Leu 755 Ala Gly Glu Gly Gly 760 Asp Gln Lys Ser Pro 765 Ala Lys Lys Glu

His 770 Asn Ser Ser Val Pro 775 Trp Ser Ser Leu Glu 780 Lys Gln Met Gln Arg

Asp 785 Gln Glu Pro Cys 790 Ser Val Glu Arg Gly 795 Ala Val Tyr Ser Ser 800 Pro

Leu Tyr Gln Tyr 805 Leu Gln Glu Lys Ile 810 Leu Gln Gln Thr Asn 815 Val Thr

Gln Glu Glu 820 His Gln Lys Gln Val 825 Gln Ile Ala Gln Ala 830 Ser Gly Pro

Glu Leu 835 Cys Ser Val Ser Leu 840 Thr Ser Glu Ile Ser 845 Asp Cys Ser Val



Phe Phe Asn Tyr Ser Gln Ala Ser Gln Pro Tyr Thr Arg Gly Leu Pro  
850 855 860

Leu Asp Glu Ser Pro Ala Gly Ala Gln Glu Thr Pro Ala Pro Gln Ala  
865 870 875 880

Leu Glu Asp Lys Gln Gly His Pro Gln Arg Glu Arg Leu Val Leu Gln  
885 890 895

Arg Glu Ala Ser Thr Thr Lys Gln  
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<220>  
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aca gca ggg ctt atg tct gag gac aaa cgt caa cag aaa ctt ggt gaa	96
Thr Ala Gly Leu Met Ser Glu Asp Lys Arg Gln Gln Lys Leu Gly Glu	
20 25 30	
ctg aag gag cag cgt cga cag tgg agg gaa agt gga ccc acc aag gag	144
Leu Lys Glu Gln Arg Arg Gln Trp Arg Glu Ser Gly Pro Thr Lys Glu	
35 40 45	
act gag gat gaa cag aca gat att ctc cgg aaa gga gta gct gtc ttg	192
Thr Glu Asp Glu Gln Thr Asp Ile Leu Arg Lys Gly Val Ala Val Leu	
50 55 60	
ctt gaa agt cgt ctc att ggg atg aaa gct atc cag ggt gga gag gcc	240
Leu Glu Ser Arg Leu Ile Gly Met Lys Ala Ile Gln Gly Gly Glu Ala	
65 70 75 80	
act gac ggg gac gta gag gtc agt ctc atc gct gac ctt caa gag aaa	288
Thr Asp Gly Asp Val Glu Val Ser Leu Ile Ala Asp Leu Gln Glu Lys	
85 90 95	
cag gac aaa gag gct ggc tat ctc atg gat gat ctt gag agc aag agt	336
Gln Asp Lys Glu Ala Gly Tyr Leu Met Asp Asp Leu Glu Ser Lys Ser	
100 105 110	
gca atg acc tta aag cag ttg aag cag gtg cag ttc atc gcc cga gcc	384
Ala Met Thr Leu Lys Gln Leu Lys Gln Val Gln Phe Ile Ala Arg Ala	
115 120 125	
aac gga tgg aat gac aat gtg gct gcc acc gtc ctg gtg acc aag tct	432
Asn Gly Trp Asn Asp Asn Val Ala Ala Thr Val Leu Val Thr Lys Ser	
130 135 140	
gat aca gag atg gtg act gag gaa caa ctc ttg aaa gct ttg gag agc	480
Asp Thr Glu Met Val Thr Glu Glu Gln Leu Lys Ala Leu Glu Ser	
145 150 155 160	
aaa tat gat gtg atg aga gat aaa cta ctg gca gag gct ttg atc aag	528
Lys Tyr Asp Val Met Arg Asp Lys Leu Leu Ala Glu Ala Leu Ile Lys	

cag Gln	aca Thr	ggc Gly	gaa Glu 180	gca Ala	gag Glu	tgg Trp	gcc Ala	aag Lys 185	ctc Leu	act Thr	gaa Glu	cgt Arg	gag Glu 190	cgt Arg	cag Gln	576
gct Ala	cgt Arg	ctt Leu 195	atg Met	aaa Lys	ctc Leu	aaa Lys	ctc Leu 200	cag Gln	gaa Glu	cgt Arg	aag Lys	atg Met 205	aga Arg	cag Gln	gag Glu	624
aat Asn	aag Lys 210	ttt Phe	gat Asp	gag Glu	gcc Ala	aac Asn 215	tcc Ser	ctt Leu	ctc Leu	agt Ser	cag Gln 220	ggt Gly	atc Ile	aag Lys	gat Asp	672
caa Gln 225	gca Ala	gaa Glu	ctg Leu	gct Ala	cgg Arg 230	ttg Leu	cta Leu	ggg Gly	gca Ala	acc Thr 235	aag Lys	acg Thr	gag Glu	cag Gln	gag Glu 240	720
gag Glu	aag Lys	tta Leu	aag Lys	cag Gln 245	cgt Arg	ctt Leu	gag Glu	aga Arg	aag Lys 250	aag Lys	cag Gln	ttg Leu	aag Lys	gag Glu 255	gaa Glu	768
cgt Arg	gag Glu	gcc Ala	caa Gln 260	gga Gly	ttg Leu	gag Glu	gcc Ala	aat Asn 265	gat Asp	gag Glu	gtg Val	ttg Leu	gat Asp 270	gag Glu	atc Ile	816
gtt Val	caa Gln	cat His 275	gag Glu	atg Met	tct Ser	cga Arg	aaa Lys 280	gaa Glu	atc Ile	ttg Leu	gaa Glu	gac Asp 285	aga Arg	aag Lys	aag Lys	864
aga Arg	cat His 290	aac Asn	att Ile	ctt Leu	gaa Glu	gga Gly 295	cta Leu	aac Asn	aac Asn	cac His	ttt Phe 300	gag Glu	gat Asp	gag Glu	aag Lys	912
aat Asn 305	gct Ala	ctg Leu	ctg Leu	gct Ala	gcg Ala 310	ttg Leu	agg Arg	agt Ser	cag Gln	gac Asp 315	gat Asp	acc Thr	ctg Leu	cag Gln	agt Ser 320	960
gag Glu	aag Lys	gag Glu	aga Arg	cag Gln 325	ctg Leu	gcc Ala	ctg Leu	gct Ala	aag Lys 330	ctg Leu	agg Arg	agg Arg	gac Asp	caa Gln 335	cgc Arg	1008
aag Lys	ctg Leu	cag Gln	gat Asp 340	gaa Glu	gag Glu	aag Lys	ttt Phe	gag Glu 345	gca Ala	gct Ala	gct Ala	gcc Ala	ctc Leu 350	ttt Phe	gga Gly	1056
ttg Leu	gca Ala	cag Gln 355	cag Gln	cat His	gag Glu	aag Lys	acc Thr 360	aga Arg	gag Glu	gcc Ala	aac Asn	tac Tyr 365	gag Glu	aag Lys	gac Asp	1104
aag Lys	gag Glu 370	cgt Arg	caa Gln	aag Lys	cag Gln	ctt Leu 375	gct Ala	agg Arg	gag Glu	agg Arg	ctg Leu 380	gca Ala	gct Ala	agg Arg	aga Arg	1152
gcc Ala 385	aag Lys	atg Met	gct Ala	ggt Gly	gat Asp 390	gag Glu	aaa Lys	ggg Gly	gag Glu	cag Gln 395	gcc Ala	aag Lys	cat His	ctt Leu	act Thr 400	1200
agg Arg	tct Ser	gac Asp	atc Ile	caa Gln 405	gaa Glu	cag Gln	ctc Leu	ttg Leu	ctg Leu 410	gag Glu	gag Glu	aag Lys	gag Glu	aat Asn 415	gcc Ala	1248
aaa Lys	gca Ala	gat Asp	gca Ala 420	gcg Ala	cat His	gcc Ala	acc Thr	aag Lys 425	tca Ser	gat Asp	ccg Pro	gta Val	tcc Ser 430	ctg Leu	gtt Val	1296
tct Ser	acg Thr	gtg Val 435	atg Met	gat Asp	gag Glu	gta Val	gat Asp 440	aag Lys	aag Lys	cag Gln	agc Ser	agt Ser 445	gag Glu	cga Arg	gat Asp	1344

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gtc Val	ctg Leu	gtc Val	act Thr	ctc Leu	ata Ile	gat Asp	ggg Gly	gcc Ala	atg Met	gct Ala	aac Asn	tcc Ser	aag Lys	gaa Glu	cgc Arg	1392
	450					455					460					
aca Thr	agg Arg	ctg Leu	gag Glu	gaa Glu	cta Leu	gct Ala	ctc Leu	aag Lys	gac Asp	ctg Leu	tta Leu	gcc Ala	cag Gln	ctg Leu	gaa Glu	1440
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gcc Ala	ctg Leu	aaa Lys	gag Glu	gag Glu	aga Arg	cgt Arg	cag Gln	ctg Leu	cgt Arg	gag Glu	gat Asp	tct Ser	gat Asp	ctg Leu	gag Glu	1488
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ttt Phe	ggg Gly	gat Asp	gta Val	gac Asp	gtg Val	agt Ser	ggg Gly	ctt Leu	agt Ser	gag Glu	gag Glu	gag Glu	cta Leu	tcc Ser	aga Arg	1536
			500					505					510			
cat His	ctc Leu	aca Thr	cag Gln	gtc Val	tct Ser	gag Glu	tat Tyr	cag Gln	gag Glu	cag Gln	cag Gln	cat His	cga Arg	ctc Leu	ctc Leu	1584
		515					520					525				
aag Lys	agc Ser	gct Ala	ata Ile	aac Asn	atc Ile	aag Lys	ata Ile	gaa Glu	atg Met	atg Met	cgg Arg	cgt Arg	tcc Ser	ttg Leu	att Ile	1632
	530					535					540					
gag Glu	gag Glu	aag Lys	cgt Arg	tta Leu	tca Ser	cta Leu	gaa Glu	gag Glu	att Ile	gag Glu	gag Glu	gag Glu	ctt Leu	gct Ala	gtc Val	1680
545					550					555					560	
atg Met	atg Met	tta Leu	tca Ser	gag Glu	ctt Leu	caa Gln	cag Gln	aaa Lys	cag Gln	agt Ser	gta Val	gag Glu	gtc Val	aat Asn	gct Ala	1728
				565				570						575		
ctt Leu	cat His	cat His	gtt Val	cta Leu	gaa Glu	ggc Gly	ttc Phe	ccg Pro	ggg Gly	gat Asp	aat Asn	agc Ser	aaa Lys	ccc Pro	cag Gln	1776
			580					585					590			
ggc Gly	cat His	cca Pro	ggg Gly	ggc Gly	ctg Leu	gat Asp	aag Lys	cga Arg	cat His	agt Ser	atg Met	gca Ala	tcg Ser	ata Ile	gcg Ala	1824
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tct Ser	ggg Gly	gtg Val	gga Gly	cac His	tca Ser	ttc Phe	aaa Lys	gaa Glu	tta Leu	ttc Phe	ttc Phe	tca Ser	gaa Glu	tcc Ser	act Thr	1872
	610					615					620					
gaa Glu	gtc Val	ata Ile	aag Lys	aat Asn	gaa Glu	gag Glu	ttc Phe	ctt Leu	cac His	cag Gln	atg Met	aag Lys	gtc Val	acc Thr	cag Gln	1920
625					630					635					640	
cgc Arg	aga Arg	gct Ala	cgg Arg	cgg Arg	gag Glu	gga Gly	tgg Trp	ctg Leu	gac Asp	aat Asn	gtg Val	gcg Ala	gtc Val	act Thr	gtg Val	1968
				645					650					655		
ttt Phe	gac Asp	cac His	act Thr	acg Thr	gtc Val	acc Thr	ctt Leu	gag Glu	atg Met	acc Thr	aca Thr	gag Glu	atc Ile	gag Glu	gag Glu	2016
			660					665					670			
atg Met	act Thr	aga Arg	agg Arg	atc Ile	cag Gln	gct Ala	aga Arg	gag Glu	ggc Gly	gcc Ala	ctg Leu	ctg Leu	acc Thr	atg Met	gac Asp	2064
		675					680					685				
aaa Lys	gag Glu	ctt Leu	gag Glu	gag Glu	aag Lys	aag Lys	gcg Ala	gag Glu	gtt Val	atg Met	aag Lys	aat Asn	gag Glu	agt Ser	ggc Gly	2112
	690					695					700					
aga Arg	act Thr	gca Ala	gag Glu	gaa Glu	cta Leu	gat Asp	gca Ala	atg Met	att Ile	gcc Ala	aag Lys	cta Leu	gag Glu	aag Lys	gag Glu	2160
705					710					715					720	

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tat Tyr	gca Ala	gat Asp	aga Arg	aag Lys 725	aag Lys	gct Ala	ctt Leu	gag Glu 730	gag Glu	gag Gln	cag Thr	acc Arg	agg Glu 735	agg Arg	2208	
agg Arg	cag Gln	gag Glu	gca Ala 740	gag Glu	atg Met	aaa Lys	gat Asp	gtc Val 745	aac Asn	cag Gln	gag Glu	ctg Leu	gag Glu 750	cag Gln	aag Lys	2256
gag Glu	caa Gln	gat Asp 755	ctt Leu	cag Gln	aac Asn	ctg Leu	gag Glu 760	cag Gln	gag Glu	atg Met	cag Gln	gaa Glu 765	gcc Ala	att Ile	gag Glu	2304
aac Asn 770	gag Glu	cgt Arg	aaa Lys	cgt Arg	cgt Arg	cca Pro 775	aat Asn	gag Glu	gag Glu	ttt Phe	gat Asp 780	gcc Ala	gag Glu	gct Ala	atg Met	2352
atg Met 785	gcg Ala	gaa Glu	att Ile	gag Glu	gct Ala 790	cag Gln	ttt Phe	gct Ala	gct Ala	aag Lys 795	aaa Lys	agg Arg	gca Ala	atg Met	caa Gln 800	2400
gtt Val	cag Gln	ctt Leu	gag Glu	aag Lys 805	cag Gln	cgt Arg	cgt Arg	cag Gln	gcg Ala 810	atg Met	gag Glu	aag Lys	ata Ile	gcc Ala 815	gcc Ala	2448
agg Arg	aag Lys	cag Gln	aga Arg 820	atg Met	gaa Glu	gat Asp	aga Arg	aac Asn 825	tat Tyr	gaa Glu	gat Asp	gag Glu	atg Met 830	gct Ala	gtg Val	2496
gct Ala	ctg Leu	att Ile 835	cat His	gct Ala	gca Ala	gag Glu	aag Lys 840	agt Ser	aaa Lys	act Thr	cag Gln	aag Lys 845	gaa Glu	gag Glu	gca Ala	2544
gcg Ala 850	gtg Val	gag Glu	cag Gln	aag Lys	aac Asn	aaa Lys 855	cag Gln	aat Asn	cag Gln	ctg Leu	cct Pro 860	gtc Val	atc Ile	act Thr	gac Asp	2592
ccc Pro 865	tca Ser	ccc Pro	cgg Arg	aag Lys	cct Pro 870	aag Lys	aaa Lys	aag Lys	ggc Gly	aag Lys 875	aaa Lys	ggg Gly	gtg Val	agt Ser	ttt Phe 880	2640
ggg Gly	gaa Glu	cca Pro	ccc Pro	aaa Lys 885	gct Ala	gac Asp	aaa Lys	gtg Val	gct Ala 890	ggg Gly	cct Pro	ggg Gly	ctg Leu	atg Met 895	cga Arg	2688
gag Glu	aag Lys	acg Thr	gtg Val 900	ctg Leu	gat Asp	gtg Val	gac Asp	atg Met 905	tcc Ser	gag Glu	gat Asp	gag Glu	aag Lys 910	caa Gln	aac Asn	2736
ctg Leu	tct Ser	aag Lys 915	atg Met	ctc Leu	ctc Leu	tct Ser	cac His 920	cat His	agc Ser	aaa Lys	gca Ala	caa Gln 925	tgg Trp	aag Lys	atg Met	2784
gag Glu 930	aag Lys	gag Glu	cga Arg	gag Glu	aag Lys	agg Arg 935	gca Ala	aat Asn	gag Glu	ctt Leu	aaa Lys 940	gaa Glu	cga Arg	ctg Leu	gaa Glu	2832
atg Met 945	cgc Arg	aag Lys	act Thr	cgt Arg	atc Ile 950	cag Gln	gat Asp	gct Ala	gca Ala	acc Thr 955	acc Thr	atc Ile	ttg Leu	gga Gly	ctg Leu 960	2880
gga Gly	gag Glu	aga Arg	cag Gln	aaa Lys 965	act Thr	atg Met	gtg Val	gag Glu	aat Asn 970	aaa Lys	aag Lys	aag Lys	gat Asp	gaa Glu 975	agg Arg	2928
gag Glu	cgt Arg	cag Gln	ata Ile 980	gcg Ala	ctg Leu	gtg Val	aag Lys	gag Glu 985	cgt Arg	gtg Val	cag Gln	cgt Arg	gta Val 990	cgg Arg	tat Tyr	2976
gaa Glu	cgc Arg	acc Arg	cag Arg	acc Arg	atg Arg	aag Arg	ttc Arg	aaa Arg	ggg Arg	gac Arg	gac Arg	aag Arg	aaa Arg	cgg Arg	ttc Arg	3024

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Ala Met Thr Leu Lys Gln Leu Lys Gln Val Gln Phe Ile Ala Arg Ala  
115 120 125

Asn Gly Trp Asn Asp Asn Val Ala Ala Thr Val Leu Val Thr Lys Ser  
130 135 140

Asp Thr Glu Met Val Thr Glu Glu Gln Leu Leu Lys Ala Leu Glu Ser  
145 150 155 160

Lys Tyr Asp Val Met Arg Asp Lys Leu Leu Ala Glu Ala Leu Ile Lys  
165 170 175

Gln Thr Gly Glu Ala Glu Trp Ala Lys Leu Thr Glu Arg Glu Arg Gln  
180 185 190

Ala Arg Leu Met Lys Leu Lys Leu Gln Glu Arg Lys Met Arg Gln Glu  
195 200 205

Asn Lys Phe Asp Glu Ala Asn Ser Leu Leu Ser Gln Gly Ile Lys Asp  
210 215 220

Gln Ala Glu Leu Ala Arg Leu Leu Gly Ala Thr Lys Thr Glu Gln Glu  
225 230 235 240

Glu Lys Leu Lys Gln Arg Leu Glu Arg Lys Lys Gln Leu Lys Glu Glu  
245 250 255

Arg Glu Ala Gln Gly Leu Glu Ala Asn Asp Glu Val Leu Asp Glu Ile  
260 265 270

Val Gln His Glu Met Ser Arg Lys Glu Ile Leu Glu Asp Arg Lys Lys  
275 280 285

Arg His Asn Ile Leu Glu Gly Leu Asn Asn His Phe Glu Asp Glu Lys  
290 295 300

Asn Ala Leu Leu Ala Ala Leu Arg Ser Gln Asp Asp Thr Leu Gln Ser  
305 310 315 320

Glu Lys Glu Arg Gln Leu Ala Leu Ala Lys Leu Arg Arg Asp Gln Arg  
325 330 335

Lys Leu Gln Asp Glu Glu Lys Phe Glu Ala Ala Ala Ala Leu Phe Gly  
340 345 350

Leu Ala Gln Gln His Glu Lys Thr Arg Glu Ala Asn Tyr Glu Lys Asp

355

360

365

Lys Glu Arg Gln Lys Gln Leu Ala Arg Glu Arg Leu Ala Ala Arg Arg  
 370 375 380

Ala Lys Met Ala Gly Asp Glu Lys Gly Glu Gln Ala Lys His Leu Thr  
 385 390 395 400

Arg Ser Asp Ile Gln Glu Gln Leu Leu Leu Glu Glu Lys Glu Asn Ala  
 405 410 415

Lys Ala Asp Ala Ala His Ala Thr Lys Ser Asp Pro Val Ser Leu Val  
 420 425 430

Ser Thr Val Met Asp Glu Val Asp Lys Lys Gln Ser Ser Glu Arg Asp  
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Val Leu Val Thr Leu Ile Asp Gly Ala Met Ala Asn Ser Lys Glu Arg  
 450 455 460

Thr Arg Leu Glu Glu Leu Ala Leu Lys Asp Leu Leu Ala Gln Leu Glu  
 465 470 475 480

Ala Leu Lys Glu Glu Arg Arg Gln Leu Arg Glu Asp Ser Asp Leu Glu  
 485 490 495

Phe Gly Asp Val Asp Val Ser Gly Leu Ser Glu Glu Glu Leu Ser Arg  
 500 505 510

His Leu Thr Gln Val Ser Glu Tyr Gln Glu Gln Gln His Arg Leu Leu  
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Lys Ser Ala Ile Asn Ile Lys Ile Glu Met Met Arg Arg Ser Leu Ile  
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Glu Glu Lys Arg Leu Ser Leu Glu Glu Ile Glu Glu Glu Leu Ala Val  
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Met Met Leu Ser Glu Leu Gln Gln Lys Gln Ser Val Glu Val Asn Ala  
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Leu His His Val Leu Glu Gly Phe Pro Gly Asp Asn Ser Lys Pro Gln  
 580 585 590

Gly His Pro Gly Gly Leu Asp Lys Arg His Ser Met Ala Ser Ile Ala  
 595 600 605

Ser Gly Val Gly His Ser Phe Lys Glu Leu Phe Phe Ser Glu Ser Thr  
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Glu Val Ile Lys Asn Glu Glu Phe Leu His Gln Met Lys Val Thr Gln  
 625 630 635 640

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Arg Arg Ala Arg Arg Glu Gly Trp Leu Asp Asn Val Ala Val Thr Val  
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Phe Asp His Thr Thr Val Thr Leu Glu Met Thr Thr Glu Ile Glu Glu  
660 665 670

Met Thr Arg Arg Ile Gln Ala Arg Glu Gly Ala Leu Leu Thr Met Asp  
675 680 685

Lys Glu Leu Glu Glu Lys Lys Ala Glu Val Met Lys Asn Glu Ser Gly  
690 695 700

Arg Thr Ala Glu Glu Leu Asp Ala Met Ile Ala Lys Leu Glu Lys Glu  
705 710 715 720

Tyr Ala Asp Arg Lys Lys Ala Leu Glu Glu Glu Gln Thr Arg Glu Arg  
725 730 735

Arg Gln Glu Ala Glu Met Lys Asp Val Asn Gln Glu Leu Glu Gln Lys  
740 745 750

Glu Gln Asp Leu Gln Asn Leu Glu Gln Glu Met Gln Glu Ala Ile Glu  
755 760 765

Asn Glu Arg Lys Arg Arg Pro Asn Glu Glu Phe Asp Ala Glu Ala Met  
770 775 780

Met Ala Glu Ile Glu Ala Gln Phe Ala Ala Lys Lys Arg Ala Met Gln  
785 790 795 800

Val Gln Leu Glu Lys Gln Arg Arg Gln Ala Met Glu Lys Ile Ala Ala  
805 810 815

Arg Lys Gln Arg Met Glu Asp Arg Asn Tyr Glu Asp Glu Met Ala Val  
820 825 830

Ala Leu Ile His Ala Ala Glu Lys Ser Lys Thr Gln Lys Glu Glu Ala  
835 840 845

Ala Val Glu Gln Lys Asn Lys Gln Asn Gln Leu Pro Val Ile Thr Asp  
850 855 860

Pro Ser Pro Arg Lys Pro Lys Lys Lys Gly Lys Lys Gly Val Ser Phe  
865 870 875 880

Gly Glu Pro Pro Lys Ala Asp Lys Val Ala Gly Pro Gly Leu Met Arg  
885 890 895

Glu Lys Thr Val Leu Asp Val Asp Met Ser Glu Asp Glu Lys Gln Asn  
900 905 910



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Leu Ser Lys Met Leu Leu Ser His His Ser Lys Ala Gln Trp Lys Met  
915 920 925

Glu Lys Glu Arg Glu Lys Arg Ala Asn Glu Leu Lys Glu Arg Leu Glu  
930 935 940

Met Arg Lys Thr Arg Ile Gln Asp Ala Ala Thr Thr Ile Leu Gly Leu  
945 950 955 960

Gly Glu Arg Gln Lys Thr Met Val Glu Asn Lys Lys Lys Asp Glu Arg  
965 970 975

Glu Arg Gln Ile Ala Leu Val Lys Glu Arg Val Gln Arg Val Arg Tyr  
980 985 990

Glu Arg Thr Gln Thr Met Lys Phe Lys Gly Asp Asp Lys Lys Arg Phe  
995 1000 1005

Lys Asp Tyr Leu Glu Lys Glu Asp Ser Gly Leu Ser Glu Asp Glu  
1010 1015 1020

Lys Met Thr Lys Ile Ala Asp Arg Ile Asn Ser Gln Phe Lys Arg  
1025 1030 1035

His Glu Ser Ser Tyr Arg Ala Gly His Lys Ser Ala Phe Glu Pro  
1040 1045 1050

Asp Glu Asp Glu Leu Ala Ser Asn Ser Ser Gly Ser Lys Pro Ala  
1055 1060 1065

Thr Pro Gln Gly Ser Ala Arg Pro Lys Thr Gly Arg Leu Leu Gly  
1070 1075 1080

Gln Lys Glu Arg Glu Gln Leu Ile Lys Ser Arg Gln Ala Lys Arg  
1085 1090 1095

Arg Glu Ile Lys Lys Val Asn Asn Ser Ile Ser Ala Ala Pro Asp  
1100 1105 1110

Met Asp Ser Leu Ala Lys Met Ile Glu Asp Arg Lys Lys Ala Gly  
1115 1120 1125

Met Gln Gln Glu Glu Glu Glu Glu Glu Asp Asn Gly Ser Glu Val  
1130 1135 1140

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<211> 2280  
<212> DNA  
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<220>  
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&lt;400&gt; 115

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1				5					10					15		
ttc	agt	ctt	tta	tca	tat	ggg	aag	gga	ttc	ctg	tgc	aaa	ttt	ctg	gtg	96
Phe	Ser	Leu	Leu	Ser	Tyr	Gly	Lys	Gly	Phe	Leu	Cys	Lys	Phe	Leu	Val	
			20					25					30			
tct	ttt	atc	cat	ttc	tct	cta	ttt	ttt	ttt	ttt	aat	ttc	tgt	tcc	tta	144
Ser	Phe	Ile	His	Phe	Ser	Leu	Phe	Phe	Phe	Phe	Asn	Phe	Cys	Ser	Leu	
		35					40					45				
tta	tta	tta	tta	ttt	ttt	ttt	ttt	cca	ttg	agg	cct	tat	gat	gac	aga	192
Leu	Leu	Leu	Leu	Phe	Phe	Phe	Phe	Pro	Leu	Arg	Pro	Tyr	Asp	Asp	Arg	
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atg	aac	att	att	gtg	tct	tgc	agg	gcg	tct	gag	ggt	gac	tcg	att	acc	240
Met	Asn	Ile	Ile	Val	Ser	Cys	Arg	Ala	Ser	Glu	Val	Asp	Ser	Ile	Thr	
65					70					75					80	
tca	ttt	ttt	cga	aaa	gag	cga	att	ccc	acg	ccc	acg	gct	gtg	tgt	acc	288
Ser	Phe	Phe	Arg	Lys	Glu	Arg	Ile	Pro	Thr	Pro	Thr	Ala	Val	Cys	Thr	
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gct	gaa	tct	acc	gct	gac	ttt	gtc	act	cga	cat	ggt	cgt	gcg	gtc	gta	336
Ala	Glu	Ser	Thr	Ala	Asp	Phe	Val	Thr	Arg	His	Val	Arg	Ala	Val	Val	
			100					105					110			
gat	ggc	tgt	gga	tcc	aat	aat	aac	gat	gag	gat	ggt	gag	ggg	acg	aag	384
Asp	Gly	Cys	Gly	Ser	Asn	Asn	Asn	Asp	Glu	Asp	Gly	Glu	Gly	Thr	Lys	
		115					120					125				
gca	tcg	ggt	gtg	gac	gtc	gtg	gca	atc	gga	gta	gat	gac	gtg	atg	ttg	432
Ala	Ser	Val	Val	Asp	Val	Val	Ala	Ile	Gly	Val	Asp	Asp	Val	Met	Leu	
	130					135					140					
gat	aaa	ttt	ttt	ttg	aac	agc	ctg	tct	cgt	cac	ggt	gtg	tgt	gcg	ttt	480
Asp	Lys	Phe	Phe	Leu	Asn	Ser	Leu	Ser	Arg	His	Val	Val	Cys	Ala	Phe	
145					150					155					160	
ctc	tcc	gga	ggg	gct	gcc	ggt	gcg	gta	tcg	ttg	gtg	gtc	ttt	ccg	acc	528
Leu	Ser	Gly	Gly	Ala	Ala	Val	Ala	Val	Ser	Leu	Val	Val	Phe	Pro	Thr	
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ccc	cat	gac	gca	cgg	cag	agg	agc	ggt	gac	atc	aca	gcg	aaa	tta	ttc	576
Pro	His	Asp	Ala	Arg	Gln	Arg	Ser	Val	Asp	Ile	Thr	Ala	Lys	Leu	Phe	
			180					185					190			
act	gag	gca	gtg	ggc	gat	ggt	ggc	gtg	tac	att	cac	agc	gtc	tcg	gag	624
Thr	Glu	Ala	Val	Gly	Asp	Gly	Gly	Val	Tyr	Ile	His	Ser	Val	Ser	Glu	
		195					200					205				
tac	gac	aga	atc	ata	gaa	ttg	ttg	aca	aac	agc	ccg	tcc	ttt	tgt	cac	672
Tyr	Asp	Arg	Ile	Ile	Glu	Leu	Leu	Thr	Asn	Ser	Pro	Ser	Phe	Cys	His	
	210					215					220					
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Ile	Phe	Pro	Val	Ser	Ser	Leu	Leu	Leu	Arg	Leu	Cys	Pro	Gln	Gly	Glu	
225				230						235					240	
caa	gca	gct	tgt	gtg	gtg	aat	atg	tgg	tgg	ctg	cag	acg	tcg	cat	ggt	768
Gln	Ala	Ala	Cys	Val	Val	Asn	Met	Trp	Trp	Leu	Gln	Thr	Ser	His	Val	
				245				250						255		
cag	tta	ttt	ttt	ccc	gct	gac	gga	ctg	ctt	gac	gcg	cgg	cga	ttg	ccc	816
Gln	Leu	Phe	Phe	Pro	Ala	Asp	Gly	Leu	Leu	Asp	Ala	Arg	Arg	Leu	Pro	

cat His	cgt Arg	gtt Val 275	gtc Val	gtt Val	ttc Phe	ccc Pro	gtg Val 280	cgt Arg	gac Asp	acg Thr	aat Asn	gag Glu 285	ttg Leu	cag Gln	ttg Leu	864
cga Arg	ttg Leu 290	gct Ala	tcc Ser	att Ile	gga Gly	ttc Phe 295	atc Ile	cgt Arg	gca Ala	gcg Ala	aaa Lys 300	ggg Gly	tcc Ser	cct Pro	gac Asp	912
gcg Ala 305	cag Gln	ctt Leu	caa Gln	ggg Gly	ccc Pro 310	gtt Val	gtg Val	gag Glu	gag Glu	aag Lys 315	gag Glu	agg Arg	gaa Glu	atg Met	ctg Leu 320	960
aag Lys	gca Ala	gat Asp	ttg Leu	cag Gln 325	gca Ala	gtg Val	cgt Arg	gac Asp	gaa Glu 330	ttc Phe	gag Glu	tca Ser	act Thr	cgt Arg 335	acg Thr	1008
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ctt Leu	cgt Arg	tta Leu 355	cgt Arg	gaa Glu	aag Lys	gtg Val	cgt Arg 360	ggc Gly	ttg Leu	gcc Ala	agg Arg	gag Glu 365	caa Gln	agg Arg	cgt Arg	1104
tta Leu	gag Glu 370	agc Ser	gag Glu	tgt Cys	agc Ser	gcg Ala 375	gcg Ala	cgg Arg	cac His	tcg Ser	agg Arg 380	gaa Glu	cag Gln	ttg Leu	gaa Glu	1152
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cga Arg	gtt Val	gcg Ala	cat His	ctt Leu 405	cgc Arg	cga Arg	cag Gln	ttg Leu	gag Glu 410	tgg Trp	gag Glu	ctg Leu	agg Arg	atg Met 415	gaa Glu	1248
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gaa Glu	gaa Glu	aat Asn 435	aaa Lys	cgc Arg	aca Thr	gta Val	atg Met 440	cac His	agg Arg	gaa Glu	gct Ala	cta Leu 445	gac Asp	agg Arg	gaa Glu	1344
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cgg Arg 465	aaa Lys	agg Arg	agg Arg	gat Asp	aca Thr 470	tct Ser	ctt Leu	cgt Arg	tcc Ser	gtg Val 475	ttt Phe	ggg Gly	acg Thr	tct Ser	cga Arg 480	1440
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gtg Val	gag Glu	gtg Val	tcg Ser 500	agc Ser	cgc Arg	cca Pro	tac Tyr	gag Glu 505	gac Asp	tca Ser	gaa Glu	ctg Leu	tgc Cys 510	cgt Arg	gtg Val	1536
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gaa Glu	agg Arg 530	gac Asp	gag Glu	ctt Leu	gcg Ala	act Thr 535	ttc Phe	gag Glu	caa Gln	tca Ser	tgg Trp 540	gcg Ala	cta Leu	gga Gly	gtg Val	1632

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gaa Glu 545	gag Glu	gac Asp	gag Glu	gta Val 550	aga Arg	gac Asp	agc Ser	ggg Gly	gac Asp 555	gat Asp	gat Asp	ggg Gly	ttt Phe	gag Glu	agg Arg 560	1680
ggg Gly	atc Ile	cgt Arg	ctg Leu	aag Lys 565	agc Ser	gaa Glu	gat Asp	gtg Val	agg Arg 570	caa Gln	atg Met	gcg Ala	cgg Arg	gag Glu 575	act Thr	1728
ctg Leu	gaa Glu	aga Arg	gaa Glu 580	gaa Glu	cac His	gtc Val	acg Thr	cga Arg 585	gag Glu	gct Ala	ttt Phe	tgc Cys	gcc Ala 590	atc Ile	gag Glu	1776
gag Glu	gca Ala	agg Arg 595	agg Arg	gcg Ala	gag Glu	ttt Phe	gac Asp 600	tgg Trp	gat Asp	tgg Trp	gtg Val	gtt Val 605	tgt Cys	acg Thr	cag Gln	1824
tgc Cys	ctg Leu 610	agc Ser	tgt Cys	gcg Ala	tct Ser	tta Leu 615	ttt Phe	gtt Val	tca Ser	ggc Gly	gag Glu 620	ggg Gly	agt Ser	cgg Arg	cct Pro	1872
ccc Pro 625	tac Tyr	ggg Gly	gcg Ala	agg Arg	gag Glu 630	cag Gln	caa Gln	cga Arg	cgc Arg	gaa Glu 635	ttg Leu	act Thr	ctt Leu	tgc Cys	gaa Glu 640	1920
ctc Leu	gaa Glu	cgc Arg	gta Val	ggc Gly 645	cga Arg	ttg Leu	aag Lys	gcg Ala	gcg Ala 650	gtg Val	caa Gln	cgg Arg	gaa Glu	atg Met 655	caa Gln	1968
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gcg Ala	tgt Cys 690	gcg Ala	gaa Glu	gtt Val	atg Met	gcg Ala 695	agc Ser	gag Glu	aaa Lys	aag Lys	gcg Ala 700	gcc Ala	gag Glu	gcg Ala	gag Glu	2112
gca Ala 705	gag Glu	gcg Ala	ttg Leu	cgg Arg	cac His 710	aca Thr	ctt Leu	cag Gln	ctt Leu 715	cat His	tca Ser	tgc Cys	atg Met	aat Asn 720		2160
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Ser Phe Ile His Phe Ser Leu Phe Phe Phe Phe Asn Phe Cys Ser Leu  
35 40 45

Leu Leu Leu Leu Phe Phe Phe Phe Pro Leu Arg Pro Tyr Asp Asp Arg  
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Met Asn Ile Ile Val Ser Cys Arg Ala Ser Glu Val Asp Ser Ile Thr  
65 70 75 80

Ser Phe Phe Arg Lys Glu Arg Ile Pro Thr Pro Thr Ala Val Cys Thr  
85 90 95

Ala Glu Ser Thr Ala Asp Phe Val Thr Arg His Val Arg Ala Val Val  
100 105 110

Asp Gly Cys Gly Ser Asn Asn Asn Asp Glu Asp Gly Glu Gly Thr Lys  
115 120 125

Ala Ser Val Val Asp Val Val Ala Ile Gly Val Asp Asp Val Met Leu  
130 135 140

Asp Lys Phe Phe Leu Asn Ser Leu Ser Arg His Val Val Cys Ala Phe  
145 150 155 160

Leu Ser Gly Gly Ala Ala Val Ala Val Ser Leu Val Val Phe Pro Thr  
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Pro His Asp Ala Arg Gln Arg Ser Val Asp Ile Thr Ala Lys Leu Phe  
180 185 190

Thr Glu Ala Val Gly Asp Gly Gly Val Tyr Ile His Ser Val Ser Glu  
195 200 205

Tyr Asp Arg Ile Ile Glu Leu Leu Thr Asn Ser Pro Ser Phe Cys His  
210 215 220

Ile Phe Pro Val Ser Ser Leu Leu Leu Arg Leu Cys Pro Gln Gly Glu  
225 230 235 240

Gln Ala Ala Cys Val Val Asn Met Trp Trp Leu Gln Thr Ser His Val  
245 250 255

Gln Leu Phe Phe Pro Ala Asp Gly Leu Leu Asp Ala Arg Arg Leu Pro  
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His Arg Val Val Val Phe Pro Val Arg Asp Thr Asn Glu Leu Gln Leu  
275 280 285

Arg Leu Ala Ser Ile Gly Phe Ile Arg Ala Ala Lys Gly Ser Pro Asp  
Seite 665

290

295

300

Ala Gln Leu Gln Gly Pro Val Val Glu Glu Lys Glu Arg Glu Met Leu  
305 310 315 320

Lys Ala Asp Leu Gln Ala Val Arg Asp Glu Phe Glu Ser Thr Arg Thr  
325 330 335

Thr Ile Gln Gln Gln Lys Ser Arg Asn Glu Ala Leu Glu Gly Thr Ile  
340 345 350

Leu Arg Leu Arg Glu Lys Val Arg Gly Leu Ala Arg Glu Gln Arg Arg  
355 360 365

Leu Glu Ser Glu Cys Ser Ala Ala Arg His Ser Arg Glu Gln Leu Glu  
370 375 380

Glu Asp Met Arg Gln Gln Val Asp Met Arg Asn Glu Met Glu Gly Arg  
385 390 395 400

Arg Val Ala His Leu Arg Arg Gln Leu Glu Trp Glu Leu Arg Met Glu  
405 410 415

Arg Gly Arg Val Glu Ser Tyr Cys Ala His Leu Ala Arg Ile Arg Glu  
420 425 430

Glu Glu Asn Lys Arg Thr Val Met His Arg Glu Ala Leu Asp Arg Glu  
435 440 445

Ile Gly Ala Ala Arg Glu Gln Lys Glu Arg Leu Leu Gly Ile Ile Ser  
450 455 460

Arg Lys Arg Arg Asp Thr Ser Leu Arg Ser Val Phe Gly Thr Ser Arg  
465 470 475 480

Ser Thr Ser Thr Arg Glu Thr Ser Leu Met Arg Ala His Thr Ser Asp  
485 490 495

Val Glu Val Ser Ser Arg Pro Tyr Glu Asp Ser Glu Leu Cys Arg Val  
500 505 510

Asn Glu Gln Cys Gln Arg Leu Ser Arg Leu Cys Ala Ala Leu Arg Val  
515 520 525

Glu Arg Asp Glu Leu Ala Thr Phe Glu Gln Ser Trp Ala Leu Gly Val  
530 535 540

Glu Glu Asp Glu Val Arg Asp Ser Gly Asp Asp Asp Gly Phe Glu Arg  
545 550 555 560

Gly Ile Arg Leu Lys Ser Glu Asp Val Arg Gln Met Ala Arg Glu Thr  
565 570 575

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Leu Glu Arg Glu Glu His Val Thr Arg Glu Ala Phe Cys Ala Ile Glu  
580 585 590

Glu Ala Arg Arg Ala Glu Phe Asp Trp Asp Trp Val Val Cys Thr Gln  
595 600 605

Cys Leu Ser Cys Ala Ser Leu Phe Val Ser Gly Glu Gly Ser Arg Pro  
610 615 620

Pro Tyr Gly Ala Arg Glu Gln Gln Arg Arg Glu Leu Thr Leu Cys Glu  
625 630 635 640

Leu Glu Arg Val Gly Arg Leu Lys Ala Ala Val Gln Arg Glu Met Gln  
645 650 655

Arg Ile His Leu Glu Gly Ala Ile Arg Glu Arg Ser Val Arg Gln Leu  
660 665 670

Val Asp Gln Leu Arg Val Glu Ser Glu Arg Leu Ala Gln Glu Arg Asn  
675 680 685

Ala Cys Ala Glu Val Met Ala Ser Glu Lys Lys Ala Ala Glu Ala Glu  
690 695 700

Ala Glu Ala Leu Arg His Thr Leu Gln Leu Leu His Ser Cys Met Asn  
705 710 715 720

Ile Arg Leu Pro Leu Ser Gly Pro Phe Phe Ser Thr Gly Pro Gly Gly  
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Asn Trp His Thr Leu Ser His Ala Ile Thr Ala Leu Gly Arg Arg Val  
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Gln Arg Glu Ala Asp Leu Leu  
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ccg act tcc ccg cgg tcc att gtg gcc atg aac agg tgt ggg ata acg 96  
Pro Thr Ser Pro Arg Ser Ile Val Ala Met Asn Arg Cys Gly Ile Thr  
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Pro	Pro	Asp	Ile	Leu	Tyr	Val	Ser	Arg	Glu	Glu	Leu	Lys	His	Arg	Ile	
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gca	tac	aag	aat	cta	acg	gat	aag	gag	ttt	gtc	atc	tac	tac	gat	aac	192
Ala	Tyr	Lys	Asn	Leu	Thr	Asp	Lys	Glu	Phe	Val	Ile	Tyr	Tyr	Asp	Asn	
	50					55					60					
tat	gag	gca	atg	cgg	aaa	gag	gct	ctg	agc	caa	gct	ata	gcc	gag	tac	240
Tyr	Glu	Ala	Met	Arg	Lys	Glu	Ala	Leu	Ser	Gln	Ala	Ile	Ala	Glu	Tyr	
65					70					75					80	
cag	cta	att	tta	gag	caa	gga	att	tcg	aag	gcc	gag	gct	gcg	ctt	tac	288
Gln	Leu	Ile	Leu	Glu	Gln	Gly	Ile	Ser	Lys	Ala	Glu	Ala	Ala	Leu	Tyr	
				85					90					95		
ccc	cac	ttg	cgc	ttt	cca	aac	gtt	act	tca	gct	cca	tct	aca	ccg	cga	336
Pro	His	Leu	Arg	Phe	Pro	Asn	Val	Thr	Ser	Ala	Pro	Ser	Thr	Pro	Arg	
			100					105					110			
ggg	ggg	ctt	ttg	cag	aca	tcc	acg	cat	aac	ccg	gac	gag	ctc	aag	gcc	384
Gly	Gly	Leu	Leu	Gln	Thr	Ser	Thr	His	Asn	Pro	Asp	Glu	Leu	Lys	Ala	
		115					120					125				
aaa	atc	att	gaa	cgt	cat	att	aag	gaa	gtg	gag	ctc	aat	ctc	cga	cag	432
Lys	Ile	Ile	Glu	Arg	His	Ile	Lys	Glu	Val	Glu	Leu	Asn	Leu	Arg	Gln	
	130					135					140					
cgc	att	gct	aag	gaa	gca	caa	caa	cag	ctt	caa	ctt	gag	gct	gca	caa	480
Arg	Ile	Ala	Lys	Glu	Ala	Gln	Gln	Gln	Leu	Gln	Leu	Glu	Ala	Ala	Gln	
145					150					155					160	
gag	cat	cgc	ctg	aag	gcc	cag	gag	att	gaa	aat	aga	atg	act	gct	aag	528
Glu	His	Arg	Leu	Lys	Ala	Gln	Glu	Ile	Glu	Asn	Arg	Met	Thr	Ala	Lys	
				165					170					175		
tat	gag	gac	gag	gcc	att	aag	tac	att	ctt	cag	gag	cag	cac	cgc	ctt	576
Tyr	Glu	Asp	Glu	Ala	Ile	Lys	Tyr	Ile	Leu	Gln	Glu	Gln	His	Arg	Leu	
			180					185					190			
gag	atc	ttt	agt	agc	ttt	cag	cgc	cag	cag	gag	gaa	tgc	agg	aaa	cgc	624
Glu	Ile	Phe	Ser	Ser	Phe	Gln	Arg	Gln	Gln	Glu	Glu	Cys	Arg	Lys	Arg	
		195					200					205				
tca	tat	gca	aag	act	atc	cag	gaa	atg	cat	gca	cat	gat	gct	ctg	ctc	672
Ser	Tyr	Ala	Lys	Thr	Ile	Gln	Glu	Met	His	Ala	His	Asp	Ala	Leu	Leu	
	210					215					220					
cag	cgt	cgt	cag	cgt	tat	ctc	gac	gac	caa	tct	gtc	cgc	tcc	aag	acg	720
Gln	Arg	Arg	Gln	Arg	Tyr	Leu	Asp	Asp	Gln	Ser	Val	Arg	Ser	Lys	Thr	
225					230					235					240	
cgc	tcg	gtt	cct	cga	gag	gag	ttc	ttg	tat	caa	ctg	gcc	caa	gag	cgc	768
Arg	Ser	Val	Pro	Arg	Glu	Glu	Phe	Leu	Tyr	Gln	Leu	Ala	Gln	Glu	Arg	
				245					250					255		
aag	gca	gaa	gac	cgg	gca	cgc	gag	ctt	gag	ttc	aag	gag	cga	caa	ctt	816
Lys	Ala	Glu	Asp	Arg	Ala	Arg	Glu	Leu	Glu	Phe	Lys	Glu	Arg	Gln	Leu	
			260					265					270			
att	cga	gaa	caa	agg	agc	cag	cgt	gca	caa	gaa	aag	aag	cgg	cag	gaa	864
Ile	Arg	Glu	Gln	Arg	Ser	Gln	Arg	Ala	Gln	Glu	Lys	Lys	Arg	Gln	Glu	
		275					280					285				
gtg	gag	aga	ctt	cag	cag	tct	ttg	cgc	gaa	aat	cag	ctg	cgg	cac	aca	912
Val	Glu	Arg	Leu	Gln	Gln	Ser	Leu	Arg	Glu	Asn	Gln	Leu	Arg	His	Thr	
	290					295					300					
aaa	gtg	ttc	aac	gag	tat	tgg	gaa	gac	gtt	gct	cgt	tcc	aaa	tca	gtg	960



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Lys 305	Val	Phe	Asn	Glu 310	Tyr	Trp	Glu	Asp	Val 315	Ala	Arg	Ser	Lys	Ser	Val 320	
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tct Ser	aca Thr	gaa Glu	aaa Lys 340	ttg Leu	aag Lys	gag Glu	aac Asn	gcc Ala 345	gaa Glu	cgg Arg	atc Ile	agc Ser	gaa Glu 350	acc Thr	agt Ser	1056
cag Gln	cgc Arg	ata Ile 355	gaa Glu	gta Val	acg Thr	ctg Leu	aag Lys 360	aat Asn	ttc Phe	gga Gly	aag Lys	ata Ile 365	tat Tyr	cgt Arg	aat Asn	1104
aag Lys	caa Gln 370	gat Asp	gca Ala	aag Lys	gcg Ala	cgc Arg 375	aaa Lys	ctt Leu	gaa Glu	gaa Glu	gag Glu 380	gag Glu	ctt Leu	cgc Arg	tct Ser	1152
agc Ser 385	aga Arg	cac His	atc Ile	ctt Leu	gag Glu 390	acg Thr	tct Ser	gtt Val	aat Asn	gcg Ala 395	cgt Arg	caa Gln	cga Arg	gcc Ala	tta Leu 400	1200
gag Glu	gac Asp	gaa Glu	ctg Leu	ctg Leu 405	aag Lys	gat Asp	cta Leu	cgg Arg	aca Thr 410	aag Lys	agg Arg	gcg Ala	gag Glu	atg Met 415	cat His	1248
ctt Leu	cgg Arg	agg Arg	gtt Val 420	cag Gln	tac Tyr	gag Glu	aaa Lys	gaa Glu 425	aat Asn	gtg Val	ctc Leu	tcg Ser	aat Asn 430	aag Lys	gag Glu	1296
ttc Phe	aag Lys	gcg Ala 435	ata Ile	aat Asn	tcc Ser	atc Ile	aga Arg 440	gct Ala	ctg Leu	aac Asn	atg Met	aca Thr 445	aag Lys	gag Glu	aag Lys	1344
gaa Glu 450	gag Glu	gag Glu	ctt Leu	atg Met	gcc Ala	ctt Leu 455	tca Ser	aac Asn	aaa Lys	ctc Leu	cac His 460	act Thr	caa Gln	agg Arg	cat His	1392
ata Ile 465	cta Leu	aaa Lys	ggt Gly	agc Ser	caa Gln 470	aca Thr	att Ile	cgt Arg	gat Asp	gat Asp 475	ggc Gly	tat Tyr	ttg Leu	gac Asp	att Ile 480	1440
cca Pro	gat Asp	gat Asp	ctt Leu	aga Arg 485	aaa Lys	ctg Leu	gcg Ala	ccg Pro	cct Pro 490	gag Glu	agt Ser	att Ile	ctt Leu	aag Lys 495	tgc Cys	1488
cac His	tat Tyr	atg Met	gac Asp 500	gag Glu	gcc Ala	att Ile	gac Asp	atg Met 505	ctc Leu	aag Lys	gga Gly	gaa Glu	gaa Glu 510	agc Ser	ttt Phe	1536
aag Lys	cgc Arg	acc Thr 515	ctt Leu	cgg Arg	atg Met	gtg Val	ccc Pro 520	gtt Val	tca Ser	gaa Glu	tcg Ser	tat Tyr 525	gct Ala	tca Ser	gtc Val	1584
tat Tyr	aaa Lys 530	tcg Ser	ata Ile	gat Asp	acc Thr	gag Glu 535	cct Pro	cgt Arg	aaa Lys	aag Lys	aag Lys 540	cca Pro	act Thr	aag Lys	agt Ser	1632
cag Gln 545	cat His	gtt Val	gcc Ala	cgc Arg	cac His 550	aac Asn	agt Ser	atc Ile	agt Ser	gat Asp 555	ttc Phe	agc Ser	atg Met	gac Asp	acg Thr 560	1680
cca Pro	gac Asp	agt Ser	ggg Gly	cgc Arg 565	ccg Pro	tac Tyr	tat Tyr	cag Gln	gtg Val 570	aaa Lys	aac Asn	tcg Ser	cgc Arg	cca Pro 575	cta Leu	1728
agg Arg	tct Ser	agc Ser	tcc Ser	aac Asn	ggg Gly	gat Asp	ggg Gly	ctt Leu	ctc Leu	gtt Val	gaa Glu	aga Arg	agg Arg	tct Ser	aag Lys	1776

agc Ser	tta Leu	aca Thr 595	agg Arg	ccg Pro	cgg Arg	aca Thr	gca Ala 600	tca Ser	cga Arg	agt Ser	ggt Gly	cct Pro 605	gca Ala	gca Ala	cta Leu	1824
gat Asp	agt Ser 610	tcc Ser	cgg Arg	acc Thr	gat Asp	tcc Ser 615	act Thr	cct Pro	ggt Gly	tcg Ser	tcc Ser 620	tac Tyr	ttg Leu	gga Gly	ggc Gly	1872
cat His 625	cat His	agt Ser	gga Gly	gct Ala	caa Gln 630	gta Val	gca Ala	tct Ser	gta Val	ccc Pro 635	ctt Leu	cga Arg	ccc Pro	ggt Gly	gac Asp 640	1920
gct Ala	tca Ser	cga Arg	cca Pro	aag Lys 645	aag Lys	gca Ala	gca Ala	aaa Lys	cgt Arg 650	ggc Gly	tcg Ser	tcc Ser	aag Lys	tcg Ser 655	aaa Lys	1968
gtc Val	tcc Ser	cac His	aac Asn 660	tct Ser	atg Met	cgc Arg	tct Ser	gca Ala 665	tct Ser	gac Asp	tcc Ser	acc Thr	att Ile 670	gaa Glu	acg Thr	2016
cct Pro	cag Gln	tgg Trp 675	agc Ser	gat Asp	tcg Ser	gta Val	tct Ser 680	agc Ser	aac Asn	atc Ile	agc Ser	tcc Ser 685	aca Thr	aag Lys	aaa Lys	2064
aaa Lys	gcc Ala 690	acc Thr	cgc Arg	ctc Leu	cga Arg	agt Ser 695	gat Asp	gac Asp	gct Ala	aat Asn	ttg Leu 700	tcg Ser	gtc Val	agc Ser	ttg Leu	2112
cct Pro 705	ctc Leu	cct Pro	gca Ala	ttg Leu	aag Lys 710	ggc Gly	ccc Pro	ggg Gly	tca Ser	ggg Gly 715	ttg Leu	att Ile	gaa Glu	gaa Glu	gag Glu 720	2160
aag Lys	aag Lys	cgc Arg	aat Asn	gct Ala 725	act Thr	gtg Val	cgg Arg	caa Gln	tca Ser 730	aag Lys	aaa Lys	gaa Glu	aga Arg	ccg Pro 735	aga Arg	2208
gat Asp	agt Ser	cag Gln	cga Arg 740	aat Asn	aaa Lys	tct Ser	aag Lys	aca Thr 745	gac Asp	acc Thr	gaa Glu	gct Ala 750	gca Ala	cag Gln	gat Asp	2256
agc Ser	ctt Leu	ctg Leu 755	cgg Arg	aat Asn	caa Gln	tcc Ser	ctg Leu 760	gag Glu	ata Ile	gtc Val	cgc Arg	caa Gln 765	ctg Leu	agt Ser	caa Gln	2304
tta Leu 770	aca Thr	aaa Lys	ctt Leu	aac Asn	aag Lys	cca Pro 775	gct Ala	atc Ile	agt Ser	aac Asn	ttt Phe 780	cca Pro	cca Pro	cca Pro	gat Asp	2352
gag Glu 785	cgt Arg	cgc Arg	gag Glu	ttg Leu	ctt Leu 790	ggc Gly	aag Lys	cta Leu	aca Thr	ggt Gly 795	gcc Ala	act Thr	cag Gln	gaa Glu	ccc Pro 800	2400
gac Asp	tat Tyr	gat Asp	act Thr	gag Glu 805	aat Asn	aga Arg	aca Thr	cag Gln	cag Gln 810	ata Ile	tac Tyr	gct Ala	agc Ser	ctc Leu 815	tcc Ser	2448
atc Ile	cgt Arg	gca Ala	aac Asn 820	gag Glu	gcg Ala	ggt Gly	atg Met	gat Asp 825	ccg Pro	aaa Lys	cag Gln	ttt Phe	gag Glu 830	caa Gln	gac Asp	2496
gtg Val	tta Leu	cca Pro 835	gag Glu	cac His	acc Thr	cag Gln	aca Thr 840	cgg Arg	cac His	ctg Leu	ttt Phe	gct Ala 845	tca Ser	ctg Leu	ggc Gly	2544
aag Lys	tct Ser 850	agc Ser	acg Thr	cct Pro	aac Asn	gat Asp 855	cac His	atg Met	gat Asp	ggt Gly	gat Asp 860	cta Leu	att Ile	ctc Leu	acc Thr	2592

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ccc aaa tac ttt gcg ccc gga agc atg acc ctc atg caa gaa agt gca	2688
Pro Lys Tyr Phe Ala Pro Gly Ser Met Thr Leu Met Gln Glu Ser Ala	
885 890 895	
ccg cca agc cgc aac att ggg gat ggc agc acc aag gac tat gtg gcc	2736
Pro Pro Ser Arg Asn Ile Gly Asp Gly Ser Thr Lys Asp Tyr Val Ala	
900 905 910	
act ctt gag tat cct aat gta aag ggg aac gac gga ctt cgt cca gcc	2784
Thr Leu Glu Tyr Pro Asn Val Lys Gly Asn Asp Gly Leu Arg Pro Ala	
915 920 925	
gag ctg tcc aca tac tcg att gtc ctg cct ccc gtg tcc gca ggc gca	2832
Glu Leu Ser Thr Tyr Ser Ile Val Leu Pro Pro Val Ser Ala Gly Ala	
930 935 940	
ggg att cct cgg gtg gct cag gag cca caa tcc cct cag cgc gtt gtc	2880
Gly Ile Pro Arg Val Ala Gln Glu Pro Gln Ser Pro Gln Arg Val Val	
945 950 955 960	
aat ttt ggg ata gat gtc acg gca agt gat cta aaa ata agt tca ttg	2928
Asn Phe Gly Ile Asp Val Thr Ala Ser Asp Leu Lys Ile Ser Ser Leu	
965 970 975	
gaa aag gtt cca gat aca agt gag ccg gca ttt atc gac gac agc ttg	2976
Glu Lys Val Pro Asp Thr Ser Glu Pro Ala Phe Ile Asp Asp Ser Leu	
980 985 990	
ccg gcc gaa gaa gct gcc aca gcc ccg aat aca cgc gaa tcc ata gga	3024
Pro Ala Glu Glu Ala Ala Thr Ala Pro Asn Thr Arg Glu Ser Ile Gly	
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tac ttt gtc tcc agc agc gca aat gtc cat ggt gac aac aca gat	3069
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35 40 45	
Ala Tyr Lys Asn Leu Thr Asp Lys Glu Phe Val Ile Tyr Tyr Asp Asn	
50 55 60	

Tyr Glu Ala Met Arg Lys Glu Ala Leu Ser Gln Ala Ile Ala Glu Tyr  
 65 70 75 80  
 Gln Leu Ile Leu Glu Gln Gly Ile Ser Lys Ala Glu Ala Ala Leu Tyr  
 85 90 95  
 Pro His Leu Arg Phe Pro Asn Val Thr Ser Ala Pro Ser Thr Pro Arg  
 100 105 110  
 Gly Gly Leu Leu Gln Thr Ser Thr His Asn Pro Asp Glu Leu Lys Ala  
 115 120 125  
 Lys Ile Ile Glu Arg His Ile Lys Glu Val Glu Leu Asn Leu Arg Gln  
 130 135 140  
 Arg Ile Ala Lys Glu Ala Gln Gln Gln Leu Gln Leu Glu Ala Ala Gln  
 145 150 155 160  
 Glu His Arg Leu Lys Ala Gln Glu Ile Glu Asn Arg Met Thr Ala Lys  
 165 170 175  
 Tyr Glu Asp Glu Ala Ile Lys Tyr Ile Leu Gln Glu Gln His Arg Leu  
 180 185 190  
 Glu Ile Phe Ser Ser Phe Gln Arg Gln Gln Glu Glu Cys Arg Lys Arg  
 195 200 205  
 Ser Tyr Ala Lys Thr Ile Gln Glu Met His Ala His Asp Ala Leu Leu  
 210 215 220  
 Gln Arg Arg Gln Arg Tyr Leu Asp Asp Gln Ser Val Arg Ser Lys Thr  
 225 230 235 240  
 Arg Ser Val Pro Arg Glu Glu Phe Leu Tyr Gln Leu Ala Gln Glu Arg  
 245 250 255  
 Lys Ala Glu Asp Arg Ala Arg Glu Leu Glu Phe Lys Glu Arg Gln Leu  
 260 265 270  
 Ile Arg Glu Gln Arg Ser Gln Arg Ala Gln Glu Lys Lys Arg Gln Glu  
 275 280 285  
 Val Glu Arg Leu Gln Gln Ser Leu Arg Glu Asn Gln Leu Arg His Thr  
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 Lys Val Phe Asn Glu Tyr Trp Glu Asp Val Ala Arg Ser Lys Ser Val  
 305 310 315 320  
 Asp His Ala Leu Arg Glu Asn Arg Arg Leu Ala Gly Ala Lys Arg Ala  
 325 330 335  
 Ser Thr Glu Lys Leu Lys Glu Asn Ala Glu Arg Ile Ser Glu Thr Ser  
 Seite 672

Gln Arg Ile Glu Val Thr Leu Lys Asn Phe Gly Lys Ile Tyr Arg Asn  
355 360 365

Lys Gln Asp Ala Lys Ala Arg Lys Leu Glu Glu Glu Glu Leu Arg Ser  
370 375 380

Ser Arg His Ile Leu Glu Thr Ser Val Asn Ala Arg Gln Arg Ala Leu  
385 390 395 400

Glu Asp Glu Leu Leu Lys Asp Leu Arg Thr Lys Arg Ala Glu Met His  
405 410 415

Leu Arg Arg Val Gln Tyr Glu Lys Glu Asn Val Leu Ser Asn Lys Glu  
420 425 430

Phe Lys Ala Ile Asn Ser Ile Arg Ala Leu Asn Met Thr Lys Glu Lys  
435 440 445

Glu Glu Glu Leu Met Ala Leu Ser Asn Lys Leu His Thr Gln Arg His  
450 455 460

Ile Leu Lys Gly Ser Gln Thr Ile Arg Asp Asp Gly Tyr Leu Asp Ile  
465 470 475 480

Pro Asp Asp Leu Arg Lys Leu Ala Pro Pro Glu Ser Ile Leu Lys Cys  
485 490 495

His Tyr Met Asp Glu Ala Ile Asp Met Leu Lys Gly Glu Glu Ser Phe  
500 505 510

Lys Arg Thr Leu Arg Met Val Pro Val Ser Glu Ser Tyr Ala Ser Val  
515 520 525

Tyr Lys Ser Ile Asp Thr Glu Pro Arg Lys Lys Lys Pro Thr Lys Ser  
530 535 540

Gln His Val Ala Arg His Asn Ser Ile Ser Asp Phe Ser Met Asp Thr  
545 550 555 560

Pro Asp Ser Gly Arg Pro Tyr Tyr Gln Val Lys Asn Ser Arg Pro Leu  
565 570 575

Arg Ser Ser Ser Asn Gly Asp Gly Leu Leu Val Glu Arg Arg Ser Lys  
580 585 590

Ser Leu Thr Arg Pro Arg Thr Ala Ser Arg Ser Gly Pro Ala Ala Leu  
595 600 605

Asp Ser Ser Arg Thr Asp Ser Thr Pro Gly Ser Ser Tyr Leu Gly Gly  
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His 625 His Ser Gly Ala Gln 630 Val Ala Ser Val Pro 635 Leu Arg Pro Gly Asp 640  
 Ala Ser Arg Pro Lys 645 Lys Ala Ala Lys Arg 650 Gly Ser Ser Lys Ser 655 Lys  
 Val Ser His Asn 660 Ser Met Arg Ser Ala 665 Ser Asp Ser Thr Ile 670 Glu Thr  
 Pro Gln Trp 675 Ser Asp Ser Val Ser 680 Ser Asn Ile Ser Ser 685 Thr Lys Lys  
 Lys Ala Thr Arg Leu Arg Ser 695 Asp Asp Ala Asn Leu 700 Ser Val Ser Leu  
 Pro 705 Leu Pro Ala Leu Lys 710 Gly Pro Gly Ser Gly 715 Leu Ile Glu Glu Glu 720  
 Lys Lys Arg Asn Ala 725 Thr Val Arg Gln Ser 730 Lys Lys Glu Arg Pro 735 Arg  
 Asp Ser Gln Arg 740 Asn Lys Ser Lys Thr 745 Asp Thr Glu Ala Ala 750 Gln Asp  
 Ser Leu Leu 755 Arg Asn Gln Ser Leu 760 Glu Ile Val Arg Gln 765 Leu Ser Gln  
 Leu Thr 770 Lys Leu Asn Lys Pro 775 Ala Ile Ser Asn Phe 780 Pro Pro Pro Asp  
 Glu 785 Arg Arg Glu Leu Leu 790 Gly Lys Leu Thr Gly 795 Ala Thr Gln Glu Pro 800  
 Asp Tyr Asp Thr Glu 805 Asn Arg Thr Gln Gln 810 Ile Tyr Ala Ser Leu 815 Ser  
 Ile Arg Ala Asn 820 Glu Ala Gly Met Asp 825 Pro Lys Gln Phe Glu 830 Gln Asp  
 Val Leu Pro 835 Glu His Thr Gln Thr 840 Arg His Leu Phe Ala 845 Ser Leu Gly  
 Lys Ser 850 Ser Thr Pro Asn Asp 855 His Met Asp Gly Asp 860 Leu Ile Leu Thr  
 Thr 865 Phe Ser Lys Ala Thr 870 Pro Glu Ala Thr Gln 875 Ile Asn Asp Asp Thr 880  
 Pro Lys Tyr Phe Ala 885 Pro Gly Ser Met Thr 890 Leu Met Gln Glu Ser 895 Ala

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Pro Pro Ser Arg Asn Ile Gly Asp Gly Ser Thr Lys Asp Tyr Val Ala  
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Thr Leu Glu Tyr Pro Asn Val Lys Gly Asn Asp Gly Leu Arg Pro Ala  
915 920 925

Glu Leu Ser Thr Tyr Ser Ile Val Leu Pro Pro Val Ser Ala Gly Ala  
930 935 940

Gly Ile Pro Arg Val Ala Gln Glu Pro Gln Ser Pro Gln Arg Val Val  
945 950 955 960

Asn Phe Gly Ile Asp Val Thr Ala Ser Asp Leu Lys Ile Ser Ser Leu  
965 970 975

Glu Lys Val Pro Asp Thr Ser Glu Pro Ala Phe Ile Asp Asp Ser Leu  
980 985 990

Pro Ala Glu Glu Ala Ala Thr Ala Pro Asn Thr Arg Glu Ser Ile Gly  
995 1000 1005

Tyr Phe Val Ser Ser Ser Ala Asn Val His Gly Asp Asn Thr Asp  
1010 1015 1020

Glu Glu Asn  
1025

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Glu Lys Glu Ser Asp Thr Tyr Arg Arg Pro Gln Arg Ser Arg His Lys  
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cgc ttc gcc caa gac gat gaa tac gat gaa ttg aaa cat gga agt cga 144  
Arg Phe Ala Gln Asp Asp Glu Tyr Asp Glu Leu Lys His Gly Ser Arg  
35 40 45

atg tcc ccg cca ctt ccc gtg gac gag ttg acg cgt cta cac ata caa 192  
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50 55 60

gaa cgg tca aag ccc gac ttt att cat gag agc ttt gat cca ccg cgg 240  
Glu Arg Ser Lys Pro Asp Phe Ile His Glu Ser Phe Asp Pro Pro Arg  
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tac cct ggc cct ctc gct gtg atg cga gag agg gag gaa aat gag atg 288

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Tyr	Pro	Gly	Pro	Leu	Ala	Val	Met	Arg	Glu	Arg	Glu	Glu	Asn	Glu	Met	
				85					90					95		
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Asp	Met	Leu	Pro	Pro	Glu	Thr	Leu	Arg	Gly	Tyr	Glu	Leu	Asp	Arg	His	
			100					105					110			
gag	cgt	cgt	gag	cga	cct	cgg	cat	agg	aga	act	gct	aag	ggg	gag	gat	384
Glu	Arg	Arg	Glu	Arg	Pro	Arg	His	Arg	Arg	Thr	Ala	Lys	Gly	Glu	Asp	
		115					120					125				
gtt	tat	ttt	cag	gag	aaa	tcg	caa	aga	cag	agg	tat	aca	agg	gct	gaa	432
Val	Tyr	Phe	Gln	Glu	Lys	Ser	Gln	Arg	Gln	Arg	Tyr	Thr	Arg	Ala	Glu	
	130					135					140					
tat	gac	gag	gga	gaa	ttt	gag	ctg	caa	agg	gaa	agg	cca	tca	ata	ccg	480
Tyr	Asp	Glu	Gly	Glu	Phe	Glu	Leu	Gln	Arg	Glu	Arg	Pro	Ser	Ile	Pro	
145					150					155					160	
cga	tcc	aac	ttg	gat	agc	gat	gag	gaa	ctt	gta	cgt	tta	cgt	agc	gac	528
Arg	Ser	Asn	Leu	Asp	Ser	Asp	Glu	Glu	Leu	Val	Arg	Leu	Arg	Ser	Asp	
				165					170					175		
aag	aaa	ggg	aag	aaa	ggc	tcg	cgc	gtg	aag	cac	gcg	gat	ctt	gag	att	576
Lys	Lys	Gly	Lys	Lys	Gly	Ser	Arg	Val	Lys	His	Ala	Asp	Leu	Glu	Ile	
			180					185					190			
gag	cga	gat	gag	ctt	tat	cgc	cgt	ggg	tct	gac	gcc	agg	tgg	gag	cac	624
Glu	Arg	Asp	Glu	Leu	Tyr	Arg	Arg	Gly	Ser	Asp	Ala	Arg	Trp	Glu	His	
		195					200					205				
acc	agg	ctt	cac	agt	gat	gtt	aga	gaa	cgc	aca	cca	gca	gca	cac	tta	672
Thr	Arg	Leu	His	Ser	Asp	Val	Arg	Glu	Arg	Thr	Pro	Ala	Ala	His	Leu	
	210					215					220					
cga	tcc	cac	cgg	cac	cgg	cag	ccg	gat	gga	gac	gaa	gag	gat	gca	gag	720
Arg	Ser	His	Arg	His	Arg	Gln	Pro	Asp	Gly	Asp	Glu	Glu	Asp	Ala	Glu	
225					230					235					240	
gat	atc	att	atc	caa	aga	gat	gag	cgg	agg	ggg	cga	agc	ggc	agg	ttc	768
Asp	Ile	Ile	Ile	Gln	Arg	Asp	Glu	Arg	Arg	Gly	Arg	Ser	Gly	Arg	Phe	
				245					250					255		
aag	gaa	aag	gaa	aag	att	acc	atg	cga	gaa	aga	gaa	atc	tcg	acg	tct	816
Lys	Glu	Lys	Glu	Lys	Ile	Thr	Met	Arg	Glu	Arg	Glu	Ile	Ser	Thr	Ser	
			260					265					270			
ccg	gag	tcg	cca	agt	tcg	aga	gag	ctt	tcg	cag	gtc	cgg	aag	tct	cat	864
Pro	Glu	Ser	Pro	Ser	Ser	Arg	Glu	Leu	Ser	Gln	Val	Arg	Lys	Ser	His	
		275					280					285				
gtt	aca	tct	cgt	gaa	cgc	atg	aga	gat	ggg	tat	gaa	ctg	cct	cgt	gca	912
Val	Thr	Ser	Arg	Glu	Arg	Met	Arg	Asp	Gly	Tyr	Glu	Leu	Pro	Arg	Ala	
	290					295					300					
cca	ctt	gca	ccc	agt	cca	gat	cct	tct	tct	cca	agt	agc	ttc	gag	gag	960
Pro	Leu	Ala	Pro	Ser	Pro	Asp	Pro	Ser	Ser	Pro	Ser	Ser	Phe	Glu	Glu	
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ttg	gag	att	cgt	cac	cgt	aca	cgg	gga	cgc	cca	agg	aag	gag	aag	att	1008
Leu	Glu	Ile	Arg	His	Arg	Thr	Arg	Gly	Arg	Pro	Arg	Lys	Glu	Lys	Ile	
				325				330						335		
att	ata	gaa	cga	cgc	gat	gat	act	tca	cct	cca	tca	ata	ctt	tca	tcc	1056
Ile	Ile	Glu	Arg	Arg	Asp	Asp	Thr	Ser	Pro	Pro	Ser	Ile	Leu	Ser	Ser	
			340				345						350			
tca	gaa	tca	ggc	aac	aaa	agc	gag	gac	gaa	ctt	gac	atc	act	cac	gca	1104
Ser	Glu	Ser	Gly	Asn	Lys	Ser	Glu	Asp	Glu	Leu	Asp	Ile	Thr	His	Ala	



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aat ctc aag acc tca aac aga aga gag gac gtt ttg att atg gaa cgt Asn Leu Lys Thr Ser Asn Arg Arg Glu Asp Val Leu Ile Met Glu Arg	370	375	380 1152
caa ccc caa ccc cac gag agt gat gaa gag gtc cat gtc ttt gag gag Gln Pro Gln Pro His Glu Ser Asp Glu Glu Val His Val Phe Glu Glu	385	390	395 400 1200
gaa cag tac acc cgg cac gat gcg gga ggg cct cag cga cgg agc aca Glu Gln Tyr Thr Arg His Asp Ala Gly Gly Pro Gln Arg Arg Ser Thr	405	410	415 1248
cct aca gtc acg att gaa gat aaa gcg ata gtt cgg gcc gat tca gga Pro Thr Val Thr Ile Glu Asp Lys Ala Ile Val Arg Ala Asp Ser Gly	420	425	430 1296
agt cat ggc agt gca gac cag cag atg cga cgg gag cgc cgt gta tcc Ser His Gly Ser Ala Asp Gln Gln Met Arg Arg Glu Arg Arg Val Ser	435	440	445 1344
aca cag cga tcc cga tcc atc aag ggc cac aga agg ctg tct gac gag Thr Gln Arg Ser Arg Ser Ile Lys Gly His Arg Arg Leu Ser Asp Glu	450	455	460 1392
aac atc gac tgc aaa gac ggt cga atc gga cgg cga tac att ggc gta Asn Ile Asp Cys Lys Asp Gly Arg Ile Gly Arg Arg Tyr Ile Gly Val	465	470	475 480 1440
aaa gac aag cga gat cga ctc tgg aca gaa atc acc aag gac ctg gtg Lys Asp Lys Arg Asp Arg Leu Trp Thr Glu Ile Thr Lys Asp Leu Val	485	490	495 1488
gtc agg gag gcc att gag cgg gcc ggc tat gaa tac gag gaa acg gac Val Arg Glu Ala Ile Glu Arg Ala Gly Tyr Glu Tyr Glu Glu Thr Asp	500	505	510 1536
tcg ttc tat tac ata ttc tcg tat ctt gga tat gac gat ata tcg gct Ser Phe Tyr Tyr Ile Phe Ser Tyr Leu Gly Tyr Asp Asp Ile Ser Ala	515	520	525 1584
ctt gtc gca cta tcg gag gac atc cgc cgc gca cga cgc caa cga att Leu Val Ala Leu Ser Glu Asp Ile Arg Arg Ala Arg Arg Gln Arg Ile	530	535	540 1632
cag gag atc agg agg gag cga ggc tcc atg cgt att cca ttt gca cct Gln Glu Ile Arg Arg Glu Arg Gly Ser Met Arg Ile Pro Phe Ala Pro	545	550	555 560 1680
gag cca gtt aca ccc gct ccc gtg tta ccg ggg agg ccg ccg tct ccg Glu Pro Val Thr Pro Ala Pro Val Leu Pro Gly Arg Pro Pro Ser Pro	565	570	575 1728
cgc ctc cgg act cgg gat gag cgg aga ctt aag aaa gag cgg gag ctc Arg Leu Arg Thr Arg Asp Glu Arg Arg Leu Lys Lys Glu Arg Glu Leu	580	585	590 1776
att att gaa gaa gga cgg tgg aga cca ggt cca gct cca ttg aag aga Ile Ile Glu Glu Gly Arg Trp Arg Pro Gly Pro Ala Pro Leu Lys Arg	595	600	605 1824
tgg tga Trp			1830

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&lt;211&gt; 609

&lt;212&gt; PRT

<213> *Aspergillus fumigatus* Af293

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Glu Lys Glu Ser Asp Thr Tyr Arg Arg Pro Gln Arg Ser Arg His Lys  
 20 25 30

Arg Phe Ala Gln Asp Asp Glu Tyr Asp Glu Leu Lys His Gly Ser Arg  
 35 40 45

Met Ser Pro Pro Leu Pro Val Asp Glu Leu Thr Arg Leu His Ile Gln  
 50 55 60

Glu Arg Ser Lys Pro Asp Phe Ile His Glu Ser Phe Asp Pro Pro Arg  
 65 70 75 80

Tyr Pro Gly Pro Leu Ala Val Met Arg Glu Arg Glu Glu Asn Glu Met  
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Asp Met Leu Pro Pro Glu Thr Leu Arg Gly Tyr Glu Leu Asp Arg His  
 100 105 110

Glu Arg Arg Glu Arg Pro Arg His Arg Arg Thr Ala Lys Gly Glu Asp  
 115 120 125

Val Tyr Phe Gln Glu Lys Ser Gln Arg Gln Arg Tyr Thr Arg Ala Glu  
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Tyr Asp Glu Gly Glu Phe Glu Leu Gln Arg Glu Arg Pro Ser Ile Pro  
 145 150 155 160

Arg Ser Asn Leu Asp Ser Asp Glu Glu Leu Val Arg Leu Arg Ser Asp  
 165 170 175

Lys Lys Gly Lys Lys Gly Ser Arg Val Lys His Ala Asp Leu Glu Ile  
 180 185 190

Glu Arg Asp Glu Leu Tyr Arg Arg Gly Ser Asp Ala Arg Trp Glu His  
 195 200 205

Thr Arg Leu His Ser Asp Val Arg Glu Arg Thr Pro Ala Ala His Leu  
 210 215 220

Arg Ser His Arg His Arg Gln Pro Asp Gly Asp Glu Glu Asp Ala Glu  
 225 230 235 240

Asp Ile Ile Ile Gln Arg Asp Glu Arg Arg Gly Arg Ser Gly Arg Phe  
 245 250 255

Lys Glu Lys Glu Lys Ile Thr Met Arg Glu Arg Glu Ile Ser Thr Ser  
260 265 270

Pro Glu Ser Pro Ser Ser Arg Glu Leu Ser Gln Val Arg Lys Ser His  
275 280 285

Val Thr Ser Arg Glu Arg Met Arg Asp Gly Tyr Glu Leu Pro Arg Ala  
290 295 300

Pro Leu Ala Pro Ser Pro Asp Pro Ser Ser Pro Ser Ser Phe Glu Glu  
305 310 315 320

Leu Glu Ile Arg His Arg Thr Arg Gly Arg Pro Arg Lys Glu Lys Ile  
325 330 335

Ile Ile Glu Arg Arg Asp Asp Thr Ser Pro Pro Ser Ile Leu Ser Ser  
340 345 350

Ser Glu Ser Gly Asn Lys Ser Glu Asp Glu Leu Asp Ile Thr His Ala  
355 360 365

Asn Leu Lys Thr Ser Asn Arg Arg Glu Asp Val Leu Ile Met Glu Arg  
370 375 380

Gln Pro Gln Pro His Glu Ser Asp Glu Glu Val His Val Phe Glu Glu  
385 390 395 400

Glu Gln Tyr Thr Arg His Asp Ala Gly Gly Pro Gln Arg Arg Ser Thr  
405 410 415

Pro Thr Val Thr Ile Glu Asp Lys Ala Ile Val Arg Ala Asp Ser Gly  
420 425 430

Ser His Gly Ser Ala Asp Gln Gln Met Arg Arg Glu Arg Arg Val Ser  
435 440 445

Thr Gln Arg Ser Arg Ser Ile Lys Gly His Arg Arg Leu Ser Asp Glu  
450 455 460

Asn Ile Asp Cys Lys Asp Gly Arg Ile Gly Arg Arg Tyr Ile Gly Val  
465 470 475 480

Lys Asp Lys Arg Asp Arg Leu Trp Thr Glu Ile Thr Lys Asp Leu Val  
485 490 495

Val Arg Glu Ala Ile Glu Arg Ala Gly Tyr Glu Tyr Glu Glu Thr Asp  
500 505 510

Ser Phe Tyr Tyr Ile Phe Ser Tyr Leu Gly Tyr Asp Asp Ile Ser Ala  
515 520 525

Leu Val Ala Leu Ser Glu Asp Ile Arg Arg Ala Arg Arg Gln Arg Ile

530

535

540

Gln Glu Ile Arg Arg Glu Arg Gly Ser Met Arg Ile Pro Phe Ala Pro  
 545 550 555 560

Glu Pro Val Thr Pro Ala Pro Val Leu Pro Gly Arg Pro Pro Ser Pro  
 565 570 575

Arg Leu Arg Thr Arg Asp Glu Arg Arg Leu Lys Lys Glu Arg Glu Leu  
 580 585 590

Ile Ile Glu Glu Gly Arg Trp Arg Pro Gly Pro Ala Pro Leu Lys Arg  
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Trp

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 caa tat gcc tca cat gac tgt gat ggg gca gta cta aag aag aaa gac 96  
 Gln Tyr Ala Ser His Asp Cys Asp Gly Ala Val Leu Lys Lys Lys Asp  
 20 25 30  
 cta aag atc ctt ctt gac agg gaa ttt gga gct gtc ctt cag aga cca 144  
 Leu Lys Ile Leu Leu Asp Arg Glu Phe Gly Ala Val Leu Gln Arg Pro  
 35 40 45  
 cat gac cct gag acg gta gac gtg atg cta gaa ctt ctg gat cgc gac 192  
 His Asp Pro Glu Thr Val Asp Val Met Leu Glu Leu Leu Asp Arg Asp  
 50 55 60  
 tct gat ggt ctg gtc ggg ttc gat gaa ttc tgc cta ctt att ttc aag 240  
 Ser Asp Gly Leu Val Gly Phe Asp Glu Phe Cys Leu Leu Ile Phe Lys  
 65 70 75 80  
 ttg gct caa gcg gct tat tat gca ctt ggc cag gcc tca ggg tta gac 288  
 Leu Ala Gln Ala Ala Tyr Tyr Ala Leu Gly Gln Ala Ser Gly Leu Asp  
 85 90 95  
 gag gaa aag cgg tcc cac ggt gag ggc aag ggg cgc ctg tta caa aat 336  
 Glu Glu Lys Arg Ser His Gly Glu Gly Lys Gly Arg Leu Leu Gln Asn  
 100 105 110  
 cgc agg caa gaa gat caa agg aga ttc gaa ctc cgg gac aga caa ttc 384  
 Arg Arg Gln Glu Asp Gln Arg Arg Phe Glu Leu Arg Asp Arg Gln Phe  
 115 120 125  
 gaa gat gaa cca gag cga cga cgc tgg caa aag cag gaa cag gag agg 432  
 Glu Asp Glu Pro Glu Arg Arg Arg Trp Gln Lys Gln Glu Gln Glu Arg  
 130 135 140

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cag Gln	cac His	tac Tyr	agt Ser	agg Arg 165	cag Gln	tac Tyr	cgc Arg	gac Asp	aag Lys 170	gag Glu	cag Gln	cgg Arg	ctc Leu	caa Gln 175	agg Arg	528
caa Gln	gaa Glu	cta Leu	gaa Glu 180	gag Glu	cgc Arg	cgc Arg	gca Ala	gag Glu 185	gaa Glu	gag Glu	cag Gln	ctg Leu	cga Arg 190	agg Arg	cgc Arg	576
aag Lys	ggt Gly	cgc Arg 195	gac Asp	gca Ala	gag Glu	gag Glu	ttc Phe 200	att Ile	gag Glu	gaa Glu	gag Glu	cag Gln 205	ctg Leu	cga Arg	agg Arg	624
cga Arg	gag Glu 210	cag Gln	caa Gln	gag Glu	ctg Leu	aag Lys 215	agg Arg	gag Glu	ctc Leu	cgc Arg	gag Glu 220	gag Glu	gag Glu	cag Gln	caa Gln	672
agg Arg 225	cga Arg	gag Glu	cgc Arg	cga Arg	gag Glu 230	cag Gln	cac His	gag Glu	cgg Arg	gca Ala 235	ctc Leu	cag Gln	gag Glu	gaa Glu	gaa Glu 240	720
gag Glu	cag Gln	ctg Leu	ctg Leu	aga Arg 245	cag Gln	agg Arg	cgc Arg	tgg Trp	cgc Arg 250	gag Glu	gaa Glu	cca Pro	cgc Arg	gag Glu 255	cag Gln	768
cag Gln	cag Gln	ctg Leu	agg Arg 260	cgc Arg	gag Glu	ctg Leu	gaa Glu	gag Glu 265	ata Ile	cgc Arg	gaa Glu	cgc Arg	gag Glu 270	cag Gln	aga Arg	816
ctt Leu	gag Glu	cag Gln 275	gag Glu	gag Glu	agg Arg	cgc Arg	gag Glu 280	cag Gln	cag Gln	ctg Leu	agg Arg	cgc Arg 285	gag Glu	cag Gln	aga Arg	864
ctt Leu	gag Glu 290	cag Gln	gag Glu	gag Glu	agg Arg	cgc Arg 295	gag Glu	cag Gln	cag Gln	ctg Leu	agg Arg 300	cgc Arg	gag Glu	ctg Leu	gaa Glu	912
gag Glu 305	ata Ile	cgc Arg	gaa Glu	cgc Arg	gag Glu 310	cag Gln	agg Arg	ctt Leu	gag Glu	cag Gln 315	gag Glu	gag Glu	agg Arg	cgc Arg	gag Glu 320	960
cag Gln	cga Arg	ctt Leu	gag Glu	cag Gln 325	gag Glu	gag Glu	agg Arg	cgc Arg	gag Glu 330	cag Gln	cag Gln	ctg Leu	aag Lys	cgc Arg 335	gag Glu	1008
ctg Leu	gaa Glu	gag Glu	ata Ile 340	cgc Arg	gaa Glu	cgc Arg	gag Glu	cag Gln 345	agg Arg	ctt Leu	gag Glu	cag Gln	gag Glu 350	gag Glu	agg Arg	1056
cgc Arg	gag Glu	cag Gln 355	ctg Leu	ctg Leu	gct Ala	gag Glu	gag Glu 360	gtg Val	cgg Arg	gaa Glu	cag Gln	gcc Ala 365	cgg Arg	gag Glu	cga Arg	1104
ggc Gly	gag Glu 370	agc Ser	ctc Leu	acc Thr	cgg Arg	agg Arg 375	tgg Trp	cag Gln	cgg Arg	cag Gln	cta Leu 380	gag Glu	agt Ser	gag Glu	gcc Ala	1152
ggc Gly 385	gca Ala	cgt Arg	cag Gln	agc Ser	aaa Lys 390	gtc Val	tac Tyr	tcc Ser	agg Arg	ccc Pro 395	cgc Arg	agg Arg	cag Gln	gaa Glu	gag Glu 400	1200
cag Gln	agt Ser	ctc Leu	cgc Arg	cag Gln 405	gac Asp	cag Gln	gag Glu	agg Arg	agg Arg 410	cag Gln	cgc Arg	cag Gln	gaa Glu	cgt Arg 415	gaa Glu	1248

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gaa	gag	agc	gag	agg	cgc	cgc	cag	agg	ctg	tcg	gcc	agg	ccc	tcg	ttg	1344
Glu	Glu	Ser	Glu	Arg	Arg	Arg	Gln	Arg	Leu	Ser	Ala	Arg	Pro	Ser	Leu	
		435					440					445				
cgc	gag	agg	cag	ctg	agg	gcc	gag	gag	cgc	cag	gag	cag	gaa	caa	cgg	1392
Arg	Glu	Arg	Gln	Leu	Arg	Ala	Glu	Glu	Arg	Gln	Glu	Gln	Glu	Gln	Arg	
	450					455					460					
ttc	cgg	gag	gag	gag	gag	cag	cgg	cgc	gag	agg	agg	cag	gag	ctg	cag	1440
Phe	Arg	Glu	Glu	Glu	Glu	Gln	Arg	Arg	Glu	Arg	Arg	Gln	Glu	Leu	Gln	
465					470					475					480	
ttc	ctc	gag	gag	gag	gag	cag	ctc	cag	cga	cgg	gag	cgt	gcc	caa	cag	1488
Phe	Leu	Glu	Glu	Glu	Glu	Gln	Leu	Gln	Arg	Arg	Glu	Arg	Ala	Gln	Gln	
				485					490					495		
ctc	cag	gaa	gag	gac	agc	ttt	cag	gag	gat	cgg	gag	agg	agg	cga	cgc	1536
Leu	Gln	Glu	Glu	Asp	Ser	Phe	Gln	Glu	Asp	Arg	Glu	Arg	Arg	Arg	Arg	
			500					505					510			
caa	cag	gag	cag	cgc	ccc	ggc	caa	aca	tgg	agg	tgg	caa	ctc	cag	gaa	1584
Gln	Gln	Glu	Gln	Arg	Pro	Gly	Gln	Thr	Trp	Arg	Trp	Gln	Leu	Gln	Glu	
		515					520					525				
gaa	gcc	caa	aga	cgc	cgt	cac	acg	ctg	tac	gcc	aaa	ccg	ggg	cag	cag	1632
Glu	Ala	Gln	Arg	Arg	Arg	His	Thr	Leu	Tyr	Ala	Lys	Pro	Gly	Gln	Gln	
	530					535					540					
gag	cag	ctg	agg	gag	gaa	gag	gag	ctg	caa	agg	gag	aag	agg	cgc	cag	1680
Glu	Gln	Leu	Arg	Glu	Glu	Glu	Glu	Leu	Gln	Arg	Glu	Lys	Arg	Arg	Gln	
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gag	cgg	gag	aga	gaa	tat	cgg	gag	gaa	gag	aaa	ctg	cag	aga	gag	gaa	1728
Glu	Arg	Glu	Arg	Glu	Tyr	Arg	Glu	Glu	Glu	Lys	Leu	Gln	Arg	Glu	Glu	
				565					570					575		
gac	gag	aag	aga	cga	cgc	cag	gaa	cgc	gag	aga	caa	tac	cgg	gag	tta	1776
Asp	Glu	Lys	Arg	Arg	Arg	Gln	Glu	Arg	Glu	Arg	Gln	Tyr	Arg	Glu	Leu	
			580					585					590			
gag	gag	ctg	cgg	cag	gaa	gag	cag	ctg	cgt	gac	agg	aaa	ctc	cgc	gag	1824
Glu	Glu	Leu	Arg	Gln	Glu	Glu	Gln	Leu	Arg	Asp	Arg	Lys	Leu	Arg	Glu	
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Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	
	610					615					620					
gaa	cgc	gag	agg	aaa	ctc	cgc	gag	gag	gag	cag	ctg	ctg	cgc	cag	gag	1920
Glu	Arg	Glu	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Arg	Gln	Glu	
625					630					635					640	
gag	cag	gag	ctc	cgc	cag	gaa	cgc	gag	agg	aaa	ctc	cgc	gag	gag	gag	1968
Glu	Gln	Glu	Leu	Arg	Gln	Glu	Arg	Glu	Arg	Lys	Leu	Arg	Glu	Glu	Glu	
				645					650					655		
cag	ctg	ctg	cgt	cgg	gag	gag	cag	gag	ctc	cgc	cag	gaa	cgc	gag	agg	2016
Gln	Leu	Leu	Arg	Arg	Glu	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Arg	Glu	Arg	
			660					665					670			
aaa	ctc	cgc	gaa	gag	gag	cag	ctg	ctt	cag	gag	agg	gag	gaa	gag	agg	2064
Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	Glu	Glu	Glu	Arg	
		675					680					685				
ctg	cgc	cgt	cag	gaa	cgc	gcc	agg	aaa	ctc	cgt	gag	gag	gag	cag	ctg	2112

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Leu	Arg	Gln	Glu	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Arg	Glu	Arg	Lys	Leu	
705					710					715					720	
cgc	gag	gag	gag	cag	ctg	ctg	aga	cgc	gag	gag	cag	cta	ctg	cgc	cag	2208
Arg	Glu	Glu	Glu	Gln	Leu	Leu	Arg	Arg	Glu	Glu	Gln	Leu	Leu	Arg	Gln	
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gaa	cgc	gac	agg	aaa	ctc	cgc	gaa	gag	gag	cag	ctc	ctt	cag	gaa	agc	2256
Glu	Arg	Asp	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	Ser	
			740					745					750			
gag	gaa	gag	agg	ctg	cgt	cgc	cag	gaa	cgc	gag	caa	caa	ctt	cgt	cgg	2304
Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	Glu	Arg	Glu	Gln	Gln	Leu	Arg	Arg	
		755					760					765				
gag	cgc	gac	aga	aag	ttc	cgc	gag	gag	gag	cag	ctc	ctt	cag	gag	agg	2352
Glu	Arg	Asp	Arg	Lys	Phe	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	
	770				775						780					
gag	gaa	gag	cgg	ctg	cgc	cgt	cag	gaa	cgc	gag	agg	aaa	ctc	cgt	gag	2400
Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	Glu	Arg	Glu	Arg	Lys	Leu	Arg	Glu	
785					790					795					800	
gag	gag	cag	ctc	ctt	cag	gag	agg	gag	gaa	gag	cgg	ctg	cgc	cgt	cag	2448
Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	
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Glu	Arg	Glu	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	
			820					825					830			
gag	gaa	gag	cgg	ctg	cgc	cgt	cag	gaa	cgc	gag	agg	aaa	ctc	cgt	gag	2544
Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	Glu	Arg	Glu	Arg	Lys	Leu	Arg	Glu	
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gag	gag	cag	ctg	ctg	cgc	cag	gag	gag	cag	gag	ctc	cgc	cag	gaa	cgc	2592
Glu	Glu	Gln	Leu	Leu	Arg	Gln	Glu	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Arg	
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gcc	agg	aaa	ctc	cgt	gag	gag	gag	cag	ctg	ctg	cgc	cag	gag	gag	cag	2640
Ala	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Arg	Gln	Glu	Glu	Gln	
865					870					875					880	
gag	ctc	cgc	cag	gaa	cgc	gac	agg	aaa	ctc	cgc	gag	gag	gag	cag	ctg	2688
Glu	Leu	Arg	Gln	Glu	Arg	Asp	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	
				885					890					895		
ctg	cgc	cag	gag	gag	cag	gag	ctc	cgc	cag	gaa	cgc	gac	agg	aaa	ctc	2736
Leu	Arg	Gln	Glu	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Arg	Asp	Arg	Lys	Leu	
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cgc	gaa	gag	gag	cag	ctc	ctt	cag	gaa	agc	gag	gaa	gag	agg	ctg	cgc	2784
Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	Ser	Glu	Glu	Glu	Arg	Leu	Arg	
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cgt	cag	gaa	cgc	gag	agg	aaa	ctc	cgt	gaa	gag	gag	cag	ctg	ctg	cgt	2832
Arg	Gln	Glu	Arg	Glu	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Arg	
	930					935						940				
cgg	gag	gag	cag	gag	ctc	cgt	cgg	gaa	cgc	gcc	agg	aaa	ctc	cgt	gag	2880
Arg	Glu	Glu	Gln	Glu	Leu	Arg	Arg	Glu	Arg	Ala	Arg	Lys	Leu	Arg	Glu	
945					950					955					960	
gag	gag	cag	ctg	ctt	cag	gag	agg	gag	gaa	gag	agg	ctg	cgc	cgt	cag	2928
Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	

gag cgc gcc agg aaa ctc cgt gag gag gag cag ctg ctg cgc cgg gag Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu Gln Leu Leu Arg Arg Glu	2976
gag cag gag ctt cgt cag gag cgc gac aga aag ttc cgc gaa gag gag Glu Gln Glu Leu Arg Gln Glu Arg Asp Arg Lys Phe Arg Glu Glu Glu	3024
cag ctg ctt cag gag agg gag gaa gag agg ctg cgc cgt cag gaa Gln Leu Leu Gln Glu Arg Glu Glu Glu Arg Leu Arg Gln Glu	3069
cgc gac aga aag ttc cgc gag gaa gaa aga cag ctt cgt cgc cag Arg Asp Arg Lys Phe Arg Glu Glu Glu Arg Gln Leu Arg Arg Gln	3114
gaa ctc gag gaa cag ttt cgt cag gag cgc gat aga aaa ttc cgc Glu Leu Glu Glu Gln Phe Arg Glu Gln Glu Arg Asp Arg Lys Phe Arg	3159
tta gag gaa cag atc cgc cag gag aag gag gaa aag cag ctg cgc Leu Glu Glu Gln Ile Arg Gln Glu Lys Glu Glu Lys Gln Leu Arg	3204
cgt cag gag cgc gac agg aaa ttc cgc gag gag gag cag cag cga Arg Gln Glu Arg Asp Arg Lys Phe Arg Glu Glu Glu Gln Gln Arg	3249
cgc cgc cag gaa cgc gag caa caa ctt cgt cgg gag cgc gac aga Arg Arg Gln Glu Arg Glu Gln Leu Arg Arg Glu Arg Asp Arg	3294
aag ttc cgc gag gag gag cag ctc ctt cag gag agg gag gaa gag Lys Phe Arg Glu Glu Glu Gln Leu Leu Gln Glu Arg Glu Glu Glu	3339
cgg ctg cgc cgt cag gag cgc gcc agg aaa ctc cgc gag gag gag Arg Leu Arg Arg Gln Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu	3384
cag ctg ctg aga cgc gag gag cag cta ctg cgc cag gaa cgc gac Gln Leu Leu Arg Arg Glu Gln Leu Leu Arg Gln Glu Arg Asp	3429
aga aag ttc cgc gag gag gag cag ctg ctt cag gaa agc gag gaa Arg Lys Phe Arg Glu Glu Glu Gln Leu Leu Gln Glu Ser Glu Glu	3474
gag agg ctg cgc cgc cag gaa cgc gag agg aaa ctc cgc gag gag Glu Arg Leu Arg Arg Gln Glu Arg Glu Arg Lys Leu Arg Glu Glu	3519
gag cag ctg ctt cag gaa agg gag gaa gag cgg ctg cgc cgt cag Glu Gln Leu Leu Gln Glu Arg Glu Glu Glu Arg Leu Arg Arg Gln	3564
gag cgc gcc agg aaa ctc cgc gag gag gag cag ctg ctg cgc cag Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu Gln Leu Leu Arg Gln	3609
gag gag cag gag ctc cgc cag gaa cgc gcc agg aaa ctc cgc gag Glu Glu Gln Glu Leu Arg Gln Glu Arg Ala Arg Lys Leu Arg Glu	3654
gag gag cag ctg ctg cgc cag gag gag cag gag ctc cgc cag gaa Glu Glu Gln Leu Leu Arg Gln Glu Glu Gln Glu Leu Arg Gln Glu	3699



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gag	cag	gag	ctc	cgt	cgg	gag	cgc	gac	aga	aag	ttc	cgc	gag	gag	3789
Glu	Gln	Glu	Leu	Arg	Arg	Glu	Arg	Asp	Arg	Lys	Phe	Arg	Glu	Glu	
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gag	cag	ctg	ctt	cag	gaa	agg	gag	gaa	gag	cgg	ctg	cgc	cgt	cag	3834
Glu	Gln	Leu	Leu	Gln	Glu	Arg	Glu	Glu	Glu	Arg	Leu	Arg	Arg	Gln	
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gag	cgc	gcc	agg	aaa	ctc	cgc	gag	gaa	gaa	gag	caa	ctg	ctg	ttt	3879
Glu	Arg	Ala	Arg	Lys	Leu	Arg	Glu	Glu	Glu	Glu	Gln	Leu	Leu	Phe	
	1280					1285					1290				
gag	gag	cag	gaa	gag	cag	agg	ctc	cgg	cag	gag	cga	gac	cgg	cgg	3924
Glu	Glu	Gln	Glu	Glu	Gln	Arg	Leu	Arg	Gln	Glu	Arg	Asp	Arg	Arg	
	1295					1300					1305				
tac	cga	gca	gag	gag	cag	ttt	gcc	aga	gag	gag	aag	agc	cgt	cgt	3969
Tyr	Arg	Ala	Glu	Glu	Gln	Phe	Ala	Arg	Glu	Glu	Lys	Ser	Arg	Arg	
	1310					1315					1320				
ctg	gaa	aga	gag	ctg	cgt	caa	gaa	gaa	gag	cag	aga	cgc	cgc	cgg	4014
Leu	Glu	Arg	Glu	Leu	Arg	Gln	Glu	Glu	Glu	Gln	Arg	Arg	Arg	Arg	
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gaa	cgg	gag	agg	aaa	ttc	cgg	gaa	gag	cag	ctc	cgc	cgc	cag	cag	4059
Glu	Arg	Glu	Arg	Lys	Phe	Arg	Glu	Glu	Gln	Leu	Arg	Arg	Gln	Gln	
	1340					1345					1350				
gag	gag	gag	cag	agg	cgc	cgc	caa	ctg	cgg	gag	aga	caa	ttc	cga	4104
Glu	Glu	Glu	Gln	Arg	Arg	Arg	Gln	Leu	Arg	Glu	Arg	Gln	Phe	Arg	
	1355					1360					1365				
gaa	gat	cag	agc	cgt	cgg	caa	gtt	ctg	gag	ccc	ggt	aca	cgt	cag	4149
Glu	Asp	Gln	Ser	Arg	Arg	Gln	Val	Leu	Glu	Pro	Gly	Thr	Arg	Gln	
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ttt	gct	agg	gtc	ccg	gtg	cgc	tcc	agc	cct	ctt	tat	gaa	tac	atc	4194
Phe	Ala	Arg	Val	Pro	Val	Arg	Ser	Ser	Pro	Leu	Tyr	Glu	Tyr	Ile	
	1385					1390					1395				
caa	gag	cag	aga	tct	cag	tac	cgc	ccc							4221
Gln	Glu	Gln	Arg	Ser	Gln	Tyr	Arg	Pro							
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Leu Lys Ile Leu Leu Asp Arg Glu Phe Gly Ala Val Leu Gln Arg Pro  
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His Asp Pro Glu Thr Val Asp Val Met Leu Glu Leu Leu Asp Arg Asp  
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Ser Asp Gly Leu Val Gly Phe Asp Glu Phe Cys Leu Leu Ile Phe Lys  
65 70 75 80

Leu Ala Gln Ala Ala Tyr Tyr Ala Leu Gly Gln Ala Ser Gly Leu Asp  
85 90 95

Glu Glu Lys Arg Ser His Gly Glu Gly Lys Gly Arg Leu Leu Gln Asn  
100 105 110

Arg Arg Gln Glu Asp Gln Arg Arg Phe Glu Leu Arg Asp Arg Gln Phe  
115 120 125

Glu Asp Glu Pro Glu Arg Arg Arg Trp Gln Lys Gln Glu Gln Glu Arg  
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Glu Leu Ala Glu Glu Glu Glu Gln Arg Lys Lys Arg Glu Arg Phe Glu  
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Gln His Tyr Ser Arg Gln Tyr Arg Asp Lys Glu Gln Arg Leu Gln Arg  
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Gln Glu Leu Glu Glu Arg Arg Ala Glu Glu Glu Gln Leu Arg Arg Arg  
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Lys Gly Arg Asp Ala Glu Glu Phe Ile Glu Glu Glu Gln Leu Arg Arg  
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Arg Glu Gln Gln Glu Leu Lys Arg Glu Leu Arg Glu Glu Glu Gln Gln  
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Gln Gln Leu Arg Arg Glu Leu Glu Glu Ile Arg Glu Arg Glu Gln Arg  
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Gln Arg Leu Glu Gln Glu Glu Arg Arg Glu Gln Gln Leu Lys Arg Glu  
Seite 686

Leu Glu Glu Ile Arg Glu Arg Glu Gln Arg Leu Glu Gln Glu Glu Arg  
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Arg Glu Gln Leu Leu Ala Glu Glu Val Arg Glu Gln Ala Arg Glu Arg  
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Gly Glu Ser Leu Thr Arg Arg Trp Gln Arg Gln Leu Glu Ser Glu Ala  
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Gly Ala Arg Gln Ser Lys Val Tyr Ser Arg Pro Arg Arg Gln Glu Glu  
385 390 395 400

Gln Ser Leu Arg Gln Asp Gln Glu Arg Arg Gln Arg Gln Glu Arg Glu  
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Arg Glu Leu Glu Glu Gln Ala Arg Arg Gln Gln Gln Trp Gln Ala Glu  
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Phe Arg Glu Glu Glu Glu Gln Arg Arg Glu Arg Arg Gln Glu Leu Gln  
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Phe Leu Glu Glu Glu Glu Gln Leu Gln Arg Arg Glu Arg Ala Gln Gln  
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Leu Gln Glu Glu Asp Ser Phe Gln Glu Asp Arg Glu Arg Arg Arg Arg  
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Gln Gln Glu Gln Arg Pro Gly Gln Thr Trp Arg Trp Gln Leu Gln Glu  
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Glu Ala Gln Arg Arg Arg His Thr Leu Tyr Ala Lys Pro Gly Gln Gln  
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Glu Gln Leu Arg Glu Glu Glu Glu Leu Gln Arg Glu Lys Arg Arg Gln  
545 550 555 560

Glu Arg Glu Arg Glu Tyr Arg Glu Glu Glu Lys Leu Gln Arg Glu Glu  
565 570 575

Asp Glu Lys Arg Arg Arg Gln Glu Arg Glu Arg Gln Tyr Arg Glu Leu  
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Glu Glu Leu Arg Gln Glu Glu Gln Leu Arg Asp Arg Lys Leu Arg Glu  
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 625 630 635 640  
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 Gln Leu Leu Arg Arg Glu Glu Gln Glu Leu Arg Gln Glu Arg Glu Arg  
 660 665 670  
 Lys Leu Arg Glu Glu Glu Gln Leu Leu Gln Glu Arg Glu Glu Glu Arg  
 675 680 685  
 Leu Arg Arg Gln Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu Gln Leu  
 690 695 700  
 Leu Arg Gln Glu Glu Gln Glu Leu Arg Gln Glu Arg Glu Arg Lys Leu  
 705 710 715 720  
 Arg Glu Glu Glu Gln Leu Leu Arg Arg Glu Glu Gln Leu Leu Arg Gln  
 725 730 735  
 Glu Arg Asp Arg Lys Leu Arg Glu Glu Glu Gln Leu Leu Gln Glu Ser  
 740 745 750  
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 755 760 765  
 Glu Arg Asp Arg Lys Phe Arg Glu Glu Glu Gln Leu Leu Gln Glu Arg  
 770 775 780  
 Glu Glu Glu Arg Leu Arg Arg Gln Glu Arg Glu Arg Lys Leu Arg Glu  
 785 790 795 800  
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 Glu Arg Glu Arg Lys Leu Arg Glu Glu Glu Gln Leu Leu Gln Glu Arg  
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 Glu Glu Glu Arg Leu Arg Arg Gln Glu Arg Glu Arg Lys Leu Arg Glu  
 835 840 845  
 Glu Glu Gln Leu Leu Arg Gln Glu Glu Gln Glu Leu Arg Gln Glu Arg  
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Glu Leu Arg Gln Glu Arg Asp Arg Lys Leu Arg Glu Glu Glu Gln Leu  
885 890 895

Leu Arg Gln Glu Glu Gln Glu Leu Arg Gln Glu Arg Asp Arg Lys Leu  
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915 920 925

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930 935 940

Arg Glu Glu Gln Glu Leu Arg Arg Glu Arg Ala Arg Lys Leu Arg Glu  
945 950 955 960

Glu Glu Gln Leu Leu Gln Glu Arg Glu Glu Glu Arg Leu Arg Arg Gln  
965 970 975

Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu Gln Leu Leu Arg Arg Glu  
980 985 990

Glu Gln Glu Leu Arg Gln Glu Arg Asp Arg Lys Phe Arg Glu Glu Glu  
995 1000 1005

Gln Leu Leu Gln Glu Arg Glu Glu Glu Arg Leu Arg Arg Gln Glu  
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Arg Asp Arg Lys Phe Arg Glu Glu Glu Arg Gln Leu Arg Arg Gln  
1025 1030 1035

Glu Leu Glu Glu Gln Phe Arg Gln Glu Arg Asp Arg Lys Phe Arg  
1040 1045 1050

Leu Glu Glu Gln Ile Arg Gln Glu Lys Glu Glu Lys Gln Leu Arg  
1055 1060 1065

Arg Gln Glu Arg Asp Arg Lys Phe Arg Glu Glu Glu Gln Gln Arg  
1070 1075 1080

Arg Arg Gln Glu Arg Glu Gln Gln Leu Arg Arg Glu Arg Asp Arg  
1085 1090 1095

Lys Phe Arg Glu Glu Glu Gln Leu Leu Gln Glu Arg Glu Glu Glu  
1100 1105 1110

Arg Leu Arg Arg Gln Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu  
1115 1120 1125

Gln Leu Leu Arg Arg Glu Glu Gln Leu Leu Arg Gln Glu Arg Asp  
1130 1135 1140

Arg Lys Phe Arg Glu Glu Glu Gln Leu Leu Gln Glu Ser Glu Glu  
 1145 1150 1155  
  
 Glu Arg Leu Arg Arg Gln Glu Arg Glu Arg Lys Leu Arg Glu Glu  
 1160 1165 1170  
  
 Glu Gln Leu Leu Gln Glu Arg Glu Glu Glu Arg Leu Arg Arg Gln  
 1175 1180 1185  
  
 Glu Arg Ala Arg Lys Leu Arg Glu Glu Glu Gln Leu Leu Arg Gln  
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 Arg Asp Arg Lys Phe Arg Glu Glu Glu Gln Leu Leu Arg Arg Glu  
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 1250 1255 1260  
  
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 Tyr Arg Ala Glu Glu Gln Phe Ala Arg Glu Glu Lys Ser Arg Arg  
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 Leu Glu Arg Glu Leu Arg Gln Glu Glu Glu Gln Arg Arg Arg Arg  
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 Glu Arg Glu Arg Lys Phe Arg Glu Glu Gln Leu Arg Arg Gln Gln  
 1340 1345 1350  
  
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 Glu Asp Gln Ser Arg Arg Gln Val Leu Glu Pro Gly Thr Arg Gln  
 1370 1375 1380  
  
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 Glu Gly His Arg Ile Ser Gln Thr Pro Ser Pro Arg Arg Gln Arg Thr  
 20 25 30  
 cag aat cag cca cat ccc ctc tcc acg gag gcg aag gac aca gga tca 144  
 Gln Asn Gln Pro His Pro Leu Ser Thr Glu Ala Lys Asp Thr Gly Ser  
 35 40 45  
 gcc aaa ccc cct ttc cat gga ggt gaa gga cac aga atc agc caa acc 192  
 Ala Lys Pro Pro Phe His Gly Gly Glu Gly His Arg Ile Ser Gln Thr  
 50 55 60  
 ccc tct cca cca agg aga agg aca cag gat cag cca aac ccc ctc acc 240  
 Pro Ser Pro Pro Arg Arg Arg Thr Gln Asp Gln Pro Asn Pro Leu Thr  
 65 70 75 80  
 acg gag gcg aag gac aca gga tca gcc aaa ccc cct ctc cac caa gga 288  
 Thr Glu Ala Lys Asp Thr Gly Ser Ala Lys Pro Pro Leu His Gln Gly  
 85 90 95  
 gaa gga cac aga atc agc cac atc ccc tct cca tgg agg cga agg aca 336  
 Glu Gly His Arg Ile Ser His Ile Pro Ser Pro Trp Arg Arg Thr  
 100 105 110  
 cag aat cag cca aac ccc ctc tcc acg gag gcg aag gac aca gga tca 384  
 Gln Asn Gln Pro Asn Pro Leu Ser Thr Glu Ala Lys Asp Thr Gly Ser  
 115 120 125  
 gcc aaa tcc cct ctc cag caa gga gaa gga cac agg atc agc caa acc 432  
 Ala Lys Ser Pro Leu Gln Gln Gly Glu Gly His Arg Ile Ser Gln Thr  
 130 135 140  
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 Pro Ser Pro Arg Arg Gln Arg Thr Gln Asn Gln Pro His Pro Leu Ser  
 145 150 155 160  
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 Thr Glu Ala Lys Asp Thr Glu Ser Ala Lys Leu Pro Leu His Gly Gly  
 165 170 175  
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 Glu Gly Ala Ala Ala Thr Asp Gly Gly Thr Val Gln Leu Leu Gly Gly  
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 Leu Leu Arg Gly Asp Thr Gln Gln Lys Leu Cys Gln Arg Leu Leu Arg  
 195 200 205  
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cta Leu	tgt Cys	cag Gln	agg Arg	ctg Leu 245	ctc Leu	agt Ser	gaa Glu	gag Glu	act Thr 250	cag Gln	cag Gln	aca Thr	cta Leu	tgt Cys 255	cag Gln	768
agg Arg	ctg Leu	ctc Leu	aga Arg 260	gaa Glu	ggg Gly	acc Thr	cag Gln	cag Gln 265	aca Thr	cta Leu	tgt Cys	cag Gln	agg Arg 270	ctg Leu	ctc Leu	816
aga Arg	gaa Glu	ggg Gly 275	acc Thr	cag Gln	cag Gln	aca Thr	cta Leu 280	tgt Cys	cag Gln	agg Arg	ctg Leu	ctc Leu 285	aga Arg	gaa Glu	gac Asp	864
acc Thr	cag Gln 290	cag Gln	aca Thr	ctc Leu	tgt Cys	cag Gln 295	agg Arg	ctg Leu	ctc Leu	aga Arg	gaa Glu 300	gac Asp	acc Thr	cag Gln	cag Gln	912
aca Thr 305	cta Leu	tgt Cys	gag Glu	agg Arg	ctg Leu 310	ctc Leu	aga Arg	gaa Glu	ggg Gly	acc Thr 315	cag Gln	cag Gln	acg Thr	cta Leu	tgt Cys 320	960
cat His	agg Arg	ttg Leu	ctc Leu	aga Arg 325	gaa Glu	ggg Gly	acc Thr	cag Gln	cag Gln 330	aca Thr	cta Leu	tgt Cys	cag Gln	agg Arg 335	ctg Leu	1008
ttc Phe	aga Arg	gga Gly	gac Asp 340	acc Thr	cag Gln	cag Gln	aca Thr	cta Leu 345	tgt Cys	cag Gln	agg Arg	ctg Leu 350	ctc Leu	aga Arg	gga Gly	1056
gac Asp	acc Thr	cag Gln 355	cag Gln	aca Thr	cta Leu	tgt Cys	gag Glu 360	agg Arg	ctg Leu	ctc Leu	aga Arg	gaa Glu 365	gag Glu	acc Thr	cag Gln	1104
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tgt Cys 385	cag Gln	agg Arg	ctg Leu	ctc Leu	aga Arg 390	gaa Glu	gac Asp	acc Thr	cag Gln	cag Gln 395	aca Thr	cta Leu	tgt Cys	gag Glu	agg Arg 400	1200
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gaa Glu	ggg Gly	acc Thr	cag Gln 420	cag Gln	aca Thr	cga Arg	tgt Cys	cag Gln 425	agg Arg	ctg Leu	ctc Leu	aga Arg	gga Gly 430	gac Asp	acc Thr	1296
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agg Arg 465	ctg Leu	ctc Leu	agt Ser	aga Arg	gag Glu 470	aga Arg	ccc Pro	aga Arg	aga Arg	cac His 475	tat Tyr	gtc Val	aga Arg	ggc Gly	tgc Cys 480	1440
tta Leu	gag Glu	aag Lys	gga Gly	ccc Pro 485	agc Ser	aga Arg	cgc Arg	tat Tyr	gtc Val 490	aga Arg	ggc Gly	tgc Cys	tca Ser	gag Glu 495	gag Glu	1488



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Arg	Arg	Tyr	Arg	Leu	Leu	Ser	Glu	Glu	Thr	Gln	Gln	Thr	Leu	Cys	Gln	
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Arg	Leu	Leu	Arg	Glu	Gly	Thr	Gln	Gln	Thr	Leu	Cys	Gln	Arg	Leu	Leu	
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Arg	Glu	Gly	Thr	Gln	Gln	Thr	Leu	Cys	Gln	Arg	Leu	Leu	Arg	Glu	Gly	
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acc	cag	cag	aca	cta	tgt	cag	agg	ctg	ctc	aga	gaa	gac	acc	cag	cag	1728
Thr	Gln	Gln	Thr	Leu	Cys	Gln	Arg	Leu	Leu	Arg	Glu	Asp	Thr	Gln	Gln	
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Thr	Leu	Cys	Gln	Arg	Leu	Leu	Arg	Glu	Asp	Thr	Gln	Gln	Thr	Leu	Cys	
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gag	agg	ctg	ctc	aga	gaa	ggg	acc	cag	cag	acg	cta	tgt	cat	agg	ttg	1824
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Leu	Arg	Glu	Asp	Ala	Gln	Gln	Thr	Leu	Cys	Gln	Arg	Leu	Leu	Arg	Glu	
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Gln	Thr	Leu	Arg	Gln	Arg	Leu	Leu	Arg	Gly	Asp	Thr	Gln	Gln	Thr	Leu	
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tgt	cag	agg	ctg	ctc	aga	gga	gac	acc	cag	cag	aca	cta	tgt	cag	agg	2016
Cys	Gln	Arg	Leu	Leu	Arg	Gly	Asp	Thr	Gln	Gln	Thr	Leu	Cys	Gln	Arg	
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 Seite 693

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 Cys Gln Arg Leu Leu Arg Glu Asp Thr Gln Gln Thr Leu Cys Glu Arg  
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                   485                  490                  495  
 Thr Pro Ser Arg Arg Tyr Val Arg Gly Cys Ser Glu Glu Thr Arg Gly  
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 Thr Gln Gln Thr Leu Cys Gln Arg Leu Leu Arg Glu Asp Thr Gln Gln  
           565                  570                  575  
 Thr Leu Cys Gln Arg Leu Leu Arg Glu Asp Thr Gln Gln Thr Leu Cys  
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Gln Tyr Val Ser His Asp Cys Asp Gly Ala Ala Leu Thr Lys Lys Asp	
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Leu Lys Asn Leu Leu Glu Arg Glu Phe Gly Ala Val Leu Arg Arg Pro	
35 40 45	
cat gac cct aag acg gta gat ctg atc ctg gaa ctt ctg gat cgt gac	192
His Asp Pro Lys Thr Val Asp Leu Ile Leu Glu Leu Asp Arg Asp	
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Ser Asn Gly Arg Val Asp Phe Asn Glu Phe Leu Leu Phe Ile Phe Lys	
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gag aat gaa cag ttc cgg cag ttg gaa gat tcc cag gtg cgc gac Glu Asn Glu Gln Phe Arg Gln Leu Glu Asp Ser Gln Val Arg Asp	3654
1205 1210 1215	
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1220 1225 1230	
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1235						1240					1245				
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Arg	His	Phe	Pro	Glu	Glu	Glu	Gln	Leu	Glu	Arg	Glu	Glu	Gln	Lys	
1250						1255					1260				
gaa	gcc	aaa	agg	cgc	gac	agg	aag	tcc	caa	gag	gaa	aag	cag	ttg	3834
Glu	Ala	Lys	Arg	Arg	Asp	Arg	Lys	Ser	Gln	Glu	Glu	Lys	Gln	Leu	
1265						1270					1275				
ctg	aga	gag	gaa	aga	gaa	gag	aag	aga	cgc	cgt	caa	gag	aca	gac	3879
Leu	Arg	Glu	Glu	Arg	Glu	Glu	Lys	Arg	Arg	Arg	Gln	Glu	Thr	Asp	
1280						1285					1290				
aga	aaa	ttc	cgc	gag	gag	gaa	cag	ctg	ctc	cag	gaa	agg	gag	gaa	3924
Arg	Lys	Phe	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	Arg	Glu	Glu	
1295						1300					1305				
cag	ccg	ctg	ctc	cgc	caa	gag	cgt	gac	aga	aaa	ttc	cgc	gaa	gag	3969
Gln	Pro	Leu	Leu	Arg	Gln	Glu	Arg	Asp	Arg	Lys	Phe	Arg	Glu	Glu	
1310						1315					1320				
gaa	ctg	ctc	cat	cag	gaa	caa	ggg	aga	aaa	ttc	ctc	gag	gag	gaa	4014
Glu	Leu	Leu	His	Gln	Glu	Gln	Gly	Arg	Lys	Phe	Leu	Glu	Glu	Glu	
1325						1330					1335				
cag	cgg	ctg	cgc	gag	gaa	cgg	gag	aga	aaa	ttc	ctt	aag	gag	gaa	4059
Gln	Arg	Leu	Arg	Glu	Glu	Arg	Glu	Arg	Lys	Phe	Leu	Lys	Glu	Glu	
1340						1345					1350				
cag	cag	ctg	cgc	ctc	gag	gag	cgc	gag	caa	ctg	cgt	cag	gac	cgc	4104
Gln	Gln	Leu	Arg	Leu	Glu	Glu	Arg	Glu	Gln	Leu	Arg	Gln	Asp	Arg	
1355						1360					1365				
gac	aga	aaa	ttc	cgc	gag	gag	gaa	cag	cag	ctg	agc	cgc	caa	gag	4149
Asp	Arg	Lys	Phe	Arg	Glu	Glu	Glu	Gln	Gln	Leu	Ser	Arg	Gln	Glu	
1370						1375					1380				
cgt	gac	aga	aaa	ttc	cgt	gaa	gag	gaa	cag	cag	gtg	cgc	cgc	cag	4194
Arg	Asp	Arg	Lys	Phe	Arg	Glu	Glu	Glu	Gln	Gln	Val	Arg	Arg	Gln	
1385						1390					1395				
gaa	cga	gag	aga	aaa	ttc	ctg	gag	gag	gaa	cag	cag	ctg	cgc	cag	4239
Glu	Arg	Glu	Arg	Lys	Phe	Leu	Glu	Glu	Glu	Gln	Gln	Leu	Arg	Gln	
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Glu	Arg	His	Arg	Lys	Phe	Arg	Glu	Glu	Glu	Gln	Leu	Leu	Gln	Glu	
1415						1420					1425				
agg	gaa	gaa	cag	cag	ctg	cac	cgc	caa	gag	cgt	gac	aga	aaa	ttc	4329
Arg	Glu	Glu	Gln	Gln	Leu	His	Arg	Gln	Glu	Arg	Asp	Arg	Lys	Phe	
1430						1435					1440				
ctg	gag	gag	gaa	caa	cag	ctg	cgc	cgc	caa	gag	cgt	gac	aga	aaa	4374
Leu	Glu	Glu	Gln	Gln	Gln	Leu	Arg	Arg	Gln	Glu	Arg	Asp	Arg	Lys	
1445						1450					1455				
ttc	cgc	gaa	cag	gaa	ctg	cgc	agt	cag	gaa	cca	gag	aga	aaa	ttc	4419
Phe	Arg	Glu	Gln	Glu	Leu	Arg	Ser	Gln	Glu	Pro	Glu	Arg	Lys	Phe	
1460						1465					1470				
ctc	gag	gag	gaa	cag	cag	ctg	cac	cgc	cag	caa	cgg	cag	aga	aaa	4464
Leu	Glu	Glu	Gln	Gln	Gln	Leu	His	Arg	Gln	Gln	Arg	Gln	Arg	Lys	
1475						1480					1485				
ttc	ctc	cag	gag	gaa	cag	cag	ctg	cgc	cgc	cag	gag	cgc	ggg	caa	4509
Phe	Leu	Gln	Glu	Glu	Gln	Gln	Leu	Arg	Arg	Gln	Glu	Arg	Gly	Gln	

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ctg Leu	cgc Arg 1520	cag Gln Glu	4599
gac Asp	aga Arg 1535	aaa Lys Phe	4644
caa Gln	gag Glu 1550	aga Arg Lys	4689
gag Glu	ggc Gly 1565	caa Gln Gln	4734
gac Asp	gaa Glu 1580	cag Gln Leu	4779
caa Gln	gag Glu 1595	cgt Arg Asp	4824
cgc Arg	cag Gln 1610	gag Glu Arg	4869
ttc Phe	cgt Arg 1625	gaa Glu Glu	4914
ctg Leu	cgc Arg 1640	caa Gln Glu	4959
cag Gln	ctc Leu 1655	cgc Arg Arg	5004
cag Gln	cag Gln 1670	ctg Leu Arg	5049
gaa Glu	cag Gln 1685	ctg Leu Arg	5094
gaa Glu	cgc Arg 1700	tac Tyr Arg	5139
agg Arg	gaa Glu 1715	gaa Gln Gln	5184
cgc Arg	gag Glu 1730	gag Glu Gln	5229
cgc Arg	agc Ser 1745	caa Gln Glu	5274

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	1760					1765					1770				
gga	aag	tat	cgc	tgg	gaa	gaa	gag	cag	ctc	caa	ctt	gag	gaa	caa	5364
Gly	Lys	Tyr	Arg	Trp	Glu	Glu	Glu	Gln	Leu	Gln	Leu	Glu	Glu	Gln	
	1775					1780					1785				
gag	cag	agg	ctg	cgg	cag	gag	cga	gac	cgg	cag	tac	cgg	gcg	gag	5409
Glu	Gln	Arg	Leu	Arg	Gln	Glu	Arg	Asp	Arg	Gln	Tyr	Arg	Ala	Glu	
	1790					1795					1800				
gag	cag	ttt	gcc	acg	cag	gag	aag	agt	cgt	cgt	gag	gaa	caa	gaa	5454
Glu	Gln	Phe	Ala	Thr	Gln	Glu	Lys	Ser	Arg	Arg	Glu	Glu	Gln	Glu	
	1805					1810					1815				
cta	tgg	caa	gaa	gag	gag	cag	aaa	cgt	cgc	cag	gaa	cgg	gaa	agg	5499
Leu	Trp	Gln	Glu	Glu	Glu	Gln	Lys	Arg	Arg	Gln	Glu	Arg	Glu	Arg	
	1820					1825					1830				
aaa	tta	cgg	gaa	gaa	cac	atc	cgc	cgc	cag	cag	aag	gag	gaa	cag	5544
Lys	Leu	Arg	Glu	Glu	His	Ile	Arg	Arg	Gln	Gln	Lys	Glu	Glu	Gln	
	1835					1840					1845				
agg	cac	cgc	caa	gtc	ggg	gag	ata	caa	tcc	caa	gaa	ggg	aag	ggc	5589
Arg	His	Arg	Gln	Val	Gly	Glu	Ile	Gln	Ser	Gln	Glu	Gly	Lys	Gly	
	1850					1855					1860				
cat	ggg	cgg	ctt	ctg	gag	ccc	ggc	act	cat	cag	ttt	gcc	agt	gtc	5634
His	Gly	Arg	Leu	Leu	Glu	Pro	Gly	Thr	His	Gln	Phe	Ala	Ser	Val	
	1865					1870					1875				
cca	gtg	cgc	tcc	agc	cct	ctc	tat	gag	tac	atc	caa	gag	cag	aga	5679
Pro	Val	Arg	Ser	Ser	Pro	Leu	Tyr	Glu	Tyr	Ile	Gln	Glu	Gln	Arg	
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Ser	Gln	Tyr	Arg	Pro											
	1895														

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Leu	Lys	Asn	Leu	Leu	Glu	Arg	Glu	Phe	Gly	Ala	Val	Leu	Arg	Arg	Pro
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His	Asp	Pro	Lys	Thr	Val	Asp	Leu	Ile	Leu	Glu	Leu	Leu	Asp	Arg	Asp
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Ser	Asn	Gly	Arg	Val	Asp	Phe	Asn	Glu	Phe	Leu	Leu	Phe	Ile	Phe	Lys
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Val Ala Gln Ala Cys Tyr Tyr Ala Leu Gly Gln Ala Thr Gly Leu Asp  
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Glu Glu Lys Arg Ala Arg Cys Asp Gly Lys Glu Ser Leu Leu Gln Asp  
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Arg Arg Thr Glu Glu Asp Gln Arg Arg Phe Glu Pro Arg Asp Arg Gln  
115 120 125

Leu Glu Glu Glu Pro Gly Gln Arg Arg Arg Gln Lys Arg Gln Glu Gln  
130 135 140

Glu Arg Glu Leu Ala Glu Gly Glu Glu Gln Ser Glu Lys Gln Glu Arg  
145 150 155 160

Leu Glu Gln Arg Asp Arg Gln Arg Arg Asp Glu Glu Leu Trp Arg Gln  
165 170 175

Arg Gln Glu Trp Gln Glu Arg Glu Glu Arg Arg Ala Glu Glu Glu Gln  
180 185 190

Leu Gln Ser Cys Lys Gly His Glu Thr Glu Glu Phe Pro Asp Glu Glu  
195 200 205

Gln Leu Arg Arg Arg Glu Leu Leu Glu Leu Arg Arg Lys Gly Arg Glu  
210 215 220

Glu Lys Gln Gln Gln Arg Arg Glu Arg Gln Asp Arg Val Phe Gln Glu  
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Glu Glu Glu Lys Glu Trp Arg Lys Arg Glu Thr Val Leu Arg Lys Glu  
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Glu Glu Lys Leu Gln Glu Glu Glu Pro Gln Arg Gln Arg Glu Leu Gln  
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Gln Leu Arg Arg Lys Gln Glu Glu Glu Arg Arg Glu Gln Gln Glu Glu  
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Gln Gln Leu Arg Arg Glu Gln Glu Glu Arg Arg Glu Gln Gln Leu Arg  
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Arg Glu Gln Glu Glu Glu Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln

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360

365

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Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln  
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Gln Leu Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln Gln Leu Arg Arg  
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Glu Gln Gln Leu Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln Gln Leu  
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Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln Gln Leu Arg Arg Glu Gln  
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Glu Glu Glu Arg His Glu Gln Lys His Glu Gln Glu Arg Arg Glu Gln  
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Arg Leu Lys Arg Glu Gln Glu Glu Arg Arg Asp Trp Leu Lys Arg Glu  
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Arg Asp Gln Glu Glu Glu Arg Arg Glu Arg Trp Leu Lys Leu Glu Glu  
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Gln Gln Glu Arg Leu Glu Gln Leu Leu Lys Arg Glu Glu Glu Lys Arg  
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Leu Glu Gln Glu Arg Arg Glu Gln Arg Leu Lys Arg Glu Gln Glu Glu  
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Arg Arg Asp Gln Leu Leu Lys Arg Glu Glu Glu Arg Arg Gln Gln Arg  
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Glu Val Glu Arg Leu Glu Gln Glu Glu Arg Arg Asp Glu Arg Leu Lys  
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Arg Glu Glu Pro Glu Glu Glu Arg Arg His Glu Leu Leu Lys Ser Glu  
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 660 665 670  
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 675 680 685  
 Gln Arg Leu Lys Arg Glu His Glu Glu Glu Arg Arg Glu Gln Glu Leu  
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 Ala Glu Glu Glu Gln Glu Gln Ala Arg Glu Arg Ile Lys Ser Arg Ile  
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 Pro Lys Trp Gln Trp Gln Leu Glu Ser Glu Ala Asp Ala Arg Gln Ser  
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 Lys Val Leu Leu Glu Ala Pro Gln Ala Gly Arg Ala Glu Ala Pro Gln  
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 Phe Thr Trp Gln Trp Gln Ala Glu Glu Lys Ser Glu Arg Gly Arg Gln  
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Glu Leu Gln Arg Glu Glu Arg Glu Lys Arg Arg Arg Gln Glu Gln Glu  
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Arg Gln Tyr Arg Glu Glu Glu Gln Leu Gln Gln Glu Glu Glu Gln Leu  
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Tyr Arg Lys Asp Lys Lys Leu Gln Gln Lys Glu Glu Gln Leu Leu Gly  
980 985 990

Glu Glu Pro Glu Lys Arg Arg Arg Gln Glu Arg Glu Lys Lys Tyr Arg  
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Lys Lys Asp Glu Leu Gln Gln Glu Glu Glu Gln Leu Leu Arg Glu  
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1100 1105 1110

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Lys	Glu	Asn	Ala	Val	Arg	Asp	Asn	Lys	Val	Tyr	Cys	Lys	Gly	Arg
1190						1195					1200			
Glu	Asn	Glu	Gln	Phe	Arg	Gln	Leu	Glu	Asp	Ser	Gln	Val	Arg	Asp
1205						1210					1215			
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1430

1435

1440

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Phe Arg Glu Gln Glu Leu Arg Ser Gln Glu Pro Glu Arg Lys Phe  
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Gln Leu Arg Arg Gln Glu Arg Glu Arg Lys Phe Leu Gln Glu Glu  
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Phe	Val	Pro	Ile	Ala	Thr	Ser	Glu	Pro	Cys	His	Thr	Asp	Val	Pro	Gln		
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Pro	Cys	Ser	Thr	Asn	Ile	Thr	Glu	Pro	Asp	Tyr	Thr	Thr	Ile	Pro	Gly		
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cca	tgc	tct	acc	aac	atc	aca	gag	cca	gat	tat	act	aca	att	cct	ggg		336
Pro	Cys	Ser	Thr	Asn	Ile	Thr	Glu	Pro	Asp	Tyr	Thr	Thr	Ile	Pro	Gly		
			100					105					110				
cca	tgc	tct	acc	aac	atc	cct	ggg	cca	gat	cgt	acc	gtg	gtt	cct	gga		384
Pro	Cys	Ser	Thr	Asn	Ile	Pro	Gly	Pro	Asp	Arg	Thr	Val	Val	Pro	Gly		
							120					125					
tca	tgc	tct	acc	aac	atc	aca	gag	cca	gat	tat	acc	aca	att	cct	ggg		432
Ser	Cys	Ser	Thr	Asn	Ile	Thr	Glu	Pro	Asp	Tyr	Thr	Thr	Ile	Pro	Gly		
	130					135					140						
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Pro	Ser	Ser	Thr	Lys	Ile	Pro	Asp	Pro	Gly	Cys	Ala	Met	Val	Pro	Gly		
145				150						155					160		
ccc	agt	cct	tcc	agt	act	tct	gag	cca	agc	tca	gaa	cca	tgc	tct	atc		528
Pro	Ser	Pro	Ser	Ser	Thr	Ser	Glu	Pro	Ser	Ser	Glu	Pro	Cys	Ser	Ile		
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Asn	Val	Arg	Glu	Pro	Gly	Tyr	Met	Asn	Ala	Ser	Glu	Pro	Thr	His	Ala		
			180					185					190				
aag	gtt	cct	gat	cag	ggc	tac	acc	aag	ata	cct	gac	cag	gga	tcc	tct		624
Lys	Val	Pro	Asp	Gln	Gly	Tyr	Thr	Lys	Ile	Pro	Asp	Gln	Gly	Ser	Ser		
		195					200					205					
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Lys	Val	Pro	Glu	Pro	Cys	Gln	Ser	Arg	Val	Pro	Glu	Val	Cys	Pro	Pro		
	210					215					220						
act	gtc	acc	cct	gta	tca	gct	aag	cag	aag	acc	aag	cag	aag	taa			717
Thr	Val	Thr	Pro	Val	Ser	Ala	Lys	Gln	Lys	Thr	Lys	Gln	Lys				
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<400> 128

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 Seite 711

1

5

10

15

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Phe Val Pro Ile Ala Thr Ser Glu Pro Cys His Thr Asp Val Pro Gln  
35 40 45

Pro Gly Asn Thr Lys Ile Pro Glu Pro Cys Ser Thr Lys Val Pro Glu  
50 55 60

Pro Gly Asn Thr Val Val Leu Glu Pro Asp Tyr Thr Thr Met Pro Gly  
65 70 75 80

Pro Cys Ser Thr Asn Ile Thr Glu Pro Asp Tyr Thr Thr Ile Pro Gly  
85 90 95

Pro Cys Ser Thr Asn Ile Thr Glu Pro Asp Tyr Thr Thr Ile Pro Gly  
100 105 110

Pro Cys Ser Thr Asn Ile Pro Gly Pro Asp Arg Thr Val Val Pro Gly  
115 120 125

Ser Cys Ser Thr Asn Ile Thr Glu Pro Asp Tyr Thr Thr Ile Pro Gly  
130 135 140

Pro Ser Ser Thr Lys Ile Pro Asp Pro Gly Cys Ala Met Val Pro Gly  
145 150 155 160

Pro Ser Pro Ser Ser Thr Ser Glu Pro Ser Ser Glu Pro Cys Ser Ile  
165 170 175

Asn Val Arg Glu Pro Gly Tyr Met Asn Ala Ser Glu Pro Thr His Ala  
180 185 190

Lys Val Pro Asp Gln Gly Tyr Thr Lys Ile Pro Asp Gln Gly Ser Ser  
195 200 205

Lys Val Pro Glu Pro Cys Gln Ser Arg Val Pro Glu Val Cys Pro Pro  
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Thr Val Thr Pro Val Ser Ala Lys Gln Lys Thr Lys Gln Lys  
225 230 235

<210> 129  
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<212> DNA  
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<220>  
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gtg tgc ccc acg cca aag tgc cca gag cca tgt cca ccc ccg aag tgc      96
Val Cys Pro Thr Pro Lys Cys Pro Glu Pro Cys Pro Pro Pro Lys Cys
      20      25      30

cct gag ccc tgc cca cca cca aag tgt cca cag ccc tgc cca cct cag      144
Pro Glu Pro Cys Pro Pro Pro Lys Cys Pro Gln Pro Cys Pro Pro Gln
      35      40      45

cag tgc cag cag aaa tat cct cct gtg aca cct tcc cca ccc tgc cag      192
Gln Cys Gln Gln Lys Tyr Pro Pro Val Thr Pro Ser Pro Pro Cys Gln
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cca aag tat cca ccg aag agc aag
Pro Lys Tyr Pro Pro Lys Ser Lys      216
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1      5      10      15

Val Cys Pro Thr Pro Lys Cys Pro Glu Pro Cys Pro Pro Pro Lys Cys
      20      25      30

Pro Glu Pro Cys Pro Pro Pro Lys Cys Pro Gln Pro Cys Pro Pro Gln
      35      40      45

Gln Cys Gln Gln Lys Tyr Pro Pro Val Thr Pro Ser Pro Pro Cys Gln
      50      55      60

Pro Lys Tyr Pro Pro Lys Ser Lys
65      70

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1      5      10      15

caa tat gca tca caa agt tgt gat gga gca tca ctt agc aag aaa gac      96
Gln Tyr Ala Ser Gln Ser Cys Asp Gly Ala Ser Leu Ser Lys Lys Asp
      20      25      30

ctg aaa aac ctc ctt gag aga gaa ctt gga gat gtc ctt cag aga cca      144

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His	Asp	Pro	Glu	Thr	Ile	Asp	Leu	Thr	Leu	Glu	Leu	Leu	Asp	Arg	Asp		
	50					55					60						
tgc	aac	ggg	cgt	gtt	gat	ttc	aac	gaa	ttc	ctc	ctg	ttc	ctt	ttc	aag		240
Cys	Asn	Gly	Arg	Val	Asp	Phe	Asn	Glu	Phe	Leu	Leu	Phe	Leu	Phe	Lys		
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att	gct	caa	gct	tgc	tat	tat	gct	ctc	gat	cag	gcc	gca	gag	cta	ggc		288
Ile	Ala	Gln	Ala	Cys	Tyr	Tyr	Ala	Leu	Asp	Gln	Ala	Ala	Glu	Leu	Gly		
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gag	aag	aga	gcc	ctg	ccc	aat	gaa	aag	agg	aac	ctg	tca	caa	gat	cgc		336
Glu	Lys	Arg	Ala	Leu	Pro	Asn	Glu	Lys	Arg	Asn	Leu	Ser	Gln	Asp	Arg		
			100					105					110				
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Arg	Gln	Glu	Asp	Gln	Arg	Arg	Phe	Glu	Pro	Arg	Ser	Arg	Gln	Leu	Asp		
		115					120					125					
gaa	gaa	cct	ggg	cgc	cga	agc	tgg	cag	aag	aga	cgt	gag	cag	gag	gag		432
Glu	Glu	Pro	Gly	Arg	Arg	Ser	Trp	Gln	Lys	Arg	Arg	Glu	Gln	Glu	Glu		
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cgc	gct	gag	gag	cag	cgg	ctg	gag	cag	cgc	tac	agg	cag	cac	cgc	gat		480
Arg	Ala	Glu	Glu	Gln	Arg	Leu	Glu	Gln	Arg	Tyr	Arg	Gln	His	Arg	Asp		
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gaa	gag	cag	aga	ctg	caa	agg	cga	gaa	ctg	caa	gaa	ctg	gag	gaa	cgc		528
Glu	Glu	Gln	Arg	Leu	Gln	Arg	Arg	Glu	Leu	Gln	Glu	Leu	Glu	Glu	Arg		
				165					170					175			
ctt	gca	gag	aaa	gag	ccg	ctt	ggc	tgg	agt	aag	ggg	cgt	gac	gcg	gag		576
Leu	Ala	Glu	Lys	Glu	Pro	Leu	Gly	Trp	Ser	Lys	Gly	Arg	Asp	Ala	Glu		
			180					185					190				
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Glu	Phe	Ser	Glu	Val	Glu	Glu	Gln	Gln	Arg	Gln	Glu	Arg	Gln	Glu	Leu		
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aag	ggc	aag	ggc	caa	aca	gaa	gag	aga	agg	ctg	cag	aag	cgc	agg	caa		672
Lys	Gly	Lys	Gly	Gln	Thr	Glu	Glu	Arg	Arg	Leu	Gln	Lys	Arg	Arg	Gln		
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gaa	gag	cta	cgc	gaa	ccc	ctg	cta	agg	cgc	gat	ctg	gag	ttg	agg	cgc		720
Glu	Glu	Leu	Arg	Glu	Pro	Leu	Leu	Arg	Arg	Asp	Leu	Glu	Leu	Arg	Arg		
					230					235					240		
gaa	caa	gag	cta	agg	cgc	gag	cag	gag	ttg	agg	cag	gaa	cag	agg	cgc		768
Glu	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Gln	Arg	Arg		
				245					250					255			
gag	cag	gag	cta	agg	cgc	gag	cag	gag	ctg	agg	caa	gag	ctg	agg	cgc		816
Glu	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Leu	Arg	Arg		
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gag	cag	gag	ctg	aat	cga	agg	cag	gag	ctg	agg	cgc	gaa	caa	gag	cta		864
Glu	Gln	Glu	Leu	Asn	Arg	Arg	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu		
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agg	cgc	gag	cag	gag	ctg	agg	cag	gag	ctg	agg	cgc	gag	cag	gag	cta		912
Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu		
	290					295					300						
agg	cgc	gag	cag	gag	ttg	agg	cag	gaa	ctg	agg	cgc	gag	caa	gag	cta		960
Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu		

305		310		315		320										
agg	cgc	gag	cag	gag	ttg	agg	cag	gaa	ctg	agg	cgc	gag	caa	gag	cta	1008
Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu	
				325				330						335		
agg	cgc	gag	cag	gag	ttg	agg	cag	gaa	ctg	agg	cgt	gag	caa	gag	cta	1056
Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu	
			340					345					350			
aga	cgc	gag	caa	gag	ctg	agg	cag	gag	ctg	gct	gag	gag	gac	gag	ctg	1104
Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Leu	Ala	Glu	Glu	Asp	Glu	Leu	
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acg	cgg	atc	cgg	gaa	ccc	gac	gag	agc	att	acc	cag	agg	tgg	cag	tgg	1152
Thr	Arg	Ile	Arg	Glu	Pro	Asp	Glu	Ser	Ile	Thr	Gln	Arg	Trp	Gln	Trp	
		370				375					380					
cag	ctc	gaa	aac	gag	gca	gac	gcc	cgt	cag	aac	aag	gtc	tac	tct	agg	1200
Gln	Leu	Glu	Asn	Glu	Ala	Asp	Ala	Arg	Gln	Asn	Lys	Val	Tyr	Ser	Arg	
					390					395					400	
cct	agc	agg	cag	gag	cag	agg	ctt	cgc	cag	gag	ctg	ggg	gag	cgt	cag	1248
Pro	Ser	Arg	Gln	Glu	Gln	Arg	Leu	Arg	Gln	Glu	Leu	Gly	Glu	Arg	Gln	
				405					410					415		
ctc	cgg	gag	cag	gag	gag	cag	cgc	cgc	gac	ctc	caa	cag	gag	cgt	ccc	1296
Leu	Arg	Glu	Gln	Glu	Glu	Gln	Arg	Arg	Asp	Leu	Gln	Gln	Glu	Arg	Pro	
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gct	gag	gag	gcg	cgc	cag	cgc	aac	cag	tgg	gag	agg	ccg	cag	cgg	gcg	1344
Ala	Glu	Glu	Ala	Arg	Gln	Arg	Asn	Gln	Trp	Glu	Arg	Pro	Gln	Arg	Ala	
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gag	gag	cgc	ctg	gag	cag	gag	cag	cgg	ttc	cgc	gac	agg	gag	gag	cag	1392
Glu	Glu	Arg	Leu	Glu	Gln	Glu	Gln	Arg	Phe	Arg	Asp	Arg	Glu	Glu	Gln	
			450			455					460					
cgc	ttc	cgg	gag	gag	aag	ctg	caa	cga	gca	gag	ctc	cag	gac	agc	ctc	1440
Arg	Phe	Arg	Glu	Glu	Lys	Leu	Gln	Arg	Ala	Glu	Leu	Gln	Asp	Ser	Leu	
					470					475					480	
cta	gat	gaa	gaa	cag	agg	cga	ctc	cag	gag	gaa	cgc	cga	gag	cca	aac	1488
Leu	Asp	Glu	Glu	Gln	Arg	Arg	Leu	Gln	Glu	Glu	Arg	Arg	Glu	Pro	Asn	
				485					490					495		
agg	agc	cgg	caa	ctg	agg	gaa	gaa	agc	cag	agg	cgc	cgc	aca	ctg	tac	1536
Arg	Ser	Arg	Gln	Leu	Arg	Glu	Glu	Ser	Gln	Arg	Arg	Arg	Thr	Leu	Tyr	
			500					505					510			
gcc	aaa	ccc	agc	cag	agg	cag	cgt	agg	gag	gag	gag	cta	cgc	gag	gaa	1584
Ala	Lys	Pro	Ser	Gln	Arg	Gln	Arg	Arg	Glu	Glu	Glu	Leu	Arg	Glu	Glu	
		515					520					525				
cgg	ctg	ttg	caa	gaa	gag	cag	cgc	cag	cag	cgg	gag	agg	aaa	cac	cgc	1632
Arg	Leu	Leu	Gln	Glu	Glu	Gln	Arg	Gln	Gln	Arg	Glu	Arg	Lys	His	Arg	
		530				535					540					
agg	gag	gag	gat	ctg	cag	cag	gag	gaa	aag	cgg	ctg	cag	caa	gac	gaa	1680
Arg	Glu	Glu	Asp	Leu	Gln	Gln	Glu	Glu	Lys	Arg	Leu	Gln	Gln	Asp	Glu	
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gag	caa	ctg	cag	cga	gaa	agg	agg	cgc	ctg	cag	cgg	gag	agg	cag	tat	1728
Glu	Gln	Leu	Gln	Arg	Glu	Arg	Arg	Arg	Leu	Gln	Arg	Glu	Arg	Gln	Tyr	
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cag	gag	gag	gac	ctg	caa	cag	gag	gaa	gag	cgg	ctg	cag	cag	gag	gaa	1776
Gln	Glu	Glu	Asp	Leu	Gln	Gln	Glu	Glu	Glu	Arg	Leu	Gln	Gln	Glu	Glu	
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cag Gln	gag Glu 610	gag Glu	gac Asp	ctg Leu	cag Gln	cgg Arg 615	ctg Leu	cgg Arg	gat Asp	gaa Glu	gat Asp 620	cag Gln	cgc Arg	agg Arg	gat Asp	1872
ctg Leu 625	aaa Lys	tgg Trp	cag Gln	tgg Trp	caa Gln 630	cca Pro	agg Arg	aaa Lys	gaa Glu	aat Asn 635	gaa Glu	ggt Val	cgt Arg	agt Ser	aac Asn 640	1920
agg Arg	ctc Leu	ttc Phe	acc Thr	aaa Lys 645	cgc Arg	aga Arg	ggg Gly	gat Asp	gag Glu 650	gaa Glu	ccc Pro	atc Ile	cag Gln	cag Gln 655	ctg Leu	1968
gaa Glu	gat Asp	tct Ser	cag Gln 660	gag Glu	cga Arg	gag Glu	aga Arg	cgt Arg 665	cag Gln	gat Asp	cgg Arg	cgg Arg	cct Pro 670	ctg Leu	caa Gln	2016
gac Asp	gaa Glu	gag Glu 675	gaa Glu	gag Glu	aag Lys	aga Arg	gag Glu 680	ctg Leu	gag Glu	cag Gln	gag Glu	agg Arg 685	agg Arg	cgt Arg	cga Arg	2064
cag Gln 690	cag Gln	cgc Arg	gac Asp	cgt Arg	cag Gln	atc Ile 695	cta Leu	gag Glu	gaa Glu	gag Glu	cag Gln 700	ttt Phe	cag Gln	cga Arg	gag Glu	2112
cac His 705	caa Gln	cgg Arg	gaa Glu	gcc Ala	aga Arg 710	aga Arg	cga Arg	gat Asp	gag Glu	acg Thr 715	ttc Phe	cag Gln	gag Glu	gaa Glu 720	gaa Glu	2160
cag Gln	ctc Leu	cag Gln	gga Gly	gaa Glu 725	tcg Ser	aga Arg	aga Arg	cgg Arg	caa Gln 730	cag Gln	gag Glu	aga Arg	gag Glu	ggc Gly 735	aag Lys	2208
ttc Phe	ctt Leu	gag Glu	gag Glu 740	gaa Glu	agg Arg	cag Gln	ctg Leu	cgg Arg 745	aca Thr	gaa Glu	cgg Arg	gaa Glu 750	gag Glu	cag Gln	agg Arg	2256
cgg Arg	cgt Arg	caa Gln 755	gaa Glu	caa Gln	gag Glu	aga Arg	gaa Glu 760	ttc Phe	caa Gln	gag Glu	gag Glu	gag Glu 765	gag Glu	cac His	ctc Leu	2304
caa Gln 770	gaa Glu	cgc Arg	gag Glu	aaa Lys	gaa Glu	ctt Leu 775	cgg Arg	cag Gln	gaa Glu	tgc Cys	gac Asp 780	aga Arg	aaa Lys	tct Ser	cgt Arg	2352
gaa Glu 785	caa Gln	gag Glu	cgc Arg	cgc Arg	cag Gln 790	cag Gln	cgt Arg	gag Glu	gaa Glu	gag Glu 795	cag Gln	ctg Leu	agg Arg	cgt Arg	cag Gln 800	2400
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cac His	cag Gln	gaa Glu 835	cgt Arg	gag Glu	gaa Glu	gag Glu	cag Gln 840	ctg Leu	cgg Arg	gac Asp	aga Arg	cca Pro 845	tcc Ser	cgc Arg	cgg Arg	2544
gaa Glu	caa Gln 850	gaa Glu	cgc Arg	cac His	cag Gln	gaa Glu 855	cgt Arg	gag Glu	gaa Glu	gag Glu	cag Gln 860	ctg Leu	cgg Arg	gac Asp	aga Arg	2592



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gag gaa gag cag ctg cgg gac aga cca tcc cgc cgg gaa caa gaa cgc Glu Glu Glu Gln Leu Arg Asp Arg Pro Ser Arg Arg Glu Gln Glu Arg 900 905 910	2736
cac cag gaa cgt gag gaa gag cag ctg cgg gac aga cca tcc cgc cgg His Gln Glu Arg Glu Glu Glu Gln Leu Arg Asp Arg Pro Ser Arg Arg 915 920 925	2784
gaa caa gaa cgc cgc ctg gag cgt gag gaa gag cag ctg cgg gac aga Glu Gln Glu Arg Arg Leu Glu Arg Glu Glu Glu Gln Leu Arg Asp Arg 930 935 940	2832
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gaa gaa gag cgc cgc gag gaa ctg gag gaa gag cag cgt ggc caa gag Glu Glu Glu Arg Arg Glu Glu Leu Glu Glu Gln Arg Gly Gln Glu 965 970 975	2928
cgg gac cgt ttg agg gtg gag gag cag ctt cgc gga cag cga gag gaa Arg Asp Arg Leu Arg Val Glu Glu Gln Leu Arg Gly Gln Arg Glu Glu 980 985 990	2976
gag cag cgc cgc cgc cag gaa tgt gac aga aaa tta cac cgg gaa cta Glu Gln Arg Arg Arg Gln Glu Cys Asp Arg Lys Leu His Arg Glu Leu 995 1000 1005	3024
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gaa gaa gag cgc cgt cat gag gag ttc gag gaa aag cag ctg cgc Glu Glu Glu Arg Arg His Glu Glu Phe Glu Glu Lys Gln Leu Arg 1040 1045 1050	3159
ctc cag gaa ccg gac aga aga ttc cgc cgg gaa caa gag ctc cgt Leu Gln Glu Pro Asp Arg Arg Phe Arg Arg Glu Gln Glu Leu Arg 1055 1060 1065	3204
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cgg gag caa gag ctc cgc cgg gag cgc gaa gaa gag cgg ctg agg Arg Glu Gln Glu Leu Arg Arg Glu Arg Glu Glu Glu Arg Leu Arg 1085 1090 1095	3294
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gaa gag cag ctg agg cgc cag gaa ctt gac aga aaa ttc cgt gag Glu Glu Gln Leu Arg Arg Gln Glu Leu Asp Arg Lys Phe Arg Glu 1115 1120 1125	3384
gaa caa gag ctc gac caa gaa ctg gag gaa gag cgg ctg cgg gac Seite 717	3429

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Glu	Gln	Glu	Leu	Asp	Gln	Glu	Leu	Glu	Glu	Glu	Arg	Leu	Arg	Asp	
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Arg	Lys	Ile	Arg	Arg	Glu	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Leu	
	1145					1150					1155				
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Arg	Arg	Glu	Gln	Glu	Phe	Arg	Arg	Glu	Gln	Glu	Leu	Arg	Arg	Glu	
	1160					1165					1170				
caa	gag	ttc	cgc	cgg	gag	caa	gag	ctc	cgc	cag	gag	cgc	gag	gaa	3564
Gln	Glu	Phe	Arg	Arg	Glu	Gln	Glu	Leu	Arg	Gln	Glu	Arg	Glu	Glu	
	1175					1180					1185				
gag	cgg	ctg	agg	gac	aga	aag	atc	cgc	cgg	gac	caa	gaa	ctc	cgc	3609
Glu	Arg	Leu	Arg	Asp	Arg	Lys	Ile	Arg	Arg	Asp	Gln	Glu	Leu	Arg	
	1190					1195					1200				
cag	gga	ctg	gag	gaa	gag	cag	ctg	agg	cgc	cag	gaa	cgt	gac	aga	3654
Gln	Gly	Leu	Glu	Glu	Glu	Gln	Leu	Arg	Arg	Gln	Glu	Arg	Asp	Arg	
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aaa	gtc	cgt	gag	gaa	caa	gag	ctc	gac	caa	gaa	ctg	gag	gaa	gag	3699
Lys	Val	Arg	Glu	Glu	Gln	Glu	Leu	Asp	Gln	Glu	Leu	Glu	Glu	Glu	
	1220					1225					1230				
cgg	ctg	cgg	gac	aga	aag	atc	cgc	cgg	gag	caa	gag	ctc	cgc	aga	3744
Arg	Leu	Arg	Asp	Arg	Lys	Ile	Arg	Arg	Glu	Gln	Glu	Leu	Arg	Arg	
	1235					1240					1245				
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Glu	Gln	Glu	Leu	Arg	Arg	Glu	Gln	Glu	Phe	Arg	Arg	Glu	Gln	Gly	
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ctc	cgc	cgg	gag	cgc	gag	gaa	gag	cgg	ctg	agg	gac	aga	aag	atc	3834
Leu	Arg	Arg	Glu	Arg	Glu	Glu	Glu	Arg	Leu	Arg	Asp	Arg	Lys	Ile	
	1265					1270					1275				
cgc	cgg	gac	caa	gaa	ctc	cgc	cag	gga	ctg	gag	gaa	gag	cag	ctg	3879
Arg	Arg	Asp	Gln	Glu	Leu	Arg	Gln	Gly	Leu	Glu	Glu	Glu	Gln	Leu	
	1280					1285					1290				
agg	cgc	cag	gaa	cgt	gac	aga	aaa	ttc	cgt	gag	gaa	caa	gag	ctc	3924
Arg	Arg	Gln	Glu	Arg	Asp	Arg	Lys	Phe	Arg	Glu	Glu	Gln	Glu	Leu	
	1295					1300					1305				
ggc	caa	gaa	ctg	gag	gaa	gag	cgg	ctg	cgg	gac	aga	aag	atc	cgc	3969
Gly	Gln	Glu	Leu	Glu	Glu	Glu	Arg	Leu	Arg	Asp	Arg	Lys	Ile	Arg	
	1310					1315					1320				
cgg	gag	caa	gag	ctc	cgc	cgg	gaa	cgc	gag	caa	gag	cag	cgg	cgc	4014
Arg	Glu	Gln	Glu	Leu	Arg	Arg	Glu	Arg	Glu	Gln	Glu	Gln	Arg	Arg	
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cgc	ctg	gag	cgt	gag	gaa	gag	cag	cag	cgt	ctc	cat	gag	cgt	gag	4059
Arg	Leu	Glu	Arg	Glu	Glu	Glu	Gln	Gln	Arg	Leu	His	Glu	Arg	Glu	
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gaa	gag	cag	cgg	cgc	cgc	cag	gag	cgc	gag	caa	gag	cag	cag	cgg	4104
Glu	Glu	Gln	Arg	Arg	Arg	Gln	Glu	Arg	Glu	Gln	Glu	Gln	Gln	Arg	
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tgc	ctg	gag	cgt	gag	gag	gaa	caa	ttt	cgc	ttt	gag	gag	cag	cag	4149
Cys	Leu	Glu	Arg	Glu	Glu	Glu	Gln	Phe	Arg	Phe	Glu	Glu	Gln	Gln	
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cgc	cgc	cgc	cag	gaa	cgc	gag	caa	cag	ttg	aga	cag	gag	cgc	gac	4194
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						cgt Arg 1410
						cag Gln 1410
						gaa Glu 1410
						agg Arg 1410
						gag Glu 1410
						gag Glu 1410
4239						
ctg Leu 1415	ctg Leu 1415	cac His 1415	cgc Arg 1415	cag Gln 1415	gtg Val 1420	ggc Gly 1420
						agg Arg 1420
						aaa Lys 1420
						ttc Phe 1420
						cgg Arg 1425
						gaa Glu 1425
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4284						
cga Arg 1430	ctc Leu 1430	cgc Arg 1430	ctg Leu 1430	gaa Glu 1430	aga Arg 1435	gag Glu 1435
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						ctc Leu 1440
						cag Gln 1440
						gag Glu 1440
4329						
cgt Arg 1445	gac Asp 1445	aac Asn 1445	aga Arg 1445	aga Arg 1445	ttc Phe 1450	cgc Arg 1450
						gag Glu 1450
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						gta Val 1450
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						agg Arg 1455
						caa Gln 1455
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						caa Gln 1465
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						gac Asp 1465
						aga Arg 1470
						aaa Lys 1470
						ttc Phe 1470
						cgt Arg 1470
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						cac His 1495
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						gag Glu 1510
						aag Lys 1510
						cga Arg 1510
						gat Asp 1510
						ggc Gly 1515
						caa Gln 1515
						tac Tyr 1515
						ctg Leu 1515
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						gat Asp 1525
						acg Thr 1525
						att Ile 1525
						cgt Arg 1530
						cgc Arg 1530
						cag Gln 1530
						gaa Glu 1530
						caa Gln 1530
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						caa Gln 1540
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						cgg Arg 1540
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						gag Glu 1545
4644						
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						cgt Arg 1555
						cgt Arg 1555
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						caa Gln 1560
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						cag Gln 1560
4689						
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						cct Pro 1570
						ggc Gly 1570
						aca Thr 1570
						cgc Arg 1575
						cag Gln 1575
						ttt Phe 1575
						gcc Ala 1575
						aat Asn 1575
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						tat Tyr 1585
						gag Glu 1585
						tac Tyr 1585
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						cag Gln 1590
						gag Glu 1590
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 Leu Lys Asn<sub>35</sub> Leu Leu Glu Arg<sub>40</sub> Glu Leu Gly Asp Val<sub>45</sub> Leu Gln Arg Pro  
 His Asp<sub>50</sub> Pro Glu Thr Ile Asp<sub>55</sub> Leu Thr Leu Glu<sub>60</sub> Leu Leu Asp Arg Asp  
 Cys Asn Gly Arg Val<sub>70</sub> Asp Phe Asn Glu Phe<sub>75</sub> Leu Leu Phe Leu Phe<sub>80</sub> Lys  
 Ile Ala Gln Ala Cys<sub>85</sub> Tyr Tyr Ala Leu Asp<sub>90</sub> Gln Ala Ala Glu<sub>95</sub> Leu Gly  
 Glu Lys Arg Ala<sub>100</sub> Leu Pro Asn Glu<sub>105</sub> Lys Arg Asn Leu Ser<sub>110</sub> Gln Asp Arg  
 Arg Gln Glu<sub>115</sub> Asp Gln Arg Arg Phe<sub>120</sub> Glu Pro Arg Ser<sub>125</sub> Arg Gln Leu Asp  
 Glu Glu<sub>130</sub> Pro Gly Arg Arg Ser<sub>135</sub> Trp Gln Lys Arg Arg<sub>140</sub> Glu Gln Glu Glu  
 Arg<sub>145</sub> Ala Glu Glu Gln<sub>150</sub> Arg Leu Glu Gln Arg Tyr<sub>155</sub> Arg Gln His Arg<sub>160</sub> Asp  
 Glu Glu Gln Arg<sub>165</sub> Leu Gln Arg Arg Glu<sub>170</sub> Leu Gln Glu Leu Glu<sub>175</sub> Glu Arg  
 Leu Ala Glu Lys<sub>180</sub> Glu Pro Leu Gly Trp<sub>185</sub> Ser Lys Gly Arg Asp<sub>190</sub> Ala Glu  
 Glu Phe Ser<sub>195</sub> Glu Val Glu Glu Gln<sub>200</sub> Gln Arg Gln Glu Arg<sub>205</sub> Gln Glu Leu  
 Lys Gly<sub>210</sub> Lys Gly Gln Thr Glu<sub>215</sub> Glu Arg Arg Leu Gln<sub>220</sub> Lys Arg Arg Gln  
 Glu Glu Leu Arg Glu<sub>225</sub> Pro Leu Leu Arg Arg Asp<sub>235</sub> Leu Glu Leu Arg Arg<sub>240</sub>  
 Glu Gln Glu Leu Arg<sub>245</sub> Arg Glu Gln Glu Leu Arg Gln Glu Gln Arg<sub>255</sub> Arg  
 Glu Gln Glu Leu<sub>260</sub> Arg Arg Glu Gln Glu<sub>265</sub> Leu Arg Gln Glu Leu Arg Arg<sub>270</sub>  
 Glu Gln Glu<sub>275</sub> Leu Asn Arg Arg Gln<sub>280</sub> Glu Leu Arg Arg Glu<sub>285</sub> Gln Glu Leu

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305 310 315 320

Arg Arg Glu Gln Glu Leu Arg Gln Glu Leu Arg Arg Glu Gln Glu Leu  
325 330 335

Arg Arg Glu Gln Glu Leu Arg Gln Glu Leu Arg Arg Glu Gln Glu Leu  
340 345 350

Arg Arg Glu Gln Glu Leu Arg Gln Glu Leu Ala Glu Glu Asp Glu Leu  
355 360 365

Thr Arg Ile Arg Glu Pro Asp Glu Ser Ile Thr Gln Arg Trp Gln Trp  
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Gln Leu Glu Asn Glu Ala Asp Ala Arg Gln Asn Lys Val Tyr Ser Arg  
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Pro Ser Arg Gln Glu Gln Arg Leu Arg Gln Glu Leu Gly Glu Arg Gln  
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Leu Arg Glu Gln Glu Glu Gln Arg Arg Asp Leu Gln Gln Glu Arg Pro  
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Ala Glu Glu Ala Arg Gln Arg Asn Gln Trp Glu Arg Pro Gln Arg Ala  
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Glu Glu Arg Leu Glu Gln Glu Gln Arg Phe Arg Asp Arg Glu Glu Gln  
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Arg Phe Arg Glu Glu Lys Leu Gln Arg Ala Glu Leu Gln Asp Ser Leu  
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Leu Asp Glu Glu Gln Arg Arg Leu Gln Glu Glu Arg Arg Glu Pro Asn  
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Arg Ser Arg Gln Leu Arg Glu Glu Ser Gln Arg Arg Arg Thr Leu Tyr  
500 505 510

Ala Lys Pro Ser Gln Arg Gln Arg Arg Glu Glu Glu Leu Arg Glu Glu  
515 520 525

Arg Leu Leu Gln Glu Glu Gln Arg Gln Gln Arg Glu Arg Lys His Arg  
530 535 540

Arg Glu Glu Asp Leu Gln Gln Glu Glu Lys Arg Leu Gln Gln Asp Glu  
545 550 555 560

Glu Gln Leu Gln Arg Glu Arg Arg Arg Leu Gln Arg Glu Arg Gln Tyr  
Seite 721

Gln Glu Glu Asp Leu Gln Gln Glu Glu Glu Arg Leu Gln Gln Glu Glu  
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Glu Arg Leu Gln Arg Glu Arg Arg Arg Leu Gln Gln Glu Arg Gln Tyr  
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Gln Glu Glu Asp Leu Gln Arg Leu Arg Asp Glu Asp Gln Arg Arg Asp  
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Leu Lys Trp Gln Trp Gln Pro Arg Lys Glu Asn Glu Val Arg Ser Asn  
625 630 635 640

Arg Leu Phe Thr Lys Arg Arg Gly Asp Glu Glu Pro Ile Gln Gln Leu  
645 650 655

Glu Asp Ser Gln Glu Arg Glu Arg Arg Gln Asp Arg Arg Pro Leu Gln  
660 665 670

Asp Glu Glu Glu Glu Lys Arg Glu Leu Glu Gln Glu Arg Arg Arg Arg  
675 680 685

Gln Gln Arg Asp Arg Gln Ile Leu Glu Glu Glu Gln Phe Gln Arg Glu  
690 695 700

His Gln Arg Glu Ala Arg Arg Arg Asp Glu Thr Phe Gln Glu Glu Glu  
705 710 715 720

Gln Leu Gln Gly Glu Ser Arg Arg Arg Gln Gln Glu Arg Glu Gly Lys  
725 730 735

Phe Leu Glu Glu Glu Arg Gln Leu Arg Thr Glu Arg Glu Glu Gln Arg  
740 745 750

Arg Arg Gln Glu Gln Glu Arg Glu Phe Gln Glu Glu Glu Glu His Leu  
755 760 765

Gln Glu Arg Glu Lys Glu Leu Arg Gln Glu Cys Asp Arg Lys Ser Arg  
770 775 780

Glu Gln Glu Arg Arg Gln Gln Arg Glu Glu Glu Gln Leu Arg Arg Gln  
785 790 795 800

Glu Arg Asp Gln Arg Phe Arg Arg Glu Gln Glu Arg His Leu Glu Arg  
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Glu Glu Glu Gln Leu Arg Asp Arg Pro Ser Arg Arg Glu Gln Glu Arg  
820 825 830

His Gln Glu Arg Glu Glu Glu Gln Leu Arg Asp Arg Pro Ser Arg Arg  
835 840 845

Glu Gln Glu Arg His Gln Glu Arg Glu Glu Glu Gln Leu Arg Asp Arg  
 850 855 860  
 Pro Ser Arg Arg Glu Gln Glu Arg His Gln Glu Arg Glu Glu Glu Gln  
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 Leu Arg Asp Arg Pro Phe Arg Arg Glu Gln Glu Arg Arg Leu Glu Arg  
 885 890 895  
 Glu Glu Glu Gln Leu Arg Asp Arg Pro Ser Arg Arg Glu Gln Glu Arg  
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 His Gln Glu Arg Glu Glu Glu Gln Leu Arg Asp Arg Pro Ser Arg Arg  
 915 920 925  
 Glu Gln Glu Arg Arg Leu Glu Arg Glu Glu Glu Gln Leu Arg Asp Arg  
 930 935 940  
 Ser Phe Arg Arg Glu Gln Glu Leu Arg Arg Asp Arg Lys Phe His Glu  
 945 950 955 960  
 Glu Glu Glu Arg Arg Glu Glu Leu Glu Glu Glu Gln Arg Gly Gln Glu  
 965 970 975  
 Arg Asp Arg Leu Arg Val Glu Glu Gln Leu Arg Gly Gln Arg Glu Glu  
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 Asp Arg Lys Ile Arg Arg Asp Gln Glu Leu Arg Gln Gly Leu Glu  
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 1160 1165 1170  
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 Gln Gly Leu Glu Glu Glu Gln Leu Arg Arg Gln Glu Arg Asp Arg  
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 Lys Val Arg Glu Glu Gln Glu Leu Asp Gln Glu Leu Glu Glu Glu  
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 Arg Arg Gln Glu Arg Asp Arg Lys Phe Arg Glu Glu Gln Glu Leu  
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 Gly Gln Glu Leu Glu Glu Glu Arg Leu Arg Asp Arg Lys Ile Arg  
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Cys Leu Glu Arg Glu Glu Glu Gln Phe Arg Phe Glu Glu Gln Gln  
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Leu Leu His Arg Gln Val Gly Gly Arg Lys Phe Arg Glu Glu Glu  
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Arg Asp Asn Arg Arg Phe Arg Glu Glu Val Glu Leu Arg Gln Glu  
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Arg Glu Gly Gln Gln Leu Arg Gln Glu Arg Asp Arg Lys Phe Arg  
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Glu Val Glu Glu Leu Arg Gln Glu Glu Gln Arg Arg Arg Gln Glu  
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Arg Asp Arg Lys Phe Arg Glu Glu Lys His Pro Arg Glu Glu Arg  
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Ala Glu Glu Gln Phe Ala Arg Asp Thr Ile Arg Arg Gln Glu Gln  
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Glu Leu Arg Gln Glu Glu Glu Gln Arg Arg Arg Gln Glu Arg Glu  
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Arg Lys Phe Gln Glu Glu Gln Ile Arg Arg Arg Gln Glu Glu Gln  
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Arg Arg Arg Gln Ile Leu Glu Pro Gly Thr Arg Gln Phe Ala Asn  
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Thr Glu Gln Ala Ser Val Pro Arg Ala Met Ala Ala Thr Leu Gly Ala  
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35 40 45

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115 120 125

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130 135 140

gcc ctg ggg cag agc tgg ctg gag gtc caa ctg gcc act ggg ggc ctg 480  
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165 170 175

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Gln Gly Leu Leu Asp Arg Glu Thr Trp His Lys Leu Ser Glu Leu Glu  
180 185 190

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195 200 205

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Gly Leu Ala Leu Leu Pro Leu Lys Ile Thr Phe Arg Ser Met Gly Gly  
225 230 235 240

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ggg Gly	gtt Val 290	gtc Val	ctg Leu	ctg Leu	ccc Pro	gaa Glu 295	ggc Gly	cac His	aag Lys	aag Lys	agc Ser 300	ttt Phe	ttc Phe	cag Gln	gct Ala	912
gcc Ala 305	acc Thr	gag Glu	cac His	ctg Leu	ctc Leu 310	cca Pro	atg Met	ggc Gly	acc Thr	gcg Ala 315	ctg Leu	cca Pro	ctc Leu	cta Leu	gag Glu 320	960
gcc Ala	cag Gln	gct Ala	gcc Ala	acc Thr 325	cac His	acc Thr	ctg Leu	gtg Val	gac Asp 330	ccc Pro	atc Ile	aca Thr	ggc Gly	cag Gln 335	cgg Arg	1008
ctg Leu	tgg Trp	gta Val	gac Asp 340	gag Glu	gca Ala	gtc Val	agg Arg	gca Ala 345	ggc Gly	ctg Leu	gtc Val	agc Ser	cca Pro 350	gag Glu	ctc Leu	1056
cat His	gag Glu	cag Gln 355	ctc Leu	ctg Leu	gtg Val	gct Ala	gag Glu 360	cag Gln	gcc Ala	gtg Val	aca Thr	ggg Gly 365	cac His	cac His	gac Asp	1104
ccc Pro	ttc Phe 370	agt Ser	ggc Gly	tcc Ser	caa Gln	atc Ile 375	ccc Pro	ctt Leu	ttc Phe	cag Gln	gcc Ala 380	atg Met	aag Lys	aag Lys	ggg Gly	1152
cta Leu 385	gtg Val	gac Asp	agg Arg	cca Pro	cta Leu 390	gca Ala	ctg Leu	cgg Arg	ctc Leu	ttg Leu 395	gat Asp	gcc Ala	cag Gln	ctg Leu	gcc Ala 400	1200
aca Thr	ggc Gly	ggg Gly	ctg Leu	gtc Val 405	tgt Cys	cca Pro	gca Ala	cgc Arg	agg Arg 410	ctc Leu	cgg Arg	ctg Leu	ccc Pro	ctg Leu 415	gag Glu	1248
gcc Ala	gcc Ala	ctg Leu	cgc Arg 420	tgc Cys	ggc Gly	tgc Cys	ctg Leu	gat Asp 425	gaa Glu	gac Asp	act Thr	cag Gln	cgg Arg 430	cag Gln	ctc Leu	1296
tcg Ser	cag Gln	gct Ala 435	ggc Gly	agc Ser	ttc Phe	tca Ser	gac Asp 440	ggc Gly	acg Thr	cac His	ggc Gly 445	ggc Gly	ctg Leu	cgc Arg	tat Tyr	1344
gaa Glu 450	cag Gln	ctg Leu	ctg Leu	gcc Ala	ctc Leu	tgt Cys 455	gtc Val	acc Thr	gac Asp	cca Pro	gag Glu 460	acc Thr	ggg Gly	ctt Leu	gcc Ala	1392
ttc Phe 465	ctg Leu	cca Pro	ctc Leu	tca Ser	ggg Gly 470	gga Gly	ccc Pro	cgg Arg	gga Gly	ggg Gly 475	gag Glu	ccc Pro	cag Gln	gga Gly	ccc Pro 480	1440
cca Pro	ttc Phe	atc Ile	aag Lys	tac Tyr 485	agc Ser	act Thr	cgg Arg	cag Gln	gcc Ala 490	ctg Leu	agc Ser	acg Thr	gcc Ala	aca Thr 495	gcc Ala	1488
acc Thr	gtc Val	tct Ser	gtg Val 500	ggg Gly	aag Lys	ttc Phe	cgg Arg	ggc Gly 505	cgg Arg	ccc Pro	gtg Val	tcc Ser	ctc Leu 510	tgg Trp	gag Glu	1536
ctg Leu	ctc Leu	ttc Phe 515	tct Ser	gag Glu	gcc Ala	atc Ile	tcc Ser 520	tca Ser	gag Glu	cag Gln	agg Arg	gcg Ala 525	atg Met	ctg Leu	gcc Ala	1584

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cag Gln	cag Gln	tac Tyr	cag Gln	gaa Glu	ggg Gly	acc Thr	ctc Leu	tcc Ser	gtg Val	gag Glu	aag Lys	ctg Leu	gcc Ala	gct Ala	gag Glu	1632
530						535					540					
ctg Leu	agc Ser	gcc Ala	acc Thr	ctt Leu	gag Glu	cag Gln	gct Ala	gca Ala	gcc Ala	act Thr	gcc Ala	agg Arg	gtc Val	acc Thr	ttt Phe	1680
545					550					555					560	
tct Ser	ggg Gly	ctg Leu	agg Arg	gac Asp	acc Thr	gtg Val	aca Thr	cca Pro	gga Gly	gag Glu	ctg Leu	ctg Leu	aaa Lys	gcc Ala	gag Glu	1728
				565					570					575		
atc Ile	atc Ile	gac Asp	cag Gln	gac Asp	ctg Leu	tac Tyr	gag Glu	cgg Arg	ttg Leu	gag Glu	cat His	gga Gly	cag Gln	gcc Ala	aca Thr	1776
			580					585					590			
gcc Ala	aag Lys	gat Asp	gtg Val	ggc Gly	agc Ser	ctg Leu	gcc Ala	tgc Ser	gcg Ala	cag Gln	agg Arg	tac Tyr	ctg Leu	cag Gln	ggt Gly	1824
		595					600					605				
acg Thr	ggc Gly	tgc Cys	att Ile	gct Ala	ggc Gly	ctg Leu	ctg Leu	ctc Leu	cct Pro	ggc Gly	tcc Ser	cag Gln	gaa Glu	cgc Arg	ctg Leu	1872
	610					615					620					
agc Ser	atc Ile	tat Tyr	gag Glu	gcc Ala	cga Arg	tgc Cys	aag Lys	ggg Gly	ctc Leu	ctc Leu	cgg Arg	ccc Pro	ggc Gly	act Thr	gcc Ala	1920
					630						635				640	
ctc Leu	atc Ile	ctt Leu	ctg Leu	gag Glu	gca Ala	caa Gln	gct Ala	gcc Ala	aca Thr	ggc Gly	ttc Phe	atc Ile	atc Ile	gac Asp	cca Pro	1968
				645					650					655		
aaa Lys	gca Ala	aac Asn	aag Lys	ggg Gly	cac His	tcc Ser	gtt Val	gag Glu	gag Glu	gca Ala	ctg Leu	agg Arg	gct Ala	gct Ala	gtc Val	2016
			660					665					670			
att Ile	ggg Gly	cct Pro	gat Asp	gtg Val	ttc Phe	gcg Ala	aag Lys	ctg Leu	ctg Leu	tgc Ser	gct Ala	gag Glu	cgc Arg	gct Ala	gtc Val	2064
		675					680					685				
act Thr	ggc Gly	tac Tyr	act Thr	gac Asp	ccc Pro	tac Tyr	acc Thr	ggg Gly	cag Gln	cag Gln	atc Ile	tcc Ser	ctc Leu	ttc Phe	cag Gln	2112
	690					695					700					
gcc Ala	atg Met	cag Gln	aag Lys	ggc Gly	ctc Leu	atc Ile	gtc Val	cgg Arg	gag Glu	cac His	ggc Gly	atc Ile	cgc Arg	ctg Leu	ctg Leu	2160
	705				710					715				720		
gag Glu	gcc Ala	cag Gln	atc Ile	gcc Ala	acg Thr	ggc Gly	ggc Gly	gtc Val	atc Ile	gac Asp	ccc Pro	gtg Val	cac His	agc Ser	cac His	2208
				725					730					735		
cgc Arg	gtg Val	ccc Pro	gtg Val	gac Asp	gtg Val	gcc Ala	tac Tyr	cgg Arg	cgc Arg	ggc Gly	tac Tyr	ttc Phe	gat Asp	cag Gln	atg Met	2256
			740					745					750			
ctg Leu	aac Asn	ttg Leu	atc Ile	ctg Leu	ttg Leu	gac Asp	cct Pro	tct Ser	gac Asp	gac Asp	acc Thr	aag Lys	ggc Gly	ttc Phe	ttc Phe	2304
		755					760					765				
gac Asp	ccc Pro	aac Asn	acg Thr	cac His	gag Glu	aac Asn	ctc Leu	acg Thr	tac Tyr	ctg Leu	cag Gln	ctt Leu	ctg Leu	gag Glu	cgc Arg	2352
	770					775					780					
tgt Cys	gtg Val	cgt Arg	gac Asp	ccc Pro	gag Glu	acg Thr	ggc Gly	ctg Leu	tac Tyr	ctc Leu	ctg Leu	cca Pro	ctc Leu	agc Ser	agc Ser	2400
	785				790					795					800	
acg Cys	cag Gln	tcc Pro	ccg Pro	ctg Leu	gtg Val	gac Asp	agt Thr	gcc Ala	acc Gln	cag Gln	cag Gln	gcc Ala	ttc Phe	cag Gln	aac Gln	2448

Thr	Gln	Ser	Pro	Leu	Val	Asp	Ser	Ala	Thr	Gln	Gln	Ala	Phe	Gln	Asn	
				805					810					815		
ctg	ctg	ctc	tcc	gtg	aag	tat	gga	cgg	ttt	cag	ggg	cag	agg	gtc	tcc	2496
Leu	Leu	Leu	Ser	Val	Lys	Tyr	Gly	Arg	Phe	Gln	Gly	Gln	Arg	Val	Ser	
			820					825					830			
gcg	tgg	gag	ctg	atc	aac	tct	gag	tac	ttc	agc	gag	ggc	cgc	agg	agg	2544
Ala	Trp	Glu	Leu	Ile	Asn	Ser	Glu	Tyr	Phe	Ser	Glu	Gly	Arg	Arg	Arg	
		835					840					845				
cag	ctg	ctg	cgt	cgc	tac	cgg	cag	cgc	gag	gtc	acg	ctg	ggg	cag	gtg	2592
Gln	Leu	Leu	Arg	Arg	Tyr	Arg	Gln	Arg	Glu	Val	Thr	Leu	Gly	Gln	Val	
	850					855					860					
gca	aag	ctg	ctg	gag	gcg	gag	acg	cag	aga	cag	gcg	gac	atc	atg	ctg	2640
Ala	Lys	Leu	Leu	Glu	Ala	Glu	Thr	Gln	Arg	Gln	Ala	Asp	Ile	Met	Leu	
				865		870				875					880	
ccc	gca	ctg	cgg	agc	cgg	gtc	acc	gtc	cac	cag	ctc	ctg	gag	gcc	ggc	2688
Pro	Ala	Leu	Arg	Ser	Arg	Val	Thr	Val	His	Gln	Leu	Leu	Glu	Ala	Gly	
				885					890					895		
atc	att	gac	cag	cag	ctg	ttg	gac	caa	gtg	ctg	gcc	ggg	aca	atc	agc	2736
Ile	Ile	Asp	Gln	Gln	Leu	Leu	Asp	Gln	Val	Leu	Ala	Gly	Thr	Ile	Ser	
			900					905					910			
ccg	gag	gcc	ctc	cta	ctc	atg	gac	ggc	gtc	cgc	agg	tac	ctg	tgc	ggc	2784
Pro	Glu	Ala	Leu	Leu	Leu	Met	Asp	Gly	Val	Arg	Arg	Tyr	Leu	Cys	Gly	
		915					920					925				
ctg	gga	gct	gtg	ggc	ggc	gtg	cgg	ctg	ctg	ccc	tct	ggc	cag	cgg	ctc	2832
Leu	Gly	Ala	Val	Gly	Gly	Val	Arg	Leu	Leu	Pro	Ser	Gly	Gln	Arg	Leu	
	930					935					940					
agc	ctc	tac	cag	gcc	atg	agg	cag	aag	ctg	ctg	ggg	ccc	agg	gtg	gcc	2880
Ser	Leu	Tyr	Gln	Ala	Met	Arg	Gln	Lys	Leu	Leu	Gly	Pro	Arg	Val	Ala	
					950					955					960	
ctg	gcc	ctg	ctg	gag	gcc	cag	gcg	gcc	acc	gga	acc	atc	atg	gac	cct	2928
Leu	Ala	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Thr	Ile	Met	Asp	Pro	
				965					970					975		
cac	agc	cca	gag	agc	ctc	tcg	gtg	gat	gag	gcc	gtg	cgc	agg	ggc	gtg	2976
His	Ser	Pro	Glu	Ser	Leu	Ser	Val	Asp	Glu	Ala	Val	Arg	Arg	Gly	Val	
			980					985					990			
gtg	ggg	ccg	gag	ctg	tat	ggc	agg	ctg	aag	cgg	gct	gag	ggc	gcc	att	3024
Val	Gly	Pro	Glu	Leu	Tyr	Gly	Arg	Leu	Lys	Arg	Ala	Glu	Gly	Ala	Ile	
		995					1000					1005				
gct	ggc	ttc	aga	gac	ccc	ttc	tct	ggg	aag	cag	gtg	tct	gtg	ttc		3069
Ala	Gly	Phe	Arg	Asp	Pro	Phe	Ser	Gly	Lys	Gln	Val	Ser	Val	Phe		
	1010					1015					1020					
cag	gcc	atg	aag	aaa	ggc	ctc	atc	cct	tgg	gag	caa	gct	gcc	cgc		3114
Gln	Ala	Met	Lys	Lys	Gly	Leu	Ile	Pro	Trp	Glu	Gln	Ala	Ala	Arg		
	1025					1030					1035					
ctc	ctg	gag	gct	caa	gtg	gcc	aca	gga	ggg	atc	att	gac	ccc	acc		3159
Leu	Leu	Glu	Ala	Gln	Val	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Thr		
	1040					1045					1050					
agc	cac	cac	cac	ctc	ccc	atg	cca	gtg	gcc	att	cag	cgt	ggc	tat		3204
Ser	His	His	His	Leu	Pro	Met	Pro	Val	Ala	Ile	Gln	Arg	Gly	Tyr		
	1055					1060					1065					
gtt	gac	cag	gag	atg	gag	aca	gcc	ttg	tcc	agc	tcc	tcc	gag	acc		3249
Val	Asp	Gln	Glu	Met	Glu	Thr	Ala	Leu	Ser	Ser	Ser	Ser	Glu	Thr		

1070	1075	1080	
tcc Phe	ccc Pro 1085	aca Thr	3294
ctg Leu	gag Glu 1100	gag Glu	3339
ccc Pro	ctg Leu 1115	cca Pro	3384
cag Gln	agg Arg 1130	agc Ser	3429
ctc Leu	tgg Trp 1145	gac Asp	3474
agg Arg	ggc Gly 1160	ctg Leu	3519
cag Gln	ctg Leu 1175	cta Leu	3564
ctg Leu	gcc Ala 1190	cag Gln	3609
ccc Pro	gct Ala 1205	gtc Val	3654
ctt Leu	gag Glu 1220	gcc Ala	3699
gag Glu	cag Gln 1235	ccg Pro	3744
gcc Ala	ggt Gly 1250	gtg Val	3789
cag Gln	gcc Ala 1265	gtg Val	3834
ctg Leu	ctg Leu 1280	gaa Glu	3879
aac Asn	aac Asn 1295	cag Gln	3924
gtg Val	ggc Gly 1310	agg Arg	3969
gcg Ala	gcc Ala 1325	ggg Gly	4014

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tgg	cag	gcc	atg	gag	aag	ggg	ctc	gtg	cca	cag	aac	gag	ggc	ttg	4059
Trp	Gln	Ala	Met	Glu	Lys	Gly	Leu	Val	Pro	Gln	Asn	Glu	Gly	Leu	
	1340					1345					1350				
ccc	ctc	ctg	cag	gtg	cag	ctg	gcc	aca	ggg	ggt	gtg	gtg	gac	cct	4104
Pro	Leu	Leu	Gln	Val	Gln	Leu	Ala	Thr	Gly	Gly	Val	Val	Asp	Pro	
	1355					1360					1365				
gtc	cac	ggg	gtg	cac	ctg	ccc	cag	gcg	gca	gcc	tgc	aga	ctc	ggc	4149
Val	His	Gly	Val	His	Leu	Pro	Gln	Ala	Ala	Ala	Cys	Arg	Leu	Gly	
	1370					1375					1380				
ctt	ctg	gac	aca	cag	acg	agc	cag	gtg	ctg	act	gca	gtt	gac	aag	4194
Leu	Leu	Asp	Thr	Gln	Thr	Ser	Gln	Val	Leu	Thr	Ala	Val	Asp	Lys	
	1385					1390					1395				
gac	aac	aag	ttc	ttc	ttt	gac	ccc	agt	gcg	cgg	gac	cag	gtg	acc	4239
Asp	Asn	Lys	Phe	Phe	Phe	Asp	Pro	Ser	Ala	Arg	Asp	Gln	Val	Thr	
	1400					1405					1410				
tac	cag	cag	ctc	agg	gag	cgc	tgc	gtg	tgc	gac	tcc	gag	acc	gga	4284
Tyr	Gln	Gln	Leu	Arg	Glu	Arg	Cys	Val	Cys	Asp	Ser	Glu	Thr	Gly	
	1415					1420					1425				
ttg	ttg	ctg	ttg	cca	ctg	cct	tca	gac	aca	gtg	ctt	gag	gtg	gac	4329
Leu	Leu	Leu	Leu	Pro	Leu	Pro	Ser	Asp	Thr	Val	Leu	Glu	Val	Asp	
	1430					1435					1440				
gac	cac	acc	gcg	gtg	gct	ctg	agg	gcc	atg	aag	gtg	ccc	gtc	agc	4374
Asp	His	Thr	Ala	Val	Ala	Leu	Arg	Ala	Met	Lys	Val	Pro	Val	Ser	
	1445					1450					1455				
aca	ggg	agg	ttt	aag	ggg	tgt	agc	gtg	tca	ctc	tgg	gac	ctg	ctg	4419
Thr	Gly	Arg	Phe	Lys	Gly	Cys	Ser	Val	Ser	Leu	Trp	Asp	Leu	Leu	
	1460					1465					1470				
ctc	tcc	gaa	tac	gtt	ggc	gct	gac	aag	cgg	cgg	gag	ctg	gtg	gca	4464
Leu	Ser	Glu	Tyr	Val	Gly	Ala	Asp	Lys	Arg	Arg	Glu	Leu	Val	Ala	
	1475					1480					1485				
ctc	tgt	cgg	tct	ggg	agg	gct	gcg	gcc	ctg	cgg	cag	gtg	gtc	agc	4509
Leu	Cys	Arg	Ser	Gly	Arg	Ala	Ala	Ala	Leu	Arg	Gln	Val	Val	Ser	
	1490					1495					1500				
gca	gtc	acc	gcc	ctg	gtc	gag	gct	gca	gag	agg	cag	ccc	ctg	cag	4554
Ala	Val	Thr	Ala	Leu	Val	Glu	Ala	Ala	Glu	Arg	Gln	Pro	Leu	Gln	
	1505					1510					1515				
gcc	acc	ttc	aga	ggg	ctc	cgg	aag	cag	gtg	tca	gcc	agg	gac	ctg	4599
Ala	Thr	Phe	Arg	Gly	Leu	Arg	Lys	Gln	Val	Ser	Ala	Arg	Asp	Leu	
	1520					1525					1530				
ttc	agg	gcg	cag	ctg	atc	agc	agg	aag	acg	ctg	gac	gag	ctg	agc	4644
Phe	Arg	Ala	Gln	Leu	Ile	Ser	Arg	Lys	Thr	Leu	Asp	Glu	Leu	Ser	
	1535					1540					1545				
cag	ggg	aca	acg	act	gtg	aag	gag	gtg	gcg	gag	atg	gac	agc	gtg	4689
Gln	Gly	Thr	Thr	Thr	Val	Lys	Glu	Val	Ala	Glu	Met	Asp	Ser	Val	
	1550					1555					1560				
aag	cgg	tcc	ctg	gag	gga	ggc	aac	ttc	att	gcc	ggg	gtc	ctt	atc	4734
Lys	Arg	Ser	Leu	Glu	Gly	Gly	Asn	Phe	Ile	Ala	Gly	Val	Leu	Ile	
	1565					1570					1575				
cag	ggc	acc	cag	gag	agg	atg	agc	atc	cca	gag	gcc	ctg	agg	agg	4779
Gln	Gly	Thr	Gln	Glu	Arg	Met	Ser	Ile	Pro	Glu	Ala	Leu	Arg	Arg	
	1580					1585					1590				

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cac His	atc Ile 1595	ctg Leu	cgg Arg	cct Pro	ggc Gly	aca Thr 1600	gcc Ala	ctg Leu	gtg Val	ctg Leu	ctg Leu 1605	gag Glu	gca Ala	cag Gln	4824
gca Ala	gct Ala 1610	acc Thr	ggc Gly	ttc Phe	atc Ile	atc Ile 1615	gac Asp	ccc Pro	gcg Ala	gag Glu	aac Asn 1620	cgg Arg	aag Lys	ctg Leu	4869
acc Thr	gtg Val 1625	gag Glu	gag Glu	gcg Ala	ttc Phe	aaa Lys 1630	gca Ala	gga Gly	atg Met	ttc Phe	ggg Gly 1635	aaa Lys	gaa Glu	acc Thr	4914
tac Tyr	gtg Val 1640	aag Lys	ctg Leu	ctg Leu	tcg Ser	gcc Ala 1645	gag Glu	cgc Arg	gcc Ala	gtc Val	acc Thr 1650	ggc Gly	tac Tyr	acc Thr	4959
gac Asp	ccc Pro 1655	tat Tyr	acc Thr	ggg Gly	cag Gln	cag Gln 1660	atc Ile	tcc Ser	ctc Leu	ttc Phe	cag Gln 1665	gcc Ala	atg Met	cag Gln	5004
aag Lys	gac Asp 1670	ctc Leu	atc Ile	gtc Val	cgg Arg	gag Glu 1675	cac His	ggc Gly	atc Ile	cgc Arg	ctg Leu 1680	ctg Leu	gag Glu	gcc Ala	5049
cag Gln	atc Ile 1685	gcc Ala	acg Thr	ggc Gly	ggc Gly	atc Ile 1690	atc Ile	gac Asp	ccc Pro	gtg Val	cac His 1695	agc Ser	cac His	cgc Arg	5094
gtg Val	ccc Pro 1700	gtg Val	gac Asp	gtg Val	gcc Ala	tac Tyr 1705	cgc Arg	tgc Cys	ggc Gly	tac Tyr	ttc Phe 1710	gac Asp	gag Glu	gag Glu	5139
atg Met	aac Asn 1715	cgc Arg	atc Ile	ctg Leu	gcg Ala	gac Asp 1720	ccc Pro	agc Ser	gac Asp	gac Asp	acc Thr 1725	aag Lys	ggc Gly	ttc Phe	5184
ttc Phe	gac Asp 1730	ccc Pro	aac Asn	acg Thr	cac His	gag Glu 1735	aac Asn	ctc Leu	acg Thr	tac Tyr	ctg Leu 1740	cag Gln	ctt Leu	ctg Leu	5229
gag Glu	cgc Arg 1745	tgt Cys	gtg Val	gag Glu	gac Asp	ccc Pro 1750	gag Glu	acg Thr	ggc Gly	ctg Leu	tac Tyr 1755	ctg Leu	cta Leu	caa Gln	5274
atc Ile	ata Ile 1760	aag Lys	aaa Lys	gga Gly	gaa Glu	aac Asn 1765	tac Tyr	gtg Val	tac Tyr	atc Ile	aat Asn 1770	gag Glu	gcc Ala	acg Thr	5319
aga Arg	cac His 1775	gtg Val	ttg Leu	caa Gln	tcc Ser	aga Arg 1780	act Thr	gca Ala	aaa Lys	atg Met	cgc Arg 1785	gtg Val	ggg Gly	agg Arg	5364
ttt Phe	gct Ala 1790	gac Asp	cag Gln	gtg Val	gtc Val	tct Ser 1795	ttc Phe	tgg Trp	gac Asp	ctg Leu	ctg Leu 1800	tcc Ser	tct Ser	cca Pro	5409
tac Tyr	ttc Phe 1805	aca Thr	gag Glu	gac Asp	agg Arg	aag Lys 1810	cgg Arg	gag Glu	ctc Leu	atc Ile	cag Gln 1815	gag Glu	tat Tyr	gga Gly	5454
gcc Ala	cag Gln 1820	agt Ser	ggg Gly	ggc Gly	ctg Leu	gag Glu 1825	aaa Lys	ttg Leu	ctg Leu	gaa Glu	atc Ile 1830	atc Ile	acc Thr	acg Thr	5499
aca Thr	att Ile 1835	gaa Glu	gaa Glu	aca Thr	gag Glu	acg Thr 1840	caa Gln	aac Asn	caa Gln	ggc Gly	atc Ile 1845	aaa Lys	gtg Val	gcg Ala	5544
gcc atc	aga	ggg	gag	gtg	aca	gct	gca	gac	ctg	ttc	aac	tcc	agg		5589



Ala	Ile	Arg	Gly	Glu	Val	Thr	Ala	Ala	Asp	Leu	Phe	Asn	Ser	Arg	
	1850					1855					1860				
gtc	atc	gat	cag	aag	acc	ctg	cac	aca	ctt	cgt	gtg	ggg	agg	act	5634
Val	Ile	Asp	Gln	Lys	Thr	Leu	His	Thr	Leu	Arg	Val	Gly	Arg	Thr	
	1865					1870					1875				
ggg	gga	cag	gca	ctc	agc	acg	ctg	gag	tgt	gtg	aag	ccc	tat	ctg	5679
Gly	Gly	Gln	Ala	Leu	Ser	Thr	Leu	Glu	Cys	Val	Lys	Pro	Tyr	Leu	
	1880					1885					1890				
gaa	ggc	agc	gac	tgc	att	gcg	ggg	gtc	acg	gtg	ccc	tcc	acc	agg	5724
Glu	Gly	Ser	Asp	Cys	Ile	Ala	Gly	Val	Thr	Val	Pro	Ser	Thr	Arg	
	1895					1900					1905				
gag	gtc	atg	agc	ctc	cat	gag	gcc	agc	agg	aag	gag	ctc	atc	cct	5769
Glu	Val	Met	Ser	Leu	His	Glu	Ala	Ser	Arg	Lys	Glu	Leu	Ile	Pro	
	1910					1915					1920				
gca	gca	ttt	gcg	act	tgg	ctg	ctg	gag	gcg	cag	gcc	gcc	acc	ggg	5814
Ala	Ala	Phe	Ala	Thr	Trp	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	
	1925					1930					1935				
ttc	ctc	ctg	gac	ccc	tgc	acc	cgc	cag	aag	ctc	tct	gtg	gat	gag	5859
Phe	Leu	Leu	Asp	Pro	Cys	Thr	Arg	Gln	Lys	Leu	Ser	Val	Asp	Glu	
	1940					1945					1950				
gct	gtg	gat	gtg	ggc	ctg	gtg	aac	gag	gag	ctg	cgg	gag	agg	ctc	5904
Ala	Val	Asp	Val	Gly	Leu	Val	Asn	Glu	Glu	Leu	Arg	Glu	Arg	Leu	
	1955					1960					1965				
ctg	aag	gct	gaa	aga	gct	gcc	acg	ggc	tac	agg	gat	ccg	gcc	aca	5949
Leu	Lys	Ala	Glu	Arg	Ala	Ala	Thr	Gly	Tyr	Arg	Asp	Pro	Ala	Thr	
	1970					1975					1980				
gga	gac	acg	atc	ccg	ctg	ttc	cag	gcc	atg	cag	aag	cag	ctc	atc	5994
Gly	Asp	Thr	Ile	Pro	Leu	Phe	Gln	Ala	Met	Gln	Lys	Gln	Leu	Ile	
	1985					1990					1995				
gag	aag	gcg	gag	gca	ctg	agg	ctg	ctg	gag	gtg	cag	gtg	gcc	acg	6039
Glu	Lys	Ala	Glu	Ala	Leu	Arg	Leu	Leu	Glu	Val	Gln	Val	Ala	Thr	
	2000					2005					2010				
ggg	ggt	gtc	atc	gac	cca	cag	cac	cac	cac	cgg	ctc	cca	ctg	gaa	6084
Gly	Gly	Val	Ile	Asp	Pro	Gln	His	His	His	Arg	Leu	Pro	Leu	Glu	
	2015					2020					2025				
aca	gcc	tac	aga	cgg	ggc	tgt	ctg	cac	aag	gac	atc	tat	gcg	ctc	6129
Thr	Ala	Tyr	Arg	Arg	Gly	Cys	Leu	His	Lys	Asp	Ile	Tyr	Ala	Leu	
	2030					2035					2040				
att	tcc	gac	cag	aag	cac	atg	agg	aaa	cgg	ttt	gtg	gac	ccg	aac	6174
Ile	Ser	Asp	Gln	Lys	His	Met	Arg	Lys	Arg	Phe	Val	Asp	Pro	Asn	
	2045					2050					2055				
acg	caa	gag	aag	gtc	tcg	tac	cga	gag	ctg	cag	gag	agg	tgc	cgc	6219
Thr	Gln	Glu	Lys	Val	Ser	Tyr	Arg	Glu	Leu	Gln	Glu	Arg	Cys	Arg	
	2060					2065					2070				
cca	caa	gag	gac	acg	ggc	tgg	gtg	ctg	ttc	cca	gtg	aac	aag	gct	6264
Pro	Gln	Glu	Asp	Thr	Gly	Trp	Val	Leu	Phe	Pro	Val	Asn	Lys	Ala	
	2075					2080					2085				
gca	cgg	gac	tcc	gag	cac	atc	gat	gac	gag	acg	aga	agg	gcc	ctg	6309
Ala	Arg	Asp	Ser	Glu	His	Ile	Asp	Asp	Glu	Thr	Arg	Arg	Ala	Leu	
	2090					2095					2100				
gag	gca	gag	caa	gtg	gaa	atc	aca	gtg	gga	agg	ttc	aga	ggc	cag	6354
Glu	Ala	Glu	Gln	Val	Glu	Ile	Thr	Val	Gly	Arg	Phe	Arg	Gly	Gln	

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2105	2110	2115		
aaa cca aca ctg tgg gca cta ctg aat tcc gaa tac gtg aca gag Lys Pro Thr Leu Trp Ala Leu Leu Asn Ser Glu Tyr Val Thr Glu	2120	2125	2130	6399
gag aag aag ctc cag ctg gtg agg atg tat aga aca cac acc aga Glu Lys Lys Leu Gln Leu Val Arg Met Tyr Arg Thr His Thr Arg	2135	2140	2145	6444
cgg gca ctg cag acg gta gcg cag ctc atc tta gag ttg atc gag Arg Ala Leu Gln Thr Val Ala Gln Leu Ile Leu Glu Leu Ile Glu	2150	2155	2160	6489
aag cag gaa acc agc aac aaa cac ctg tgg ttc caa gga att aga Lys Gln Glu Thr Ser Asn Lys His Leu Trp Phe Gln Gly Ile Arg	2165	2170	2175	6534
cga cag atc aca gct tct gaa ctc ctc agc tca gcc ata atc acg Arg Gln Ile Thr Ala Ser Glu Leu Leu Ser Ser Ala Ile Ile Thr	2180	2185	2190	6579
gag gaa atg ctc cag gac ctg gaa acg gga cgg agc acg acg caa Glu Glu Met Leu Gln Asp Leu Glu Thr Gly Arg Ser Thr Thr Gln	2195	2200	2205	6624
gag ctc atg gag gac gac cgc gtc aag cgc tac ctg gag ggc acc Glu Leu Met Glu Asp Asp Arg Val Lys Arg Tyr Leu Glu Gly Thr	2210	2215	2220	6669
agc tgc atc gcg ggc gtc ctg gtg ccc gcc aag gac cag ccc ggc Ser Cys Ile Ala Gly Val Leu Val Pro Ala Lys Asp Gln Pro Gly	2225	2230	2235	6714
cgc cag gag aag atg agc atc tac cag gcc atg tgg aag ggc gtg Arg Gln Glu Lys Met Ser Ile Tyr Gln Ala Met Trp Lys Gly Val	2240	2245	2250	6759
ctg cgg ccc ggc acg gcc ctg gtg ctg ctg gag gcg cag gcg gcc Leu Arg Pro Gly Thr Ala Leu Val Leu Leu Glu Ala Gln Ala Ala	2255	2260	2265	6804
acc ggc ttc gtc atc gac ccc gtg cgc aac ctg agg ctg tcg gtg Thr Gly Phe Val Ile Asp Pro Val Arg Asn Leu Arg Leu Ser Val	2270	2275	2280	6849
gag gag ccc gtg ccc gcg ggc gtg gtg ggc agc gag atc cag gag Glu Glu Pro Val Pro Ala Gly Val Val Gly Ser Glu Ile Gln Glu	2285	2290	2295	6894
aag ctg ctg tcg gcc gag cgc gcc gtc acc ggc tac acc gac ccc Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Thr Asp Pro	2300	2305	2310	6939
tac acc ggg cag cag atc tcc ctc ttc cag gcc atg cag aag gac Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln Ala Met Gln Lys Asp	2315	2320	2325	6984
ctc atc gtc cgg gag cac ggc atc cgc ctg ctg gag gcc cag atc Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu Glu Ala Gln Ile	2330	2335	2340	7029
gcc acg ggc ggc gtc atc gac ccc gtg cac agc cac cgc gtg ccc Ala Thr Gly Gly Val Ile Asp Pro Val His Ser His Arg Val Pro	2345	2350	2355	7074
gtg gac gtg gcc tac cgg cgc ggc tac ttc gac gag gag atg aac Val Asp Val Ala Tyr Arg Arg Gly Tyr Phe Asp Glu Glu Met Asn	2360	2365	2370	7119

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cgt Arg	gtc Val 2375	ctg Leu	gcc Ala	gac Asp	ccc Pro	agc Ser 2380	gac Asp	gac Asp	acc Thr	aag Lys	ggg Gly 2385	ttc Phe	ttc Phe	gac Asp	7164
ccc Pro	aac Asn 2390	acg Thr	cac His	gag Glu	aac Asn	ctc Leu 2395	acg Thr	tac Tyr	gtg Val	cag Gln	ctg Leu 2400	ctg Leu	cgc Arg	cgc Arg	7209
tgc Cys	gtg Val 2405	ccc Pro	gac Asp	ccg Pro	gac Asp	acc Thr 2410	ggg Gly	ctc Leu	tac Tyr	atg Met	ctg Leu 2415	cag Gln	ctg Leu	gca Ala	7254
ggc Gly	cgg Arg 2420	ggc Gly	tcc Ser	gcc Ala	gtg Val	cac His 2425	cag Gln	ctg Leu	agc Ser	gag Glu	gag Glu 2430	ctg Leu	cgc Arg	tgt Cys	7299
gcc Ala	ctg Leu 2435	cgc Arg	gac Asp	gcc Ala	cgc Arg	gtg Val 2440	acg Thr	cca Pro	ggc Gly	tcg Ser	ggc Gly 2445	gcc Ala	ctc Leu	cag Gln	7344
ggc Gly	cag Gln 2450	agc Ser	gtc Val	tcc Ser	gtc Val	tgg Trp 2455	gag Glu	ctc Leu	ctc Leu	ttc Phe	tac Tyr 2460	cgc Arg	gag Glu	gtg Val	7389
tcc Ser	gag Glu 2465	gac Asp	cgg Arg	cgc Arg	cag Gln	gac Asp 2470	ctg Leu	ctg Leu	agc Ser	aga Arg	tac Tyr 2475	cgg Arg	gcg Ala	ggc Gly	7434
acg Thr	ctg Leu 2480	acc Thr	gtg Val	gag Glu	gag Glu	ctg Leu 2485	ggc Gly	gcc Ala	acc Thr	ctc Leu	acc Thr 2490	tcg Ser	ctg Leu	ctg Leu	7479
gcc Ala	cag Gln 2495	gcc Ala	cag Gln	gcc Ala	cag Gln	gcc Ala 2500	cgg Arg	gcc Ala	gag Glu	gcc Ala	gag Glu 2505	gcc Ala	ggg Gly	agc Ser	7524
ccg Pro	cgc Arg 2510	cca Pro	gac Asp	ccc Pro	cgg Arg	gag Glu 2515	gcc Ala	ctg Leu	cgt Arg	gcg Ala	gcc Ala 2520	acc Thr	atg Met	gag Glu	7569
gtc Val	aag Lys 2525	gtg Val	ggc Gly	cgc Arg	ctc Leu	cgg Arg 2530	ggg Gly	cgc Arg	gcg Ala	gtg Val	ccc Pro 2535	gtg Val	tgg Trp	gac Asp	7614
gtg Val	ctg Leu 2540	gcg Ala	tcc Ser	ggc Gly	tac Tyr	gtg Val 2545	agc Ser	agg Arg	gcc Ala	gcc Ala	cgg Arg 2550	gag Glu	gag Glu	ctg Leu	7659
ctg Leu	gcc Ala 2555	gag Glu	ttt Phe	ggc Gly	tcg Ser	ggg Gly 2560	acc Thr	ctg Leu	gac Asp	ttg Leu	ccc Pro 2565	gcg Ala	ctg Leu	acc Thr	7704
cgc Arg	cgg Arg 2570	ctg Leu	acc Thr	gcc Ala	atc Ile	atc Ile 2575	gag Glu	gag Glu	gcc Ala	gag Glu	gaa Glu 2580	gcc Ala	ccc Pro	ggg Gly	7749
gcc Ala	cgg Arg 2585	ccg Pro	cag Gln	ctc Leu	cag Gln	gac Asp 2590	gcc Ala	agg Arg	cgc Arg	ggc Gly	ccg Pro 2595	cgg Arg	gag Glu	cca Pro	7794
ggg Gly	cca Pro 2600	gcc Ala	ggg Gly	cga Arg	ggg Gly	gac Asp 2605	ggc Gly	gac Asp	tcg Ser	ggg Gly	cgc Arg 2610	tcc Ser	cag Gln	cga Arg	7839
gag Glu	ggc Gly 2615	cag Gln	ggg Gly	gag Glu	ggc Gly	gag Glu 2620	acc Thr	cag Gln	gag Glu	gcc Ala	gcc Ala 2625	gcc Ala	gcc Ala	gcc Ala	7884

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gcc Ala	gcc Ala 2630	gcc Ala	cgc Arg	cgc Arg	cag Gln	gag Glu 2635	cag Gln	acc Thr	ctg Leu	cgt Arg	gat Asp 2640	gcc Ala	acc Thr	atg Met	7929
gag Glu	gtg Val 2645	cag Gln	cgc Arg	ggg Gly	cag Gln	ttc Phe 2650	cag Gln	ggg Gly	cgg Arg	ccg Pro	gtc Val 2655	tcc Ser	gtg Val	tgg Trp	7974
gac Asp	gtc Val 2660	ctc Leu	ttc Phe	tcc Ser	tcg Ser	tac Tyr 2665	ctg Leu	agc Ser	gag Glu	gcc Ala	cgc Arg 2670	cga Arg	gac Asp	gag Glu	8019
ctc Leu	ctg Leu 2675	gcc Ala	cag Gln	cac His	gcg Ala	gcc Ala 2680	ggc Gly	gcc Ala	ctg Leu	ggc Gly	ctg Leu 2685	ccc Pro	gac Asp	ctc Leu	8064
gtc Val	gcc Ala 2690	gtc Val	ctc Leu	acc Thr	cgg Arg	gtc Val 2695	atc Ile	gag Glu	gag Glu	acg Thr	gag Glu 2700	gag Glu	cgg Arg	ctc Leu	8109
agc Ser	aag Lys 2705	gtg Val	tcc Ser	ttc Phe	cgc Arg	ggc Gly 2710	ctg Leu	agg Arg	cgc Arg	cag Gln	gtg Val 2715	tcc Ser	gcc Ala	tcc Ser	8154
gag Glu	ctg Leu 2720	cac His	acg Thr	tcc Ser	ggg Gly	atc Ile 2725	ctg Leu	ggc Gly	ccc Pro	gag Glu	acc Thr 2730	ctg Leu	cgg Arg	gac Asp	8199
ctg Leu	gcc Ala 2735	cag Gln	ggc Gly	act Thr	aag Lys	acg Thr 2740	ctg Leu	cag Gln	gag Glu	gtg Val	acg Thr 2745	gag Glu	atg Met	gac Asp	8244
tcg Ser	gtc Val 2750	aag Lys	cgc Arg	tac Tyr	ctg Leu	gag Glu 2755	ggc Gly	acc Thr	agc Ser	tgc Cys	atc Ile 2760	gcg Ala	ggc Gly	gtc Val	8289
ctg Leu	gtg Val 2765	ccc Pro	gcc Ala	aag Lys	gac Asp	cag Gln 2770	ccc Pro	ggc Gly	cgc Arg	cag Gln	gag Glu 2775	aag Lys	atg Met	agc Ser	8334
atc Ile	tac Tyr 2780	cag Gln	gcc Ala	atg Met	tgg Trp	aag Lys 2785	ggc Gly	gtg Val	ctg Leu	cgg Arg	ccc Pro 2790	ggc Gly	acg Thr	gcc Ala	8379
ctg Leu	gtg Val 2795	ctg Leu	ctg Leu	gag Glu	gcg Ala	cag Gln 2800	gcg Ala	gcc Ala	acc Thr	ggc Gly	ttc Phe 2805	gtc Val	atc Ile	gac Asp	8424
ccc Pro	gtg Val 2810	cgc Arg	aac Asn	ctg Leu	agg Arg	ctg Leu 2815	tcg Ser	gtg Val	gag Glu	gag Glu	gcc Ala 2820	gtg Val	gcc Ala	gcg Ala	8469
ggc Gly	gtg Val 2825	gtg Val	ggc Gly	ggc Gly	gag Glu	atc Ile 2830	cag Gln	gag Glu	aag Lys	ctg Leu	ctg Leu 2835	tcg Ser	gcc Ala	gag Glu	8514
cgc Arg	gcc Ala 2840	gtc Val	acc Thr	ggc Gly	tac Tyr	acc Thr 2845	gac Asp	ccc Pro	tac Tyr	acc Thr	ggg Gly 2850	cag Gln	cag Gln	atc Ile	8559
tcc Ser	ctc Leu 2855	ttc Phe	cag Gln	gcc Ala	atg Met	cag Gln 2860	aag Lys	gac Asp	ctc Leu	atc Ile	gtc Val 2865	cgg Arg	gag Glu	cac His	8604
ggc Gly	atc Ile 2870	cgc Arg	ctg Leu	ctg Leu	gag Glu	gcc Ala 2875	cag Gln	atc Ile	gcc Ala	acg Thr	ggc Gly 2880	ggc Gly	gtc Val	atc Ile	8649
gac	ccc	gtg	cac	agc	cac	cgc	gtg	ccc	gtg	gac	gtg	gcc	tac	cgg	8694

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Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Arg	
	2885					2890					2895				
cgc	ggc	tac	ttc	gac	gag	gag	atg	aac	cgt	gtc	ctg	gcc	gac	ccc	8739
Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Asn	Arg	Val	Leu	Ala	Asp	Pro	
	2900					2905					2910				
agc	gac	gac	acc	aag	ggc	ttc	ttc	gac	ccc	aac	acg	cac	gag	aac	8784
Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	
	2915					2920					2925				
ctc	acg	tac	gtg	cag	ctg	ctg	cgc	cgc	tgc	gtg	ccc	gac	ccg	gac	8829
Leu	Thr	Tyr	Val	Gln	Leu	Leu	Arg	Arg	Cys	Val	Pro	Asp	Pro	Asp	
	2930					2935					2940				
acc	ggg	ctc	tac	atg	ctg	cag	ctg	gca	ggc	cgg	ggc	tcc	gcc	gtg	8874
Thr	Gly	Leu	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Arg	Gly	Ser	Ala	Val	
	2945					2950					2955				
cac	cag	ctg	agc	gag	gag	ctg	cgc	tgt	gcc	ctg	cgc	gac	gcc	cgc	8919
His	Gln	Leu	Ser	Glu	Glu	Leu	Arg	Cys	Ala	Leu	Arg	Asp	Ala	Arg	
	2960					2965					2970				
gtg	acg	cca	ggc	tcg	ggc	gcc	ctc	cag	ggc	cag	agc	gtc	tcc	gtc	8964
Val	Thr	Pro	Gly	Ser	Gly	Ala	Leu	Gln	Gly	Gln	Ser	Val	Ser	Val	
	2975					2980					2985				
tgg	gag	ctc	ctc	ttc	tac	cgc	gag	gtg	tcc	gag	gac	cgg	cgc	cag	9009
Trp	Glu	Leu	Leu	Phe	Tyr	Arg	Glu	Val	Ser	Glu	Asp	Arg	Arg	Gln	
	2990					2995					3000				
gac	ctg	ctg	agc	aga	tac	cgg	gcg	ggc	acg	ctg	acc	gtg	gag	gag	9054
Asp	Leu	Leu	Ser	Arg	Tyr	Arg	Ala	Gly	Thr	Leu	Thr	Val	Glu	Glu	
	3005					3010					3015				
ctg	ggc	gcc	acc	ctc	acc	tcg	ctg	ctg	gcc	cag	gcc	cag	gcc	cag	9099
Leu	Gly	Ala	Thr	Leu	Thr	Ser	Leu	Leu	Ala	Gln	Ala	Gln	Ala	Gln	
	3020					3025					3030				
gcc	cgg	gcc	gag	gcc	gag	gcc	ggg	agc	ccg	cgc	cca	gac	ccc	cgg	9144
Ala	Arg	Ala	Glu	Ala	Glu	Ala	Gly	Ser	Pro	Arg	Pro	Asp	Pro	Arg	
	3035					3040					3045				
gag	gcc	ctg	cgt	gcg	gcc	acc	atg	gag	gtc	aag	gtg	ggc	cgc	ctc	9189
Glu	Ala	Leu	Arg	Ala	Ala	Thr	Met	Glu	Val	Lys	Val	Gly	Arg	Leu	
	3050					3055					3060				
cgg	ggg	cgc	gcg	gtg	ccc	gtg	tgg	gac	gtg	ctg	gcg	tcc	ggc	tac	9234
Arg	Gly	Arg	Ala	Val	Pro	Val	Trp	Asp	Val	Leu	Ala	Ser	Gly	Tyr	
	3065					3070					3075				
gtg	agc	ggg	gcc	gcc	cgg	gag	gag	ctg	ctg	gcc	gag	ttt	ggc	tcg	9279
Val	Ser	Gly	Ala	Ala	Arg	Glu	Glu	Leu	Leu	Ala	Glu	Phe	Gly	Ser	
	3080					3085					3090				
ggg	acc	ctg	gac	ttg	ccc	gcg	ctg	acc	cgc	cgg	ctg	acc	gcc	atc	9324
Gly	Thr	Leu	Asp	Leu	Pro	Ala	Leu	Thr	Arg	Arg	Leu	Thr	Ala	Ile	
	3095					3100					3105				
atc	gag	gag	gcc	gag	gag	gcc	ccc	ggg	gcc	cgg	ccg	cag	ctc	cag	9369
Ile	Glu	Glu	Ala	Glu	Glu	Ala	Pro	Gly	Ala	Arg	Pro	Gln	Leu	Gln	
	3110					3115					3120				
gac	gcc	tgg	cgc	ggc	ccg	cgg	gag	cca	ggg	cca	gcc	ggg	cga	ggg	9414
Asp	Ala	Trp	Arg	Gly	Pro	Arg	Glu	Pro	Gly	Pro	Ala	Gly	Arg	Gly	
	3125					3130					3135				
gac	ggc	gac	tcg	ggg	cgc	tcc	cag	cga	gag	ggc	cag	ggg	gag	ggc	9459
Asp	Gly	Asp	Ser	Gly	Arg	Ser	Gln	Arg	Glu	Gly	Gln	Gly	Glu	Gly	

3140	3145	3150	
gag acc cag gag gcc gcc gcc gcc gcc gcc gcc gcc cgc cgc cag Glu Thr Gln Glu Ala Ala Ala Ala Ala Ala Ala Arg Arg Gln	3155	3160	3165 9504
gag cag acc ctg cgt gat gcc acc atg gag gtg cag cgc ggg cag Glu Gln Thr Leu Arg Asp Ala Thr Met Glu Val Gln Arg Gly Gln	3170	3175	3180 9549
ttc cag ggg cgg ccg gtc tcc gtg tgg gac gtc ctc ttc tcc tcg Phe Gln Gly Arg Pro Val Ser Val Trp Asp Val Leu Phe Ser Ser	3185	3190	3195 9594
tac ctg agc gag gcc cgc cga gac gag ctc ctg gcc cag cac gcg Tyr Leu Ser Glu Ala Arg Arg Asp Glu Leu Leu Ala Gln His Ala	3200	3205	3210 9639
gcc ggc gcc ctg ggc ctg ccc gac ctc gtc gcc gtc ctc acc cgg Ala Gly Ala Leu Gly Leu Pro Asp Leu Val Ala Val Leu Thr Arg	3215	3220	3225 9684
gtc atc gag gag acg gag gag cgg ctc agc aag gtg tcc ttc cgc Val Ile Glu Glu Thr Glu Glu Arg Leu Ser Lys Val Ser Phe Arg	3230	3235	3240 9729
ggc ctg agg cgc cag gtg tcc gcc tcc gag ctg cac acg tcc ggg Gly Leu Arg Arg Gln Val Ser Ala Ser Glu Leu His Thr Ser Gly	3245	3250	3255 9774
atc ctg ggc ccc gag acc ctg cgg gac ctg gcc cag ggc act aag Ile Leu Gly Pro Glu Thr Leu Arg Asp Leu Ala Gln Gly Thr Lys	3260	3265	3270 9819
acg ctg cag gag gtg acg gag atg gac tcg gtc aag cgc tac ctg Thr Leu Gln Glu Val Thr Glu Met Asp Ser Val Lys Arg Tyr Leu	3275	3280	3285 9864
gag ggc acc agc tgc atc gcg ggc gtc ctg gtg ccc gcc aag gac Glu Gly Thr Ser Cys Ile Ala Gly Val Leu Val Pro Ala Lys Asp	3290	3295	3300 9909
cag ccc ggc cgc cag gag aag atg agc atc tac cag gcc atg tgg Gln Pro Gly Arg Gln Glu Lys Met Ser Ile Tyr Gln Ala Met Trp	3305	3310	3315 9954
aag ggc gtg ctg cgg ccc ggc acg gcc ctg gtg ctg ctg gag gcg Lys Gly Val Leu Arg Pro Gly Thr Ala Leu Val Leu Leu Glu Ala	3320	3325	3330 9999
cag gcg gcc acc ggc ttc gtc atc gac ccc gtg cgc aac ctg agg Gln Ala Ala Thr Gly Phe Val Ile Asp Pro Val Arg Asn Leu Arg	3335	3340	3345 10044
ctg tcg gtg gag gag gcc gtg gcc gcg ggc gtg gtg ggc ggc gag Leu Ser Val Glu Glu Ala Val Ala Ala Gly Val Val Gly Gly Glu	3350	3355	3360 10089
atc cag gag aag ctg ctg tcg gcc gag cgc gcc gtc acc ggc tac Ile Gln Glu Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr	3365	3370	3375 10134
acc gac ccc tac acc ggg cag cag atc tcc ctc ttc cag gcc atg Thr Asp Pro Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln Ala Met	3380	3385	3390 10179
cag aag gac ctc atc gtc cgg gag cac ggc atc cgc ctg ctg gag Gln Lys Asp Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu Glu	3395	3400	3405 10224

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gcc Ala	cag Gln 3410	atc Ile	gcc Ala	acg Thr	ggc Gly	ggc Gly 3415	gtc Val	atc Ile	gac Asp	ccc Pro	gtg Val 3420	cac His	agc Ser	cac His	10269
cgc Arg	gtg Val 3425	ccc Pro	gtg Val	gac Asp	gtg Val	gcc Ala 3430	tac Tyr	cgg Arg	cgc Arg	ggc Gly	tac Tyr 3435	ttc Phe	gac Asp	gag Glu	10314
gag Glu	atg Met 3440	aac Asn	cgt Arg	gtc Val	ctg Leu	gcc Ala 3445	gac Asp	ccc Pro	agc Ser	gac Asp	gac Asp 3450	acc Thr	aag Lys	ggt Gly	10359
ttc Phe	ttc Phe 3455	gac Asp	ccc Pro	aac Asn	acg Thr	cac His 3460	gag Glu	aac Asn	ctc Leu	acg Thr	tac Tyr 3465	gtg Val	cag Gln	ctg Leu	10404
ctg Leu	cgc Arg 3470	cgc Arg	tgc Cys	gtg Val	ccc Pro	gac Asp 3475	ccg Pro	gac Asp	acc Thr	ggg Gly	ctc Leu 3480	tac Tyr	atg Met	ctg Leu	10449
cag Gln	ctg Leu 3485	gca Ala	ggc Gly	cgg Arg	ggc Gly	tcc Ser 3490	gcc Ala	gtg Val	cac His	cag Gln	ctg Leu 3495	agc Ser	gag Glu	gag Glu	10494
ctg Leu	cgc Arg 3500	tgt Cys	gcc Ala	ctg Leu	cgc Arg	gac Asp 3505	gcc Ala	cgc Arg	gtg Val	acg Thr	cca Pro 3510	ggc Gly	tcg Ser	ggc Gly	10539
gcc Ala	ctc Leu 3515	cag Gln	ggc Gly	cag Gln	agc Ser	gtc Val 3520	tcc Ser	gtc Val	tgg Trp	gag Glu	ctc Leu 3525	ctc Leu	ttc Phe	tac Tyr	10584
cgc Arg	gag Glu 3530	gtg Val	tcc Ser	gag Glu	gac Asp	cgg Arg 3535	cgc Arg	cag Gln	gac Asp	ctg Leu	ctg Leu 3540	agc Ser	aga Arg	tac Tyr	10629
cgg Arg	gcg Ala 3545	ggc Gly	acg Thr	ctg Leu	acc Thr	gtg Val 3550	gag Glu	gag Glu	ctg Leu	ggc Gly	gcc Ala 3555	acc Thr	ctc Leu	acc Thr	10674
tcg Ser	ctg Leu 3560	ctg Leu	gcc Ala	cag Gln	gcc Ala	cag Gln 3565	gcc Ala	cag Gln	gcc Ala	cgc Arg	gcc Ala 3570	gag Glu	gcc Ala	gag Glu	10719
gcc Ala	ggg Gly 3575	agc Ser	ccg Pro	cgc Arg	cca Pro	gac Asp 3580	ccc Pro	cgg Arg	gag Glu	gcc Ala	ctg Leu 3585	cgt Arg	gcg Ala	gcc Ala	10764
acc Thr	atg Met 3590	gag Glu	gtc Val	aag Lys	gtg Val	ggc Gly 3595	cgc Arg	ctc Leu	cgg Arg	ggg Gly	cgc Arg 3600	gcg Ala	gtg Val	ccc Pro	10809
gtg Val	tgg Trp 3605	gac Asp	gtg Val	ctg Leu	gcg Ala	tcc Ser 3610	ggc Gly	tac Tyr	gtg Val	agc Ser	ggg Gly 3615	gcc Ala	gcc Ala	cgg Arg	10854
gag Glu	gag Glu 3620	ctg Leu	ctg Leu	gcc Ala	gag Glu	ttt Phe 3625	ggc Gly	tcg Ser	ggg Gly	acc Thr	ctg Leu 3630	gac Asp	ttg Leu	ccc Pro	10899
gcg Ala	ctg Leu 3635	acc Thr	cgc Arg	cgg Arg	ctg Leu	acc Thr 3640	gcc Ala	atc Ile	atc Ile	gag Glu	gag Glu 3645	gcc Ala	gag Glu	gag Glu	10944
gcc Ala	ccc Pro 3650	ggg Gly	gcc Ala	cgg Arg	ccg Pro	cag Gln 3655	ctc Leu	cag Gln	gac Asp	gcc Ala	tgg Trp 3660	cgc Arg	ggc Gly	ccg Pro	10989

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cgg Arg	gag Glu 3665	cca Pro	ggg Gly	cca Pro	gcc Ala	ggg Gly 3670	cga Arg	ggg Gly	gac Asp	ggc Gly	gac Asp 3675	tcg Ser	ggg Gly	cgc Arg	11034
tcc Ser	cag Gln 3680	cga Arg	gag Glu	ggc Gly	cag Gln	ggg Gly 3685	gag Glu	ggc Gly	gag Glu	acc Thr	cag Gln 3690	gag Glu	gcc Ala	gcc Ala	11079
gcc Ala	gcc Ala 3695	gcc Ala	gcc Ala	gcc Ala	gcc Ala	cgc Arg 3700	cgc Arg	cag Gln	gag Glu	cag Gln	acc Thr 3705	ctg Leu	cgt Arg	gat Asp	11124
gcc Ala	acc Thr 3710	atg Met	gag Glu	gtg Val	cag Gln	cgc Arg 3715	ggg Gly	cag Gln	ttc Phe	cag Gln	ggg Gly 3720	cgg Arg	ccg Pro	gtc Val	11169
tcc Ser	gtg Val 3725	tgg Trp	gac Asp	gtc Val	ctc Leu	ttc Phe 3730	tcc Ser	tcg Ser	tac Tyr	ctg Leu	agc Ser 3735	gag Glu	gcc Ala	cgc Arg	11214
cga Arg	gac Asp 3740	gag Glu	ctc Leu	ctg Leu	gcc Ala	cag Gln 3745	cac His	gcg Ala	gcc Ala	ggc Gly	gcc Ala 3750	ctg Leu	ggc Gly	ctg Leu	11259
ccc Pro	gac Asp 3755	ctc Leu	gtc Val	gcc Ala	gtc Val	ctc Leu 3760	acc Thr	cgg Arg	gtc Val	atc Ile	gag Glu 3765	gag Glu	acg Thr	gag Glu	11304
gag Glu	cgg Arg 3770	ctc Leu	agc Ser	aag Lys	gtg Val	tcc Ser 3775	ttc Phe	cgc Arg	ggc Gly	ctg Leu	agg Arg 3780	cgc Arg	cag Gln	gtg Val	11349
tcc Ser	gcc Ala 3785	tcc Ser	gag Glu	ctg Leu	cac His	acg Thr 3790	tcc Ser	ggg Gly	atc Ile	ctg Leu	ggc Gly 3795	ccc Pro	gag Glu	acc Thr	11394
ctg Leu	cgg Arg 3800	gac Asp	ctg Leu	gcc Ala	cag Gln	ggc Gly 3805	act Thr	aag Lys	acg Thr	ctg Leu	cag Gln 3810	gag Glu	gtg Val	acg Thr	11439
gag Glu	atg Met 3815	gac Asp	tcg Ser	gtc Val	aag Lys	cgc Arg 3820	tac Tyr	ctg Leu	gag Glu	ggc Gly	acc Thr 3825	agc Ser	tgc Cys	atc Ile	11484
gcg Ala	ggc Gly 3830	gtc Val	ctg Leu	gtg Val	ccc Pro	gcc Ala 3835	aag Lys	gac Asp	cag Gln	ccc Pro	ggc Gly 3840	cgc Arg	cag Gln	gag Glu	11529
aag Lys	atg Met 3845	agc Ser	atc Ile	tac Tyr	cag Gln	gcc Ala 3850	atg Met	tgg Trp	aag Lys	ggc Gly	gtg Val 3855	ctg Leu	cgg Arg	ccc Pro	11574
ggc Gly	acg Thr 3860	gcc Ala	ctg Leu	gtg Val	ctg Leu	ctg Leu 3865	gag Glu	gcg Ala	cag Gln	gcg Ala	gcc Ala 3870	acc Thr	ggc Gly	ttc Phe	11619
gtc Val	atc Ile 3875	gac Asp	ccc Pro	gtg Val	cgc Arg	aac Asn 3880	ctg Leu	agg Arg	ctg Leu	tcg Ser	gtg Val 3885	gag Glu	gag Glu	gcc Ala	11664
gtg Val	gcc Ala 3890	gcg Ala	ggc Gly	gtg Val	gtg Val	ggc Gly 3895	ggc Gly	gag Glu	atc Ile	cag Gln	gag Glu 3900	aag Lys	ctg Leu	ctg Leu	11709
tcg Ser	gcc Ala 3905	gag Glu	cgc Arg	gcc Ala	gtc Val	acc Thr 3910	ggc Gly	tac Tyr	acc Thr	gac Asp	ccc Pro 3915	tac Tyr	acc Thr	ggg Gly	11754
cag cag	atc tcc	ctc ctc	ttc cag	gcc atg	cag cag	gac aag	ctc atc	gtc gtc							11799



Gln	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln	Lys	Asp	Leu	Ile	Val	
	3920					3925					3930				
cgc	gag	cac	ggc	atc	cgc	ctg	ctg	gag	gcc	cag	atc	gcc	acg	ggc	11844
Arg	Glu	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	
	3935					3940					3945				
ggc	gtc	atc	gac	ccc	gtg	cac	agc	cac	cgc	gtg	ccc	gtg	gac	gtg	11889
Gly	Val	Ile	Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	
	3950					3955					3960				
gcc	tac	cgg	cgc	ggc	tac	ttc	gac	gag	gag	atg	aac	cgt	gtc	ctg	11934
Ala	Tyr	Arg	Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Asn	Arg	Val	Leu	
	3965					3970					3975				
gcc	gac	ccc	agc	gac	gac	acc	aag	ggc	ttc	ttc	gac	ccc	aac	acg	11979
Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	
	3980					3985					3990				
cac	gag	aac	ctc	acg	tac	gtg	cag	ctg	ctg	cgc	cgc	tgc	gtg	ccc	12024
His	Glu	Asn	Leu	Thr	Tyr	Val	Gln	Leu	Leu	Arg	Arg	Cys	Val	Pro	
	3995					4000					4005				
gac	ccg	gac	acc	ggg	ctc	tac	atg	ctg	cag	ctg	gca	ggc	cgg	ggc	12069
Asp	Pro	Asp	Thr	Gly	Leu	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Arg	Gly	
	4010					4015					4020				
tcc	gcc	gtg	cac	cag	ctg	agc	gag	gag	ctg	cgc	tgt	gcc	ctg	cgc	12114
Ser	Ala	Val	His	Gln	Leu	Ser	Glu	Glu	Leu	Arg	Cys	Ala	Leu	Arg	
	4025					4030					4035				
gac	gcc	cgc	gtg	acg	cca	ggc	tgc	ggc	gcc	ctc	cag	ggc	cag	agc	12159
Asp	Ala	Arg	Val	Thr	Pro	Gly	Ser	Gly	Ala	Leu	Gln	Gly	Gln	Ser	
	4040					4045					4050				
gtc	tcc	gtc	tgg	gag	ctc	ctc	ttc	tac	cgc	gag	gtg	tcc	gag	gac	12204
Val	Ser	Val	Trp	Glu	Leu	Leu	Phe	Tyr	Arg	Glu	Val	Ser	Glu	Asp	
	4055					4060					4065				
cgc	cgc	cag	gac	ctg	ctg	agc	aga	tac	cgg	gcg	agc	acg	ctg	acc	12249
Arg	Arg	Gln	Asp	Leu	Leu	Ser	Arg	Tyr	Arg	Ala	Ser	Thr	Leu	Thr	
	4070					4075					4080				
gtg	gag	gag	ctg	ggc	gcc	acc	ctc	acc	tgc	ctg	ctg	gcc	cag	gcc	12294
Val	Glu	Glu	Leu	Gly	Ala	Thr	Leu	Thr	Ser	Leu	Leu	Ala	Gln	Ala	
	4085					4090					4095				
cag	gcc	cag	gcc	cgg	gcc	gag	gcc	gag	gcc	ggg	agc	ccg	cgc	cca	12339
Gln	Ala	Gln	Ala	Arg	Ala	Glu	Ala	Glu	Ala	Gly	Ser	Pro	Arg	Pro	
	4100					4105					4110				
gac	ccc	cgg	gag	gcc	ctg	cgt	gcg	gcc	acc	atg	gag	gtc	aag	gtg	12384
Asp	Pro	Arg	Glu	Ala	Leu	Arg	Ala	Ala	Thr	Met	Glu	Val	Lys	Val	
	4115					4120					4125				
ggc	cgc	ctc	cgg	ggg	cgc	gcg	gtg	ccc	gtg	tgg	gac	gtg	ctg	gcg	12429
Gly	Arg	Leu	Arg	Gly	Arg	Ala	Val	Pro	Val	Trp	Asp	Val	Leu	Ala	
	4130					4135					4140				
tcc	ggc	tac	gtg	agc	agg	gcc	gcc	cgg	gag	gag	ctg	ctg	gcc	gag	12474
Ser	Gly	Tyr	Val	Ser	Arg	Ala	Ala	Arg	Glu	Glu	Leu	Leu	Ala	Glu	
	4145					4150					4155				
ttt	ggc	tgc	ggg	acc	ctg	gac	ttg	ccc	gcg	ctg	acc	cgc	cgg	ctg	12519
Phe	Gly	Ser	Gly	Thr	Leu	Asp	Leu	Pro	Ala	Leu	Thr	Arg	Arg	Leu	
	4160					4165					4170				
acc	gcc	atc	atc	gag	gag	gcc	gag	gag	gcc	ccc	ggg	gcc	cgg	ccg	12564
Thr	Ala	Ile	Ile	Glu	Glu	Ala	Glu	Glu	Ala	Pro	Gly	Ala	Arg	Pro	

4175		4180		4185											
cag	ctc	cag	gac	gcc	tgg	cgc	ggc	ccg	cgg	gag	cca	ggg	cca	gcc	12609
Gln	Leu	Gln	Asp	Ala	Trp	Arg	Gly	Pro	Arg	Glu	Pro	Gly	Pro	Ala	
	4190					4195					4200				
ggg	cga	ggg	gac	ggc	gac	tcg	ggg	cgc	tcc	cag	cga	gag	ggc	cag	12654
Gly	Arg	Gly	Asp	Gly	Asp	Ser	Gly	Arg	Ser	Gln	Arg	Glu	Gly	Gln	
	4205					4210					4215				
ggg	gag	ggc	gag	acc	cag	gag	gcc	gcc	gcc	gcc	acc	gcc	gcc	gcc	12699
Gly	Glu	Gly	Glu	Thr	Gln	Glu	Ala	Ala	Ala	Ala	Thr	Ala	Ala	Ala	
	4220					4225					4230				
cgc	cgc	cag	gag	cag	acc	ctg	cgt	gat	gcc	acc	atg	gag	gtg	cag	12744
Arg	Arg	Gln	Glu	Gln	Thr	Leu	Arg	Asp	Ala	Thr	Met	Glu	Val	Gln	
	4235					4240					4245				
cgc	ggg	cag	ttc	cag	ggg	cgg	ccg	gtc	tcc	gtg	tgg	gac	gtc	ctc	12789
Arg	Gly	Gln	Phe	Gln	Gly	Arg	Pro	Val	Ser	Val	Trp	Asp	Val	Leu	
	4250					4255					4260				
ttc	tcc	tcg	tac	ctg	agc	gag	gcc	cgc	cga	gac	gag	ctc	ctg	gcc	12834
Phe	Ser	Ser	Tyr	Leu	Ser	Glu	Ala	Arg	Arg	Asp	Glu	Leu	Leu	Ala	
	4265					4270					4275				
cag	cac	gcg	gcc	ggc	gcc	ctg	ggc	ctg	ccc	gac	ctc	gtc	gcc	gtc	12879
Gln	His	Ala	Ala	Gly	Ala	Leu	Gly	Leu	Pro	Asp	Leu	Val	Ala	Val	
	4280					4285					4290				
ctc	acc	cgg	gtc	atc	gag	gag	acg	gag	gag	cgg	ctc	agc	aag	gtg	12924
Leu	Thr	Arg	Val	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser	Lys	Val	
	4295					4300					4305				
tcc	ttc	cgc	ggc	ctg	agg	cgc	cag	gtg	tcc	gcc	tcc	gag	ctg	cac	12969
Ser	Phe	Arg	Gly	Leu	Arg	Arg	Gln	Val	Ser	Ala	Ser	Glu	Leu	His	
	4310					4315					4320				
acg	tcc	ggg	atc	ctg	ggc	ccc	gag	acc	ctg	cgg	gac	ctg	gcc	cag	13014
Thr	Ser	Gly	Ile	Leu	Gly	Pro	Glu	Thr	Leu	Arg	Asp	Leu	Ala	Gln	
	4325					4330					4335				
ggc	act	aag	acg	ctg	cag	gag	gtg	acg	gag	atg	gac	tcg	gtc	aag	13059
Gly	Thr	Lys	Thr	Leu	Gln	Glu	Val	Thr	Glu	Met	Asp	Ser	Val	Lys	
	4340					4345					4350				
cgc	tac	ctg	gag	ggc	acc	agc	tgc	atc	gcg	ggc	gtc	ctg	gtg	ccc	13104
Arg	Tyr	Leu	Glu	Gly	Thr	Ser	Cys	Ile	Ala	Gly	Val	Leu	Val	Pro	
	4355					4360					4365				
gcc	aag	gac	cag	ccc	ggc	cgc	cag	gag	aag	atg	agc	atc	tac	cag	13149
Ala	Lys	Asp	Gln	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile	Tyr	Gln	
	4370					4375					4380				
gcc	atg	tgg	aag	ggc	gtg	ctg	cgg	ccc	ggc	acg	gcc	ctg	gtg	ctg	13194
Ala	Met	Trp	Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu	Val	Leu	
	4385					4390					4395				
ctg	gag	gcg	cag	gcg	gcc	acc	ggc	ttc	gtc	atc	gac	ccc	gtg	cgc	13239
Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Val	Ile	Asp	Pro	Val	Arg	
	4400					4405					4410				
aac	ctg	agg	ctg	tcg	gtg	gag	gag	gcc	gtg	gcc	gcg	ggc	gtg	gtg	13284
Asn	Leu	Arg	Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly	Val	Val	
	4415					4420					4425				
ggc	ggc	gag	atc	cag	gag	aag	ctg	ctg	tcg	gcc	gag	cgc	gcc	gtc	13329
Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	
	4430					4435					4440				

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acc Thr	ggc Gly 4445	tac Tyr	acc Thr	gac Asp	ccc Pro	tac Tyr 4450	acc Thr	ggg Gly	cag Gln	cag Gln	atc Ile 4455	tcc Ser	ctc Leu	ttc Phe	13374
cag Gln	gcc Ala 4460	atg Met	cag Gln	aag Lys	gac Asp	ctc Leu 4465	atc Ile	gtc Val	cgg Arg	gag Glu	cac His 4470	ggc Gly	atc Ile	cgc Arg	13419
ctg Leu	ctg Leu 4475	gag Glu	gcc Ala	cag Gln	atc Ile	gcc Ala 4480	acg Thr	ggc Gly	ggc Gly	gtc Val	atc Ile 4485	gac Asp	ccc Pro	gtg Val	13464
cac His	agc Ser 4490	cac His	cgc Arg	gtg Val	ccc Pro	gtg Val 4495	gac Asp	gtg Val	gcc Ala	tac Tyr	cgg Arg 4500	cgc Arg	ggc Gly	tac Tyr	13509
ttc Phe	gac Asp 4505	gag Glu	gag Glu	atg Met	aac Asn	cgt Arg 4510	gtc Val	ctg Leu	gcc Ala	gac Asp	ccc Pro 4515	agc Ser	gac Asp	gac Asp	13554
acc Thr	aag Lys 4520	ggc Gly	ttc Phe	ttc Phe	gac Asp	ccc Pro 4525	aac Asn	acg Thr	cac His	gag Glu	aac Asn 4530	ctc Leu	acg Thr	tac Tyr	13599
gtg Val	cag Gln 4535	ctg Leu	ctg Leu	cgc Arg	cgc Arg	tgc Cys 4540	gtg Val	ccc Pro	gac Asp	ccg Pro	gac Asp 4545	acc Thr	ggg Gly	ctc Leu	13644
tac Tyr	atg Met 4550	ctg Leu	cag Gln	ctg Leu	gca Ala	ggc Gly 4555	cgg Arg	ggc Gly	tcc Ser	gcc Ala	gtg Val 4560	cac His	cag Gln	ctg Leu	13689
agc Ser	gag Glu 4565	gag Glu	ctg Leu	cgc Arg	tgt Cys	gcc Ala 4570	ctg Leu	cgc Arg	gac Asp	gcc Ala	cgc Arg 4575	gtg Val	acg Thr	cca Pro	13734
ggc Gly	tcg Ser 4580	ggc Gly	gcc Ala	ctc Leu	cag Gln	ggc Gly 4585	cag Gln	agc Ser	gtc Val	tcc Ser	gtc Val 4590	tgg Trp	gag Glu	ctc Leu	13779
ctc Leu	ttc Phe 4595	tac Tyr	cgc Arg	gag Glu	gtg Val	tcc Ser 4600	gag Glu	gac Asp	cgg Arg	cgc Arg	cag Gln 4605	gac Asp	ctg Leu	ctg Leu	13824
agc Ser	aga Arg 4610	tac Tyr	cgg Arg	gcg Ala	ggc Gly	acg Thr 4615	ctg Leu	acc Thr	gtg Val	gag Glu	gag Glu 4620	ctg Leu	ggc Gly	gcc Ala	13869
acc Thr	ctc Leu 4625	acc Thr	tcg Ser	ctg Leu	ctg Leu	gcc Ala 4630	cag Gln	gcc Ala	cag Gln	gcc Ala	cag Gln 4635	gcc Ala	cgg Arg	gcc Ala	13914
gag Glu	gcc Ala 4640	gag Glu	gcc Ala	ggg Gly	agc Ser	ccg Pro 4645	cgc Arg	cca Pro	gac Asp	ccc Pro	cgg Arg 4650	gag Glu	gcc Ala	ctg Leu	13959
cgt Arg	gcg Ala 4655	gcc Ala	acc Thr	atg Met	gag Glu	gtc Val 4660	aag Lys	gtg Val	ggc Gly	cgc Arg	ctc Leu 4665	cgg Arg	ggg Gly	cgc Arg	14004
gcg Ala	gtg Val 4670	ccc Pro	gtg Val	tgg Trp	gac Asp	gtg Val 4675	ctg Leu	gcg Ala	tcc Ser	ggc Gly	tac Tyr 4680	gtg Val	agc Ser	ggg Gly	14049
gcc Ala	gcc Ala 4685	cgg Arg	gag Glu	gag Glu	ctg Leu	ctg Leu 4690	gcc Ala	gag Glu	ttt Phe	ggc Gly	tcg Ser 4695	ggg Gly	acc Thr	ctg Leu	14094

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gac Asp	tgt Leu 4700	ccc Pro	gcg Ala	ctg Leu	acc Thr	cgc Arg 4705	cgg Arg	ctg Leu	acc Thr	gcc Ala	atc Ile 4710	atc Ile	gag Glu	gag Glu	14139
gcc Ala	gag Glu 4715	gag Glu	gcc Ala	ccc Pro	ggg Gly	gcc Ala 4720	cgg Arg	ccg Pro	cag Gln	ctc Leu	cag Gln 4725	gac Asp	gcc Ala	tgg Trp	14184
cgc Arg	ggc Gly 4730	ccg Pro	cgg Arg	gag Glu	cca Pro	ggg Gly 4735	cca Pro	gcc Ala	ggg Gly	cga Arg	ggg Gly 4740	gac Asp	ggc Gly	gac Asp	14229
tcg Ser	ggg Gly 4745	cgc Arg	tcc Ser	cag Gln	cga Arg	gag Glu 4750	ggc Gly	cag Gln	ggg Gly	gag Glu	ggc Gly 4755	gag Glu	acc Thr	cag Gln	14274
gag Glu	gcc Ala 4760	gcc Ala	gcc Ala	gcc Ala	gcc Ala	gcc Ala 4765	gcc Ala	gcc Ala	cgc Arg	cgc Arg	cag Gln 4770	gag Glu	cag Gln	acc Thr	14319
ctg Leu	cgt Arg 4775	gat Asp	gcc Ala	acc Thr	atg Met	gag Glu 4780	gtg Val	cag Gln	cgc Arg	ggg Gly	cag Gln 4785	ttc Phe	cag Gln	ggg Gly	14364
cgg Arg	ccg Pro 4790	gtc Val	tcc Ser	gtg Val	tgg Trp	gac Asp 4795	gtc Val	ctc Leu	ttc Phe	tcc Ser	tcg Ser 4800	tac Tyr	ctg Leu	agc Ser	14409
gag Glu	gcc Ala 4805	cgc Arg	cga Arg	gac Asp	gag Glu	ctc Leu 4810	ctg Leu	gcc Ala	cag Gln	cac His	gcg Ala 4815	gcc Ala	ggc Gly	gcc Ala	14454
ctg Leu	ggc Gly 4820	ctg Leu	ccc Pro	gac Asp	ctc Leu	gtc Val 4825	gcc Ala	gtc Val	ctc Leu	acc Thr	cgg Arg 4830	gtc Val	atc Ile	gag Glu	14499
gag Glu	acg Thr 4835	gag Glu	gag Glu	cgg Arg	ctc Leu	agc Ser 4840	aag Lys	gtg Val	tcc Ser	ttc Phe	cgc Arg 4845	ggc Gly	ctg Leu	agg Arg	14544
cgc Arg	cag Gln 4850	gtg Val	tcc Ser	gcc Ala	tcc Ser	gag Glu 4855	ctg Leu	cac His	acg Thr	tcc Ser	ggg Gly 4860	atc Ile	ctg Leu	ggc Gly	14589
ccc Pro	gag Glu 4865	acc Thr	ctg Leu	cgg Arg	gac Asp	ctg Leu 4870	gcc Ala	cag Gln	ggc Gly	act Thr	aag Lys 4875	acg Thr	ctg Leu	cag Gln	14634
gag Glu	gtg Val 4880	acg Thr	gag Glu	atg Met	gac Asp	tcg Ser 4885	gtc Val	aag Lys	cgc Arg	tac Tyr	ctg Leu 4890	gag Glu	ggc Gly	acc Thr	14679
agc Ser	tgc Cys 4895	atc Ile	gcg Ala	ggc Gly	gtc Val	ctg Leu 4900	gtg Val	ccc Pro	gcc Ala	aag Lys	gac Asp 4905	cag Gln	ccc Pro	ggc Gly	14724
cgc Arg	cag Gln 4910	gag Glu	aag Lys	atg Met	agc Ser	atc Ile 4915	tac Tyr	cag Gln	gcc Ala	atg Met	tgg Trp 4920	aag Lys	ggc Gly	gtg Val	14769
ctg Leu	cgg Arg 4925	ccc Pro	ggc Gly	acg Thr	gcc Ala	ctg Leu 4930	gtg Val	ctg Leu	ctg Leu	gag Glu	gcg Ala 4935	cag Gln	gcg Ala	gcc Ala	14814
acc Thr	ggc Gly 4940	ttc Phe	gtc Val	atc Ile	gac Asp	ccc Pro 4945	gtg Val	cgc Arg	aac Asn	ctg Leu	agg Arg 4950	ctg Leu	tcg Ser	gtg Val	14859
gag Glu	gag Glu	gcc Ala	gtg Val	gcc Ala	gcg Ala	ggc Ala	gtg Val	gtg Val	ggc Ala	ggc Ala	gag Glu	atc Ile	cag Gln	gag Glu	14904

Glu Glu Ala Val Ala Ala Gly Val Val Gly Gly Glu Ile Gln Glu  
4955 4960 4965

aag ctg ctg tcg gcc gag cgc gcc gtc acc ggc tac acc gac ccc 14949  
Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Thr Asp Pro  
4970 4975 4980

tac acc ggg cag cag atc tcc ctc ttc cag gcc atg cag aag gac 14994  
Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln Ala Met Gln Lys Asp  
4985 4990 4995

ctc atc gtc cgg gag cac ggc atc cgc ctg ctg gag gcc cag atc 15039  
Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu Glu Ala Gln Ile  
5000 5005 5010

gcc acg ggc ggc gtc atc gac ccc gtg cac agc cac cgc gtg ccc 15084  
Ala Thr Gly Gly Val Ile Asp Pro Val His Ser His Arg Val Pro  
5015 5020 5025

gtg gac gtg gcc tac cgg cgc gcc tac ttc gac gag gag atg aac 15129  
Val Asp Val Ala Tyr Arg Arg Gly Tyr Phe Asp Glu Glu Met Asn  
5030 5035 5040

cgc gtc ctg gcc gac ccc agc gac gac acc aag ggc ttc ttc gac 15174  
Arg Val Leu Ala Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp  
5045 5050 5055

ccc aac acg cac gag aac ctc acg tac ctg cag ctt ctg cag agg 15219  
Pro Asn Thr His Glu Asn Leu Thr Tyr Leu Gln Leu Leu Gln Arg  
5060 5065 5070

gcc acc ctg gac cct gag acg ggg ctc cta ttt ctt tct ctc tct 15264  
Ala Thr Leu Asp Pro Glu Thr Gly Leu Leu Phe Leu Ser Leu Ser  
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cta cag  
Leu Gln 15270  
5090

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<211> 5090  
<212> PRT  
<213> Homo sapiens  
  
<400> 134

Met Ser Gly His Thr Leu Pro Pro Leu Pro Val Pro Gly Thr Asn Ser  
1 5 10 15

Thr Glu Gln Ala Ser Val Pro Arg Ala Met Ala Ala Thr Leu Gly Ala  
20 25 30

Gly Thr Pro Pro Arg Pro Gln Ala Arg Ser Ile Ala Gly Val Tyr Val  
35 40 45

Glu Ala Ser Gly Gln Ala Gln Ser Val Tyr Ala Ala Met Glu Gln Gly  
50 55 60

Leu Leu Pro Ala Gly Leu Gly Gln Ala Leu Leu Glu Ala Gln Ala Ala  
65 70 75 80

Thr Gly Gly Leu Val Asp Leu Ala Arg Gly Gln Leu Leu Pro Val Ser  
85 90 95

Lys Ala Leu Gln Gln Gly Leu Val Gly Leu Glu Leu Lys Glu Lys Leu  
 100 105 110  
 Leu Ala Ala Glu Arg Ala Thr Thr Gly Tyr Pro Asp Pro Tyr Gly Gly  
 115 120 125  
 Glu Lys Leu Ala Leu Phe Gln Ala Ile Gly Lys Glu Val Val Asp Arg  
 130 135 140  
 Ala Leu Gly Gln Ser Trp Leu Glu Val Gln Leu Ala Thr Gly Gly Leu  
 145 150 155 160  
 Val Asp Pro Ala Gln Gly Val Leu Val Ala Pro Glu Pro Ala Cys His  
 165 170 175  
 Gln Gly Leu Leu Asp Arg Glu Thr Trp His Lys Leu Ser Glu Leu Glu  
 180 185 190  
 Pro Gly Thr Gly Asp Leu Arg Phe Leu Asn Pro Asn Thr Leu Glu Arg  
 195 200 205  
 Leu Thr Tyr His Gln Leu Leu Glu Arg Cys Val Arg Ala Pro Gly Ser  
 210 215 220  
 Gly Leu Ala Leu Leu Pro Leu Lys Ile Thr Phe Arg Ser Met Gly Gly  
 225 230 235 240  
 Ala Val Ser Ala Ala Glu Leu Leu Glu Val Gly Ile Leu Asp Glu Gln  
 245 250 255  
 Ala Val Gln Gly Leu Arg Glu Gly Arg Leu Ala Ala Val Asp Val Ser  
 260 265 270  
 Ala Arg Ala Glu Val Arg Arg Tyr Leu Glu Gly Thr Gly Ser Val Ala  
 275 280 285  
 Gly Val Val Leu Leu Pro Glu Gly His Lys Lys Ser Phe Phe Gln Ala  
 290 295 300  
 Ala Thr Glu His Leu Leu Pro Met Gly Thr Ala Leu Pro Leu Leu Glu  
 305 310 315 320  
 Ala Gln Ala Ala Thr His Thr Leu Val Asp Pro Ile Thr Gly Gln Arg  
 325 330 335  
 Leu Trp Val Asp Glu Ala Val Arg Ala Gly Leu Val Ser Pro Glu Leu  
 340 345 350  
 His Glu Gln Leu Leu Val Ala Glu Gln Ala Val Thr Gly His His Asp  
 355 360 365

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Pro Phe Ser Gly Ser Gln Ile Pro Leu Phe Gln Ala Met Lys Lys Gly  
370 375 380

Leu Val Asp Arg Pro Leu Ala Leu Arg Leu Leu Asp Ala Gln Leu Ala  
385 390 395 400

Thr Gly Gly Leu Val Cys Pro Ala Arg Arg Leu Arg Leu Pro Leu Glu  
405 410 415

Ala Ala Leu Arg Cys Gly Cys Leu Asp Glu Asp Thr Gln Arg Gln Leu  
420 425 430

Ser Gln Ala Gly Ser Phe Ser Asp Gly Thr His Gly Gly Leu Arg Tyr  
435 440 445

Glu Gln Leu Leu Ala Leu Cys Val Thr Asp Pro Glu Thr Gly Leu Ala  
450 455 460

Phe Leu Pro Leu Ser Gly Gly Pro Arg Gly Gly Glu Pro Gln Gly Pro  
465 470 475 480

Pro Phe Ile Lys Tyr Ser Thr Arg Gln Ala Leu Ser Thr Ala Thr Ala  
485 490 495

Thr Val Ser Val Gly Lys Phe Arg Gly Arg Pro Val Ser Leu Trp Glu  
500 505 510

Leu Leu Phe Ser Glu Ala Ile Ser Ser Glu Gln Arg Ala Met Leu Ala  
515 520 525

Gln Gln Tyr Gln Glu Gly Thr Leu Ser Val Glu Lys Leu Ala Ala Glu  
530 535 540

Leu Ser Ala Thr Leu Glu Gln Ala Ala Ala Thr Ala Arg Val Thr Phe  
545 550 555 560

Ser Gly Leu Arg Asp Thr Val Thr Pro Gly Glu Leu Leu Lys Ala Glu  
565 570 575

Ile Ile Asp Gln Asp Leu Tyr Glu Arg Leu Glu His Gly Gln Ala Thr  
580 585 590

Ala Lys Asp Val Gly Ser Leu Ala Ser Ala Gln Arg Tyr Leu Gln Gly  
595 600 605

Thr Gly Cys Ile Ala Gly Leu Leu Leu Pro Gly Ser Gln Glu Arg Leu  
610 615 620

Ser Ile Tyr Glu Ala Arg Cys Lys Gly Leu Leu Arg Pro Gly Thr Ala  
625 630 635 640

Leu Ile Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Ile Asp Pro  
645 650 655

Lys Ala Asn Lys Gly His Ser Val Glu Glu Ala Leu Arg Ala Ala Val  
660 665 670

Ile Gly Pro Asp Val Phe Ala Lys Leu Leu Ser Ala Glu Arg Ala Val  
675 680 685

Thr Gly Tyr Thr Asp Pro Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln  
690 695 700

Ala Met Gln Lys Gly Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu  
705 710 715 720

Glu Ala Gln Ile Ala Thr Gly Gly Val Ile Asp Pro Val His Ser His  
725 730 735

Arg Val Pro Val Asp Val Ala Tyr Arg Arg Gly Tyr Phe Asp Gln Met  
740 745 750

Leu Asn Leu Ile Leu Leu Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
755 760 765

Asp Pro Asn Thr His Glu Asn Leu Thr Tyr Leu Gln Leu Leu Glu Arg  
770 775 780

Cys Val Arg Asp Pro Glu Thr Gly Leu Tyr Leu Leu Pro Leu Ser Ser  
785 790 795 800

Thr Gln Ser Pro Leu Val Asp Ser Ala Thr Gln Gln Ala Phe Gln Asn  
805 810 815

Leu Leu Leu Ser Val Lys Tyr Gly Arg Phe Gln Gly Gln Arg Val Ser  
820 825 830

Ala Trp Glu Leu Ile Asn Ser Glu Tyr Phe Ser Glu Gly Arg Arg Arg  
835 840 845

Gln Leu Leu Arg Arg Tyr Arg Gln Arg Glu Val Thr Leu Gly Gln Val  
850 855 860

Ala Lys Leu Leu Glu Ala Glu Thr Gln Arg Gln Ala Asp Ile Met Leu  
865 870 875 880

Pro Ala Leu Arg Ser Arg Val Thr Val His Gln Leu Leu Glu Ala Gly  
885 890 895

Ile Ile Asp Gln Gln Leu Leu Asp Gln Val Leu Ala Gly Thr Ile Ser  
900 905 910

Pro Glu Ala Leu Leu Leu Met Asp Gly Val Arg Arg Tyr Leu Cys Gly  
Seite 748



915

920

925

Leu Gly Ala Val Gly Gly Val Arg Leu Leu Pro Ser Gly Gln Arg Leu  
 930 935 940

Ser Leu Tyr Gln Ala Met Arg Gln Lys Leu Leu Gly Pro Arg Val Ala  
 945 950 955 960

Leu Ala Leu Leu Glu Ala Gln Ala Ala Thr Gly Thr Ile Met Asp Pro  
 965 970 975

His Ser Pro Glu Ser Leu Ser Val Asp Glu Ala Val Arg Arg Gly Val  
 980 985 990

Val Gly Pro Glu Leu Tyr Gly Arg Leu Lys Arg Ala Glu Gly Ala Ile  
 995 1000 1005

Ala Gly Phe Arg Asp Pro Phe Ser Gly Lys Gln Val Ser Val Phe  
 1010 1015 1020

Gln Ala Met Lys Lys Gly Leu Ile Pro Trp Glu Gln Ala Ala Arg  
 1025 1030 1035

Leu Leu Glu Ala Gln Val Ala Thr Gly Gly Ile Ile Asp Pro Thr  
 1040 1045 1050

Ser His His His Leu Pro Met Pro Val Ala Ile Gln Arg Gly Tyr  
 1055 1060 1065

Val Asp Gln Glu Met Glu Thr Ala Leu Ser Ser Ser Ser Glu Thr  
 1070 1075 1080

Phe Pro Thr Pro Asp Gly Gln Gly Arg Thr Ser Tyr Ala Gln Leu  
 1085 1090 1095

Leu Glu Glu Cys Pro Arg Asp Glu Thr Ser Gly Leu His Leu Leu  
 1100 1105 1110

Pro Leu Pro Glu Ser Ala Pro Ala Leu Pro Thr Glu Glu Gln Val  
 1115 1120 1125

Gln Arg Ser Leu Gln Ala Val Pro Gly Ala Lys Asp Gly Thr Ser  
 1130 1135 1140

Leu Trp Asp Leu Leu Ser Ser Cys His Phe Thr Glu Glu Gln Arg  
 1145 1150 1155

Arg Gly Leu Leu Glu Asp Val Gln Glu Gly Arg Thr Thr Val Pro  
 1160 1165 1170

Gln Leu Leu Ala Ser Val Gln Arg Trp Val Gln Glu Thr Lys Leu  
 1175 1180 1185

Leu	Ala	Gln	Ala	Arg	Val	Met	Val	Pro	Gly	Pro	Arg	Gly	Glu	Val
	1190					1195					1200			
Pro	Ala	Val	Trp	Leu	Leu	Asp	Ala	Gly	Ile	Ile	Thr	Gln	Glu	Thr
	1205					1210					1215			
Leu	Glu	Ala	Leu	Ala	Gln	Gly	Thr	Gln	Ser	Pro	Ala	Gln	Val	Ala
	1220					1225					1230			
Glu	Gln	Pro	Ala	Val	Lys	Ala	Cys	Leu	Trp	Gly	Thr	Gly	Cys	Val
	1235					1240					1245			
Ala	Gly	Val	Leu	Leu	Gln	Pro	Ser	Gly	Ala	Lys	Ala	Ser	Ile	Ala
	1250					1255					1260			
Gln	Ala	Val	Arg	Asp	Gly	Leu	Leu	Pro	Thr	Gly	Leu	Gly	Gln	Arg
	1265					1270					1275			
Leu	Leu	Glu	Ala	Gln	Val	Ala	Ser	Gly	Phe	Leu	Val	Asp	Pro	Leu
	1280					1285					1290			
Asn	Asn	Gln	Arg	Leu	Ser	Val	Glu	Asp	Ala	Val	Lys	Val	Gly	Leu
	1295					1300					1305			
Val	Gly	Arg	Glu	Leu	Ser	Glu	Gln	Leu	Gly	Gln	Ala	Glu	Arg	Ala
	1310					1315					1320			
Ala	Ala	Gly	Tyr	Pro	Asp	Pro	Tyr	Ser	Arg	Ala	Ser	Leu	Ser	Leu
	1325					1330					1335			
Trp	Gln	Ala	Met	Glu	Lys	Gly	Leu	Val	Pro	Gln	Asn	Glu	Gly	Leu
	1340					1345					1350			
Pro	Leu	Leu	Gln	Val	Gln	Leu	Ala	Thr	Gly	Gly	Val	Val	Asp	Pro
	1355					1360					1365			
Val	His	Gly	Val	His	Leu	Pro	Gln	Ala	Ala	Ala	Cys	Arg	Leu	Gly
	1370					1375					1380			
Leu	Leu	Asp	Thr	Gln	Thr	Ser	Gln	Val	Leu	Thr	Ala	Val	Asp	Lys
	1385					1390					1395			
Asp	Asn	Lys	Phe	Phe	Phe	Asp	Pro	Ser	Ala	Arg	Asp	Gln	Val	Thr
	1400					1405					1410			
Tyr	Gln	Gln	Leu	Arg	Glu	Arg	Cys	Val	Cys	Asp	Ser	Glu	Thr	Gly
	1415					1420					1425			
Leu	Leu	Leu	Leu	Pro	Leu	Pro	Ser	Asp	Thr	Val	Leu	Glu	Val	Asp
	1430					1435					1440			

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Asp	His	Thr	Ala	Val	Ala	Leu	Arg	Ala	Met	Lys	Val	Pro	Val	Ser
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Thr	Gly	Arg	Phe	Lys	Gly	Cys	Ser	Val	Ser	Leu	Trp	Asp	Leu	Leu
	1460					1465					1470			
Leu	Ser	Glu	Tyr	Val	Gly	Ala	Asp	Lys	Arg	Arg	Glu	Leu	Val	Ala
	1475					1480					1485			
Leu	Cys	Arg	Ser	Gly	Arg	Ala	Ala	Ala	Leu	Arg	Gln	Val	Val	Ser
	1490					1495					1500			
Ala	Val	Thr	Ala	Leu	Val	Glu	Ala	Ala	Glu	Arg	Gln	Pro	Leu	Gln
	1505					1510					1515			
Ala	Thr	Phe	Arg	Gly	Leu	Arg	Lys	Gln	Val	Ser	Ala	Arg	Asp	Leu
	1520					1525					1530			
Phe	Arg	Ala	Gln	Leu	Ile	Ser	Arg	Lys	Thr	Leu	Asp	Glu	Leu	Ser
	1535					1540					1545			
Gln	Gly	Thr	Thr	Thr	Val	Lys	Glu	Val	Ala	Glu	Met	Asp	Ser	Val
	1550					1555					1560			
Lys	Arg	Ser	Leu	Glu	Gly	Gly	Asn	Phe	Ile	Ala	Gly	Val	Leu	Ile
	1565					1570					1575			
Gln	Gly	Thr	Gln	Glu	Arg	Met	Ser	Ile	Pro	Glu	Ala	Leu	Arg	Arg
	1580					1585					1590			
His	Ile	Leu	Arg	Pro	Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala	Gln
	1595					1600					1605			
Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro	Ala	Glu	Asn	Arg	Lys	Leu
	1610					1615					1620			
Thr	Val	Glu	Glu	Ala	Phe	Lys	Ala	Gly	Met	Phe	Gly	Lys	Glu	Thr
	1625					1630					1635			
Tyr	Val	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Thr
	1640					1645					1650			
Asp	Pro	Tyr	Thr	Gly	Gln	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln
	1655					1660					1665			
Lys	Asp	Leu	Ile	Val	Arg	Glu	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala
	1670					1675					1680			
Gln	Ile	Ala	Thr	Gly	Gly	Ile	Ile	Asp	Pro	Val	His	Ser	His	Arg
	1685					1690					1695			

Val	Pro	Val	Asp	Val	Ala	Tyr	Arg	Cys	Gly	Tyr	Phe	Asp	Glu	Glu
	1700					1705					1710			
Met	Asn	Arg	Ile	Leu	Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe
	1715					1720					1725			
Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu
	1730					1735					1740			
Glu	Arg	Cys	Val	Glu	Asp	Pro	Glu	Thr	Gly	Leu	Tyr	Leu	Leu	Gln
	1745					1750					1755			
Ile	Ile	Lys	Lys	Gly	Glu	Asn	Tyr	Val	Tyr	Ile	Asn	Glu	Ala	Thr
	1760					1765					1770			
Arg	His	Val	Leu	Gln	Ser	Arg	Thr	Ala	Lys	Met	Arg	Val	Gly	Arg
	1775					1780					1785			
Phe	Ala	Asp	Gln	Val	Val	Ser	Phe	Trp	Asp	Leu	Leu	Ser	Ser	Pro
	1790					1795					1800			
Tyr	Phe	Thr	Glu	Asp	Arg	Lys	Arg	Glu	Leu	Ile	Gln	Glu	Tyr	Gly
	1805					1810					1815			
Ala	Gln	Ser	Gly	Gly	Leu	Glu	Lys	Leu	Leu	Glu	Ile	Ile	Thr	Thr
	1820					1825					1830			
Thr	Ile	Glu	Glu	Thr	Glu	Thr	Gln	Asn	Gln	Gly	Ile	Lys	Val	Ala
	1835					1840					1845			
Ala	Ile	Arg	Gly	Glu	Val	Thr	Ala	Ala	Asp	Leu	Phe	Asn	Ser	Arg
	1850					1855					1860			
Val	Ile	Asp	Gln	Lys	Thr	Leu	His	Thr	Leu	Arg	Val	Gly	Arg	Thr
	1865					1870					1875			
Gly	Gly	Gln	Ala	Leu	Ser	Thr	Leu	Glu	Cys	Val	Lys	Pro	Tyr	Leu
	1880					1885					1890			
Glu	Gly	Ser	Asp	Cys	Ile	Ala	Gly	Val	Thr	Val	Pro	Ser	Thr	Arg
	1895					1900					1905			
Glu	Val	Met	Ser	Leu	His	Glu	Ala	Ser	Arg	Lys	Glu	Leu	Ile	Pro
	1910					1915					1920			
Ala	Ala	Phe	Ala	Thr	Trp	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly
	1925					1930					1935			
Phe	Leu	Leu	Asp	Pro	Cys	Thr	Arg	Gln	Lys	Leu	Ser	Val	Asp	Glu
	1940					1945					1950			
Ala	Val	Asp	Val	Gly	Leu	Val	Asn	Glu	Glu	Leu	Arg	Glu	Arg	Leu

1955

1960

1965

Leu	Lys 1970	Ala	Glu	Arg	Ala	Ala 1975	Thr	Gly	Tyr	Arg	Asp 1980	Pro	Ala	Thr
Gly	Asp 1985	Thr	Ile	Pro	Leu	Phe 1990	Gln	Ala	Met	Gln	Lys 1995	Gln	Leu	Ile
Glu	Lys 2000	Ala	Glu	Ala	Leu	Arg 2005	Leu	Leu	Glu	Val	Gln 2010	Val	Ala	Thr
Gly	Gly 2015	Val	Ile	Asp	Pro	Gln 2020	His	His	His	Arg	Leu 2025	Pro	Leu	Glu
Thr	Ala 2030	Tyr	Arg	Arg	Gly	Cys 2035	Leu	His	Lys	Asp	Ile 2040	Tyr	Ala	Leu
Ile	Ser 2045	Asp	Gln	Lys	His	Met 2050	Arg	Lys	Arg	Phe	Val 2055	Asp	Pro	Asn
Thr	Gln 2060	Glu	Lys	Val	Ser	Tyr 2065	Arg	Glu	Leu	Gln	Glu 2070	Arg	Cys	Arg
Pro	Gln 2075	Glu	Asp	Thr	Gly	Trp 2080	Val	Leu	Phe	Pro	Val 2085	Asn	Lys	Ala
Ala	Arg 2090	Asp	Ser	Glu	His	Ile 2095	Asp	Asp	Glu	Thr	Arg 2100	Arg	Ala	Leu
Glu	Ala 2105	Glu	Gln	Val	Glu	Ile 2110	Thr	Val	Gly	Arg	Phe 2115	Arg	Gly	Gln
Lys	Pro 2120	Thr	Leu	Trp	Ala	Leu 2125	Leu	Asn	Ser	Glu	Tyr 2130	Val	Thr	Glu
Glu	Lys 2135	Lys	Leu	Gln	Leu	Val 2140	Arg	Met	Tyr	Arg	Thr 2145	His	Thr	Arg
Arg	Ala 2150	Leu	Gln	Thr	Val	Ala 2155	Gln	Leu	Ile	Leu	Glu 2160	Leu	Ile	Glu
Lys	Gln 2165	Glu	Thr	Ser	Asn	Lys 2170	His	Leu	Trp	Phe	Gln 2175	Gly	Ile	Arg
Arg	Gln 2180	Ile	Thr	Ala	Ser	Glu 2185	Leu	Leu	Ser	Ser	Ala 2190	Ile	Ile	Thr
Glu	Glu 2195	Met	Leu	Gln	Asp	Leu 2200	Glu	Thr	Gly	Arg	Ser 2205	Thr	Thr	Gln
Glu	Leu 2210	Met	Glu	Asp	Asp	Arg 2215	Val	Lys	Arg	Tyr	Leu 2220	Glu	Gly	Thr

Ser Cys Ile Ala Gly Val Leu Val Pro Ala Lys Asp Gln Pro Gly  
 2225 2230 2235  
 Arg Gln Glu Lys Met Ser Ile Tyr Gln Ala Met Trp Lys Gly Val  
 2240 2245 2250  
 Leu Arg Pro Gly Thr Ala Leu Val Leu Leu Glu Ala Gln Ala Ala  
 2255 2260 2265  
 Thr Gly Phe Val Ile Asp Pro Val Arg Asn Leu Arg Leu Ser Val  
 2270 2275 2280  
 Glu Glu Pro Val Pro Ala Gly Val Val Gly Ser Glu Ile Gln Glu  
 2285 2290 2295  
 Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Thr Asp Pro  
 2300 2305 2310  
 Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln Ala Met Gln Lys Asp  
 2315 2320 2325  
 Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu Glu Ala Gln Ile  
 2330 2335 2340  
 Ala Thr Gly Gly Val Ile Asp Pro Val His Ser His Arg Val Pro  
 2345 2350 2355  
 Val Asp Val Ala Tyr Arg Arg Gly Tyr Phe Asp Glu Glu Met Asn  
 2360 2365 2370  
 Arg Val Leu Ala Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp  
 2375 2380 2385  
 Pro Asn Thr His Glu Asn Leu Thr Tyr Val Gln Leu Leu Arg Arg  
 2390 2395 2400  
 Cys Val Pro Asp Pro Asp Thr Gly Leu Tyr Met Leu Gln Leu Ala  
 2405 2410 2415  
 Gly Arg Gly Ser Ala Val His Gln Leu Ser Glu Glu Leu Arg Cys  
 2420 2425 2430  
 Ala Leu Arg Asp Ala Arg Val Thr Pro Gly Ser Gly Ala Leu Gln  
 2435 2440 2445  
 Gly Gln Ser Val Ser Val Trp Glu Leu Leu Phe Tyr Arg Glu Val  
 2450 2455 2460  
 Ser Glu Asp Arg Arg Gln Asp Leu Leu Ser Arg Tyr Arg Ala Gly  
 2465 2470 2475

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Thr	Leu	Thr	Val	Glu	Glu	Leu	Gly	Ala	Thr	Leu	Thr	Ser	Leu	Leu
	2480					2485					2490			
Ala	Gln	Ala	Gln	Ala	Gln	Ala	Arg	Ala	Glu	Ala	Glu	Ala	Gly	Ser
	2495					2500					2505			
Pro	Arg	Pro	Asp	Pro	Arg	Glu	Ala	Leu	Arg	Ala	Ala	Thr	Met	Glu
	2510					2515					2520			
Val	Lys	Val	Gly	Arg	Leu	Arg	Gly	Arg	Ala	Val	Pro	Val	Trp	Asp
	2525					2530					2535			
Val	Leu	Ala	Ser	Gly	Tyr	Val	Ser	Arg	Ala	Ala	Arg	Glu	Glu	Leu
	2540					2545					2550			
Leu	Ala	Glu	Phe	Gly	Ser	Gly	Thr	Leu	Asp	Leu	Pro	Ala	Leu	Thr
	2555					2560					2565			
Arg	Arg	Leu	Thr	Ala	Ile	Ile	Glu	Glu	Ala	Glu	Glu	Ala	Pro	Gly
	2570					2575					2580			
Ala	Arg	Pro	Gln	Leu	Gln	Asp	Ala	Arg	Arg	Gly	Pro	Arg	Glu	Pro
	2585					2590					2595			
Gly	Pro	Ala	Gly	Arg	Gly	Asp	Gly	Asp	Ser	Gly	Arg	Ser	Gln	Arg
	2600					2605					2610			
Glu	Gly	Gln	Gly	Glu	Gly	Glu	Thr	Gln	Glu	Ala	Ala	Ala	Ala	Ala
	2615					2620					2625			
Ala	Ala	Ala	Arg	Arg	Gln	Glu	Gln	Thr	Leu	Arg	Asp	Ala	Thr	Met
	2630					2635					2640			
Glu	Val	Gln	Arg	Gly	Gln	Phe	Gln	Gly	Arg	Pro	Val	Ser	Val	Trp
	2645					2650					2655			
Asp	Val	Leu	Phe	Ser	Ser	Tyr	Leu	Ser	Glu	Ala	Arg	Arg	Asp	Glu
	2660					2665					2670			
Leu	Leu	Ala	Gln	His	Ala	Ala	Gly	Ala	Leu	Gly	Leu	Pro	Asp	Leu
	2675					2680					2685			
Val	Ala	Val	Leu	Thr	Arg	Val	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu
	2690					2695					2700			
Ser	Lys	Val	Ser	Phe	Arg	Gly	Leu	Arg	Arg	Gln	Val	Ser	Ala	Ser
	2705					2710					2715			
Glu	Leu	His	Thr	Ser	Gly	Ile	Leu	Gly	Pro	Glu	Thr	Leu	Arg	Asp
	2720					2725					2730			

Leu Ala Gln Gly Thr Lys Thr Leu Gln Glu Val Thr Glu Met Asp  
 2735 2740 2745  
  
 Ser Val Lys Arg Tyr Leu Glu Gly Thr Ser Cys Ile Ala Gly Val  
 2750 2755 2760  
  
 Leu Val Pro Ala Lys Asp Gln Pro Gly Arg Gln Glu Lys Met Ser  
 2765 2770 2775  
  
 Ile Tyr Gln Ala Met Trp Lys Gly Val Leu Arg Pro Gly Thr Ala  
 2780 2785 2790  
  
 Leu Val Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Val Ile Asp  
 2795 2800 2805  
  
 Pro Val Arg Asn Leu Arg Leu Ser Val Glu Glu Ala Val Ala Ala  
 2810 2815 2820  
  
 Gly Val Val Gly Gly Glu Ile Gln Glu Lys Leu Leu Ser Ala Glu  
 2825 2830 2835  
  
 Arg Ala Val Thr Gly Tyr Thr Asp Pro Tyr Thr Gly Gln Gln Ile  
 2840 2845 2850  
  
 Ser Leu Phe Gln Ala Met Gln Lys Asp Leu Ile Val Arg Glu His  
 2855 2860 2865  
  
 Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly Val Ile  
 2870 2875 2880  
  
 Asp Pro Val His Ser His Arg Val Pro Val Asp Val Ala Tyr Arg  
 2885 2890 2895  
  
 Arg Gly Tyr Phe Asp Glu Glu Met Asn Arg Val Leu Ala Asp Pro  
 2900 2905 2910  
  
 Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr His Glu Asn  
 2915 2920 2925  
  
 Leu Thr Tyr Val Gln Leu Leu Arg Arg Cys Val Pro Asp Pro Asp  
 2930 2935 2940  
  
 Thr Gly Leu Tyr Met Leu Gln Leu Ala Gly Arg Gly Ser Ala Val  
 2945 2950 2955  
  
 His Gln Leu Ser Glu Glu Leu Arg Cys Ala Leu Arg Asp Ala Arg  
 2960 2965 2970  
  
 Val Thr Pro Gly Ser Gly Ala Leu Gln Gly Gln Ser Val Ser Val  
 2975 2980 2985  
  
 Trp Glu Leu Leu Phe Tyr Arg Glu Val Ser Glu Asp Arg Arg Gln  
 2990 2995



2990

2995

3000

Asp Leu Leu Ser Arg Tyr Arg Ala Gly Thr Leu Thr Val Glu Glu  
3005 3010 3015

Leu Gly Ala Thr Leu Thr Ser Leu Leu Ala Gln Ala Gln Ala Gln  
3020 3025 3030

Ala Arg Ala Glu Ala Glu Ala Gly Ser Pro Arg Pro Asp Pro Arg  
3035 3040 3045

Glu Ala Leu Arg Ala Ala Thr Met Glu Val Lys Val Gly Arg Leu  
3050 3055 3060

Arg Gly Arg Ala Val Pro Val Trp Asp Val Leu Ala Ser Gly Tyr  
3065 3070 3075

Val Ser Gly Ala Ala Arg Glu Glu Leu Leu Ala Glu Phe Gly Ser  
3080 3085 3090

Gly Thr Leu Asp Leu Pro Ala Leu Thr Arg Arg Leu Thr Ala Ile  
3095 3100 3105

Ile Glu Glu Ala Glu Glu Ala Pro Gly Ala Arg Pro Gln Leu Gln  
3110 3115 3120

Asp Ala Trp Arg Gly Pro Arg Glu Pro Gly Pro Ala Gly Arg Gly  
3125 3130 3135

Asp Gly Asp Ser Gly Arg Ser Gln Arg Glu Gly Gln Gly Glu Gly  
3140 3145 3150

Glu Thr Gln Glu Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Gln  
3155 3160 3165

Glu Gln Thr Leu Arg Asp Ala Thr Met Glu Val Gln Arg Gly Gln  
3170 3175 3180

Phe Gln Gly Arg Pro Val Ser Val Trp Asp Val Leu Phe Ser Ser  
3185 3190 3195

Tyr Leu Ser Glu Ala Arg Arg Asp Glu Leu Leu Ala Gln His Ala  
3200 3205 3210

Ala Gly Ala Leu Gly Leu Pro Asp Leu Val Ala Val Leu Thr Arg  
3215 3220 3225

Val Ile Glu Glu Thr Glu Glu Arg Leu Ser Lys Val Ser Phe Arg  
3230 3235 3240

Gly Leu Arg Arg Gln Val Ser Ala Ser Glu Leu His Thr Ser Gly  
3245 3250 3255

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Ile	Leu	Gly	Pro	Glu	Thr	Leu	Arg	Asp	Leu	Ala	Gln	Gly	Thr	Lys
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Thr	Leu	Gln	Glu	Val	Thr	Glu	Met	Asp	Ser	Val	Lys	Arg	Tyr	Leu
	3275					3280					3285			
Glu	Gly	Thr	Ser	Cys	Ile	Ala	Gly	Val	Leu	Val	Pro	Ala	Lys	Asp
	3290					3295					3300			
Gln	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile	Tyr	Gln	Ala	Met	Trp
	3305					3310					3315			
Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala
	3320					3325					3330			
Gln	Ala	Ala	Thr	Gly	Phe	Val	Ile	Asp	Pro	Val	Arg	Asn	Leu	Arg
	3335					3340					3345			
Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly	Val	Val	Gly	Gly	Glu
	3350					3355					3360			
Ile	Gln	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr
	3365					3370					3375			
Thr	Asp	Pro	Tyr	Thr	Gly	Gln	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met
	3380					3385					3390			
Gln	Lys	Asp	Leu	Ile	Val	Arg	Glu	His	Gly	Ile	Arg	Leu	Leu	Glu
	3395					3400					3405			
Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp	Pro	Val	His	Ser	His
	3410					3415					3420			
Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Arg	Arg	Gly	Tyr	Phe	Asp	Glu
	3425					3430					3435			
Glu	Met	Asn	Arg	Val	Leu	Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly
	3440					3445					3450			
Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Val	Gln	Leu
	3455					3460					3465			
Leu	Arg	Arg	Cys	Val	Pro	Asp	Pro	Asp	Thr	Gly	Leu	Tyr	Met	Leu
	3470					3475					3480			
Gln	Leu	Ala	Gly	Arg	Gly	Ser	Ala	Val	His	Gln	Leu	Ser	Glu	Glu
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Leu	Arg	Cys	Ala	Leu	Arg	Asp	Ala	Arg	Val	Thr	Pro	Gly	Ser	Gly
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Ala Leu Gln Gly Gln Ser Val Ser Val Trp Glu Leu Leu Phe Tyr  
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Arg Glu Val Ser Glu Asp Arg Arg Gln Asp Leu Leu Ser Arg Tyr  
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Arg Ala Gly Thr Leu Thr Val Glu Glu Leu Gly Ala Thr Leu Thr  
3545 3550 3555

Ser Leu Leu Ala Gln Ala Gln Ala Gln Ala Arg Ala Glu Ala Glu  
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Ala Gly Ser Pro Arg Pro Asp Pro Arg Glu Ala Leu Arg Ala Ala  
3575 3580 3585

Thr Met Glu Val Lys Val Gly Arg Leu Arg Gly Arg Ala Val Pro  
3590 3595 3600

Val Trp Asp Val Leu Ala Ser Gly Tyr Val Ser Gly Ala Ala Arg  
3605 3610 3615

Glu Glu Leu Leu Ala Glu Phe Gly Ser Gly Thr Leu Asp Leu Pro  
3620 3625 3630

Ala Leu Thr Arg Arg Leu Thr Ala Ile Ile Glu Glu Ala Glu Glu  
3635 3640 3645

Ala Pro Gly Ala Arg Pro Gln Leu Gln Asp Ala Trp Arg Gly Pro  
3650 3655 3660

Arg Glu Pro Gly Pro Ala Gly Arg Gly Asp Gly Asp Ser Gly Arg  
3665 3670 3675

Ser Gln Arg Glu Gly Gln Gly Glu Gly Glu Thr Gln Glu Ala Ala  
3680 3685 3690

Ala Ala Ala Ala Ala Arg Arg Gln Glu Gln Thr Leu Arg Asp  
3695 3700 3705

Ala Thr Met Glu Val Gln Arg Gly Gln Phe Gln Gly Arg Pro Val  
3710 3715 3720

Ser Val Trp Asp Val Leu Phe Ser Ser Tyr Leu Ser Glu Ala Arg  
3725 3730 3735

Arg Asp Glu Leu Leu Ala Gln His Ala Ala Gly Ala Leu Gly Leu  
3740 3745 3750

Pro Asp Leu Val Ala Val Leu Thr Arg Val Ile Glu Glu Thr Glu  
3755 3760 3765

Glu	Arg	Leu	Ser	Lys	Val	Ser	Phe	Arg	Gly	Leu	Arg	Arg	Gln	Val
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Ser	Ala	Ser	Glu	Leu	His	Thr	Ser	Gly	Ile	Leu	Gly	Pro	Glu	Thr
	3785					3790					3795			
Leu	Arg	Asp	Leu	Ala	Gln	Gly	Thr	Lys	Thr	Leu	Gln	Glu	Val	Thr
	3800					3805					3810			
Glu	Met	Asp	Ser	Val	Lys	Arg	Tyr	Leu	Glu	Gly	Thr	Ser	Cys	Ile
	3815					3820					3825			
Ala	Gly	Val	Leu	Val	Pro	Ala	Lys	Asp	Gln	Pro	Gly	Arg	Gln	Glu
	3830					3835					3840			
Lys	Met	Ser	Ile	Tyr	Gln	Ala	Met	Trp	Lys	Gly	Val	Leu	Arg	Pro
	3845					3850					3855			
Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe
	3860					3865					3870			
Val	Ile	Asp	Pro	Val	Arg	Asn	Leu	Arg	Leu	Ser	Val	Glu	Glu	Ala
	3875					3880					3885			
Val	Ala	Ala	Gly	Val	Val	Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu	Leu
	3890					3895					3900			
Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Thr	Gly
	3905					3910					3915			
Gln	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln	Lys	Asp	Leu	Ile	Val
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Arg	Glu	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly
	3935					3940					3945			
Gly	Val	Ile	Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val
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Ala	Tyr	Arg	Arg	Gly	Tyr	Phe	Asp	Glu	Glu	Met	Asn	Arg	Val	Leu
	3965					3970					3975			
Ala	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr
	3980					3985					3990			
His	Glu	Asn	Leu	Thr	Tyr	Val	Gln	Leu	Leu	Arg	Arg	Cys	Val	Pro
	3995					4000					4005			
Asp	Pro	Asp	Thr	Gly	Leu	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Arg	Gly
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Ser	Ala	Val	His	Gln	Leu	Ser	Glu	Glu	Leu	Arg	Cys	Ala	Leu	Arg

4025

4030

4035

Asp Ala Arg Val Thr Pro Gly Ser Gly Ala Leu Gln Gly Gln Ser  
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Val Ser Val Trp Glu Leu Leu Phe Tyr Arg Glu Val Ser Glu Asp  
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Arg Arg Gln Asp Leu Leu Ser Arg Tyr Arg Ala Ser Thr Leu Thr  
4070 4075 4080

Val Glu Glu Leu Gly Ala Thr Leu Thr Ser Leu Leu Ala Gln Ala  
4085 4090 4095

Gln Ala Gln Ala Arg Ala Glu Ala Glu Ala Gly Ser Pro Arg Pro  
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Asp Pro Arg Glu Ala Leu Arg Ala Ala Thr Met Glu Val Lys Val  
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Gly Arg Leu Arg Gly Arg Ala Val Pro Val Trp Asp Val Leu Ala  
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Ser Gly Tyr Val Ser Arg Ala Ala Arg Glu Glu Leu Leu Ala Glu  
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Phe Gly Ser Gly Thr Leu Asp Leu Pro Ala Leu Thr Arg Arg Leu  
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Thr Ala Ile Ile Glu Glu Ala Glu Glu Ala Pro Gly Ala Arg Pro  
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Gln Leu Gln Asp Ala Trp Arg Gly Pro Arg Glu Pro Gly Pro Ala  
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Gly Glu Gly Glu Thr Gln Glu Ala Ala Ala Ala Thr Ala Ala Ala  
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Arg Arg Gln Glu Gln Thr Leu Arg Asp Ala Thr Met Glu Val Gln  
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Arg Gly Gln Phe Gln Gly Arg Pro Val Ser Val Trp Asp Val Leu  
4250 4255 4260

Phe Ser Ser Tyr Leu Ser Glu Ala Arg Arg Asp Glu Leu Leu Ala  
4265 4270 4275

Gln His Ala Ala Gly Ala Leu Gly Leu Pro Asp Leu Val Ala Val  
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Leu Thr Arg Val Ile Glu Glu Thr Glu Glu Arg Leu Ser Lys Val  
 4295 4300 4305  
 Ser Phe Arg Gly Leu Arg Arg Gln Val Ser Ala Ser Glu Leu His  
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 Thr Ser Gly Ile Leu Gly Pro Glu Thr Leu Arg Asp Leu Ala Gln  
 4325 4330 4335  
 Gly Thr Lys Thr Leu Gln Glu Val Thr Glu Met Asp Ser Val Lys  
 4340 4345 4350  
 Arg Tyr Leu Glu Gly Thr Ser Cys Ile Ala Gly Val Leu Val Pro  
 4355 4360 4365  
 Ala Lys Asp Gln Pro Gly Arg Gln Glu Lys Met Ser Ile Tyr Gln  
 4370 4375 4380  
 Ala Met Trp Lys Gly Val Leu Arg Pro Gly Thr Ala Leu Val Leu  
 4385 4390 4395  
 Leu Glu Ala Gln Ala Ala Thr Gly Phe Val Ile Asp Pro Val Arg  
 4400 4405 4410  
 Asn Leu Arg Leu Ser Val Glu Glu Ala Val Ala Ala Gly Val Val  
 4415 4420 4425  
 Gly Gly Glu Ile Gln Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
 4430 4435 4440  
 Thr Gly Tyr Thr Asp Pro Tyr Thr Gly Gln Gln Ile Ser Leu Phe  
 4445 4450 4455  
 Gln Ala Met Gln Lys Asp Leu Ile Val Arg Glu His Gly Ile Arg  
 4460 4465 4470  
 Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly Val Ile Asp Pro Val  
 4475 4480 4485  
 His Ser His Arg Val Pro Val Asp Val Ala Tyr Arg Arg Gly Tyr  
 4490 4495 4500  
 Phe Asp Glu Glu Met Asn Arg Val Leu Ala Asp Pro Ser Asp Asp  
 4505 4510 4515  
 Thr Lys Gly Phe Phe Asp Pro Asn Thr His Glu Asn Leu Thr Tyr  
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 Val Gln Leu Leu Arg Arg Cys Val Pro Asp Pro Asp Thr Gly Leu  
 4535 4540 4545

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 Gly Ser Gly Ala Leu Gln Gly Gln Ser Val Ser Val Trp Glu Leu  
 4580 4585 4590  
 Leu Phe Tyr Arg Glu Val Ser Glu Asp Arg Arg Gln Asp Leu Leu  
 4595 4600 4605  
 Ser Arg Tyr Arg Ala Gly Thr Leu Thr Val Glu Glu Leu Gly Ala  
 4610 4615 4620  
 Thr Leu Thr Ser Leu Leu Ala Gln Ala Gln Ala Gln Ala Arg Ala  
 4625 4630 4635  
 Glu Ala Glu Ala Gly Ser Pro Arg Pro Asp Pro Arg Glu Ala Leu  
 4640 4645 4650  
 Arg Ala Ala Thr Met Glu Val Lys Val Gly Arg Leu Arg Gly Arg  
 4655 4660 4665  
 Ala Val Pro Val Trp Asp Val Leu Ala Ser Gly Tyr Val Ser Gly  
 4670 4675 4680  
 Ala Ala Arg Glu Glu Leu Leu Ala Glu Phe Gly Ser Gly Thr Leu  
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 Asp Leu Pro Ala Leu Thr Arg Arg Leu Thr Ala Ile Ile Glu Glu  
 4700 4705 4710  
 Ala Glu Glu Ala Pro Gly Ala Arg Pro Gln Leu Gln Asp Ala Trp  
 4715 4720 4725  
 Arg Gly Pro Arg Glu Pro Gly Pro Ala Gly Arg Gly Asp Gly Asp  
 4730 4735 4740  
 Ser Gly Arg Ser Gln Arg Glu Gly Gln Gly Glu Gly Glu Thr Gln  
 4745 4750 4755  
 Glu Ala Ala Ala Ala Ala Ala Ala Ala Arg Arg Gln Glu Gln Thr  
 4760 4765 4770  
 Leu Arg Asp Ala Thr Met Glu Val Gln Arg Gly Gln Phe Gln Gly  
 4775 4780 4785  
 Arg Pro Val Ser Val Trp Asp Val Leu Phe Ser Ser Tyr Leu Ser  
 4790 4795 4800

Glu Ala Arg Arg Asp Glu Leu Leu Ala Gln His Ala Ala Gly Ala  
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 Leu Gly Leu Pro Asp Leu Val Ala Val Leu Thr Arg Val Ile Glu  
 4820 4825 4830  
 Glu Thr Glu Glu Arg Leu Ser Lys Val Ser Phe Arg Gly Leu Arg  
 4835 4840 4845  
 Arg Gln Val Ser Ala Ser Glu Leu His Thr Ser Gly Ile Leu Gly  
 4850 4855 4860  
 Pro Glu Thr Leu Arg Asp Leu Ala Gln Gly Thr Lys Thr Leu Gln  
 4865 4870 4875  
 Glu Val Thr Glu Met Asp Ser Val Lys Arg Tyr Leu Glu Gly Thr  
 4880 4885 4890  
 Ser Cys Ile Ala Gly Val Leu Val Pro Ala Lys Asp Gln Pro Gly  
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 Arg Gln Glu Lys Met Ser Ile Tyr Gln Ala Met Trp Lys Gly Val  
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 Leu Arg Pro Gly Thr Ala Leu Val Leu Leu Glu Ala Gln Ala Ala  
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 Thr Gly Phe Val Ile Asp Pro Val Arg Asn Leu Arg Leu Ser Val  
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 Glu Glu Ala Val Ala Ala Gly Val Val Gly Gly Glu Ile Gln Glu  
 4955 4960 4965  
 Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Thr Asp Pro  
 4970 4975 4980  
 Tyr Thr Gly Gln Gln Ile Ser Leu Phe Gln Ala Met Gln Lys Asp  
 4985 4990 4995  
 Leu Ile Val Arg Glu His Gly Ile Arg Leu Leu Glu Ala Gln Ile  
 5000 5005 5010  
 Ala Thr Gly Gly Val Ile Asp Pro Val His Ser His Arg Val Pro  
 5015 5020 5025  
 Val Asp Val Ala Tyr Arg Arg Gly Tyr Phe Asp Glu Glu Met Asn  
 5030 5035 5040  
 Arg Val Leu Ala Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp  
 5045 5050 5055  
 Pro Asn Thr His Glu Asn Leu Thr Tyr Leu Gln Leu Leu Gln Arg  
 Seite 764



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5065

5070

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<222> (1134)..(20777)

<400> 135  
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agcccctgag gtcatcaccg tgaggtcttg gacctccaac caaatgggca ctaacagacc 180  
cctgtctctg aaggtgagag ctgggatggg cttcagagct aggtcctcct gatgctaggt 240  
cctcctgatg ctaggttctc ctgatgctgg gtccttcaga tggactgagg aacttatttg 300  
agccccaggg ggggtgggaaa tgtcagggag ctgaatgggt agatgaagcc tggccacccc 360  
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Met  
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aac ggc cag gcc cct cct cat gat gtc gta gtt gcc aat gga act gag 1184  
Asn Gly Gln Ala Pro Pro His Asp Val Val Val Ala Asn Gly Thr Glu  
5 10 15  
aag ttc att gtc cct aaa atc aag aag aac caa ttg gga gcc agc act 1232  
Lys Phe Ile Val Pro Lys Ile Lys Lys Asn Gln Leu Gly Ala Ser Thr  
20 25 30

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att Ile 50	gct Ala	ggg Gly	gta Val	tat Tyr	gtg Val 55	gag Glu	gcc Ala	tcg Ser	ggg Gly	cag Gln 60	acc Thr	cag Gln	agc Ser	atc Ile	tat Tyr 65	1328
gct Ala	gct Ala	ata Ile	aag Lys	cag Gln 70	ggc Gly	ctc Leu	ctg Leu	ccc Pro	act Thr 75	ggg Gly	ctt Leu	gga Gly	ctg Leu	act Thr 80	ttg Leu	1376
ctt Leu	gag Glu	gcc Ala	cag Gln 85	gca Ala	gcc Ala	act Thr	ggg Gly	ggc Gly 90	ctc Leu	gtg Val	gac Asp	ctt Leu	gcc Ala 95	cag Gln	ggc Gly	1424
cag Gln	ctt Leu	ctt Leu 100	cct Pro	gtg Val	tct Ser	gag Glu	gcc Ala 105	cta Leu	agg Arg	cgg Arg	ggt Gly	cta Leu 110	gtg Val	gga Gly	ttg Leu	1472
gag Glu	ctt Leu 115	aag Lys	gag Glu	aaa Lys	tta Leu	ctg Leu 120	gct Ala	gct Ala	gaa Glu	cgt Arg	gca Ala 125	ggt Val	act Thr	ggc Gly	tat Tyr	1520
ccc Pro 130	gac Asp	ccc Pro	tat Tyr	ggg Gly	ggt Gly 135	gaa Glu	aag Lys	ctg Leu	tcc Ser	ctc Leu 140	ttc Phe	cag Gln	gcc Ala	atc Ile	aag Lys 145	1568
aaa Lys	gaa Glu	gtt Val	gta Val	gac Asp 150	agg Arg	acc Thr	ctg Leu	ggg Gly	tgg Trp 155	aga Arg	ttg Leu	cta Leu	gag Glu	gcc Ala 160	cag Gln	1616
cta Leu	gct Ala	act Thr	ggg Gly 165	ggc Gly	ctg Leu	gtg Val	gac Asp	cca Pro 170	acc Thr	cag Gln	ggt Gly	gtg Val 175	caa Gln	gta Val	gcc Ala	1664
cca Pro	gag Glu	cta Leu 180	gcc Ala	tgc Cys	cag Gln	cag Gln	ggc Gly 185	ctt Leu	ttg Leu	gat Asp	aag Lys	gag Glu 190	aca Thr	tgg Trp	ctc Leu	1712
agc Ser 195	ctg Leu	gtg Val	gag Glu	tca Ser	gag Glu	ccc Pro 200	agt Ser	atg Met	ggt Gly	acc Thr	cct Pro 205	ggt Gly	ttt Phe	tct Ser	gac Asp	1760
ccc Pro 210	aac Asn	acg Thr	ctg Leu	gag Glu	cag Gln 215	ctg Leu	cca Pro	tac Tyr	tct Ser	gtg Val 220	ctg Leu	ttg Leu	ggt Gly	agg Arg	tgt Cys 225	1808
gtg Val	caa Gln	gac Asp	ccc Pro	agc Ser 230	tca Ser	ggg Gly	ctg Leu	ccc Pro	cta Leu 235	ttg Leu	ccc Pro	tta Leu	aag Lys	acc Thr 240	act Thr	1856
ttc Phe	cac His	acc Thr	ctg Leu 245	gct Ala	gga Gly	gca Ala	gcc Ala	agt Ser 250	gcg Ala	tca Ser	atg Met	ctg Leu	ctg Leu 255	gag Glu	gcg Ala	1904
gga Gly	gta Val	cta Leu 260	aat Asn	gaa Glu	gag Glu	atg Met	gtc Val 265	cga Arg	gac Asp	ctg Leu	cag Gln	gag Glu 270	ggc Gly	atg Met	ctg Leu	1952
gtg Val	gtg Val 275	tca Ser	gac Asp	gtg Val	ggc Gly	aca Thr 280	cgt Arg	ccc Pro	gag Glu	gtg Val	cga Arg 285	cgt Arg	tat Tyr	ctg Leu	gaa Glu	2000
ggc Gly 290	act Thr	gga Gly	ggg Gly	tta Leu	gcg Ala 295	ggg Gly	gtt Val	gtc Val	ctg Leu	ttg Leu 300	cct Pro	gga Gly	ggt Gly	cac His	aag Lys 305	2048

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gca Ala	cta Leu	caa Gln	ctc Leu 325	tta Leu	gag Glu	gct Ala	cag Gln	gct Ala 330	gcc Ala	acc Thr	cgc Arg	acc Thr	ctt Leu 335	gtg Val	cac His	2144
cca Pro	acc Thr	aca Thr 340	ggc Gly	cag Gln	cgt Arg	ctt Leu	tgg Trp 345	gtg Val	gaa Glu	gag Glu	gca Ala	gtc Val 350	aag Lys	gct Ala	ggc Gly	2192
ctg Leu	gtt Val 355	ggc Gly	cca Pro	gaa Glu	ctt Leu	cat His 360	gag Glu	cag Gln	ctc Leu	ctg Leu	gtt Val 365	gca Ala	gaa Glu	cag Gln	gca Ala	2240
gta Val 370	act Thr	ggg Gly	tat Tyr	tat Tyr	gac Asp 375	ccc Pro	ttt Phe	agc Ser	agc Ser	tcc Ser 380	cga Arg	atc Ile	ccc Pro	gtt Val	ttc Phe 385	2288
cag Gln	gct Ala	atg Met	aag Lys	aag Lys 390	gga Gly	ctt Leu	gtg Val	gac Asp	cag Gln 395	cca Pro	ctg Leu	gct Ala	ctg Leu	cgt Arg 400	ctc Leu	2336
cta Leu	gat Asp	gcc Ala	cag Gln 405	cta Leu	gct Ala	aca Thr	ggt Gly	ggg Gly 410	ctt Leu	ata Ile	tgc Cys	cca Pro	gct Ala 415	cgc Arg	aga Arg	2384
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gag Glu	act Thr 435	cgg Arg	caa Gln	cgt Arg	ctc Leu	tct Ser 440	cag Gln	gca Ala	atg Met	ggc Gly	ttt Phe 445	tca Ser	gat Asp	cct Pro	acc Thr	2480
aca Thr 450	cac His	gat Asp	cgt Arg	ctt Leu	ggc Gly 455	tat Tyr	gaa Glu	cag Gln	ctg Leu 460	ctg Leu	gcc Ala	ctc Leu	tct Ser	gtt Val	act Thr 465	2528
gac Asp	cca Pro	gag Glu	aca Thr	ggg Gly 470	ctt Leu	gcc Ala	ttc Phe	ctg Leu	cct Pro 475	ctc Leu	cct Pro	gga Gly	atg Met	tcc Ser 480	cac His	2576
gca Ala	aat Asn	gag Glu	ccc Pro 485	cag Gln	gga Gly	ccc Pro	aca Thr	ttt Phe 490	att Ile	gat Asp	cac His	tgt Cys	act Thr 495	cga Arg	cag Gln	2624
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agg Arg	cct Pro 515	gtc Val	tcc Ser	ctc Leu	tgg Trp	gaa Glu 520	ctg Leu	ctc Leu	ttt Phe	tct Ser	gag Glu 525	tca Ser	gtg Val	ccc Pro	gtt Val	2720
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gtg Val	gag Glu	gag Glu	ctg Leu	gca Ala 550	gct Ala	gag Glu	ctg Leu	aag Lys	aac Asn 555	att Ile	gtt Val	gag Glu	cag Gln	gct Ala 560	gcc Ala	2816
gca Ala	act Thr	gcc Ala	aaa Lys 565	gtc Val	acc Thr	ttt Phe	gct Ala	ggg Gly 570	ttg Leu	agg Arg	gac Asp	acc Thr	gtg Val 575	aca Thr	cca Pro	2864
gga Gag	gag Ttg	ttg Ttg	aaa Gag	gct Gag	ata Atc	aat Cag	gac Ctg	ttt Gag	cag Cag	2912						

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Gly	Glu	Leu	Leu	Lys	Ala	Glu	Ile	Ile	Asn	Gln	Asp	Leu	Phe	Glu	Gln	
		580					585					590				
ttg	gaa	cgt	gga	cag	acc	tca	gcc	caa	gat	gtg	ggc	agc	ctg	gac	tcc	2960
Leu	Glu	Arg	Gly	Gln	Thr	Ser	Ala	Gln	Asp	Val	Gly	Ser	Leu	Asp	Ser	
	595					600					605					
gtg	cag	agg	tac	ctg	cag	ggc	aca	ggc	agt	att	gca	ggc	ctt	ttg	ctt	3008
Val	Gln	Arg	Tyr	Leu	Gln	Gly	Thr	Gly	Ser	Ile	Ala	Gly	Leu	Leu	Leu	
610					615					620					625	
cct	gac	tcc	cag	gaa	cga	ctc	agt	atc	tat	gag	gcc	cgt	agc	aag	ggg	3056
Pro	Asp	Ser	Gln	Glu	Arg	Leu	Ser	Ile	Tyr	Glu	Ala	Arg	Ser	Lys	Gly	
				630					635					640		
ctc	ctc	agg	cct	ggt	act	gcc	ctg	atc	ttg	ctt	gag	gcc	cag	gct	gcc	3104
Leu	Leu	Arg	Pro	Gly	Thr	Ala	Leu	Ile	Leu	Leu	Glu	Ala	Gln	Ala	Ala	
			645					650					655			
aca	ggc	ttt	atc	att	gac	cca	aaa	gag	aac	aag	aga	tac	tct	gtg	gag	3152
Thr	Gly	Phe	Ile	Ile	Asp	Pro	Lys	Glu	Asn	Lys	Arg	Tyr	Ser	Val	Glu	
		660					665					670				
gag	gca	ctg	agg	gct	ggt	gtc	att	ggg	ccc	gat	gta	tat	gcc	aag	ttg	3200
Glu	Ala	Leu	Arg	Ala	Gly	Val	Ile	Gly	Pro	Asp	Val	Tyr	Ala	Lys	Leu	
	675					680					685					
ctc	tct	gca	gaa	cat	gcc	gtg	act	ggc	tac	acg	gac	ccc	tac	tct	ggg	3248
Leu	Ser	Ala	Glu	His	Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Ser	Gly	
690					695					700					705	
gag	cag	atc	tcc	ctc	ttc	cag	gcc	atg	cag	agg	gac	ctc	att	gtg	aga	3296
Glu	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile	Val	Arg	
				710					715					720		
gac	cac	ggc	att	cgc	ctg	ctg	gag	gcc	cag	atc	gcc	aca	ggt	ggt	gtc	3344
Asp	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	
			725					730					735			
att	gac	ccc	gtg	cac	agc	cac	cgt	gtg	ccc	gtg	gac	gtg	gcc	tac	caa	3392
Ile	Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	
		740					745					750				
cgt	ggc	tac	ttt	gat	cag	att	ctg	aac	tct	atc	ctg	ctg	gac	cct	tct	3440
Arg	Gly	Tyr	Phe	Asp	Gln	Ile	Leu	Asn	Ser	Ile	Leu	Leu	Asp	Pro	Ser	
	755					760					765					
gat	gac	acc	aag	ggc	ttc	ttt	gac	ccc	aac	acg	cat	gaa	aat	ctc	act	3488
Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	
770				775						780					785	
tac	ctg	cag	ctc	ctg	gag	cgc	tgt	gta	cat	gac	tcc	gag	aca	ggc	ctg	3536
Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	His	Asp	Ser	Glu	Thr	Gly	Leu	
				790				795						800		
cac	ctc	ctg	ccc	ctc	agt	agt	aca	cga	ccc	cag	ctg	gtg	gat	agc	tcc	3584
His	Leu	Leu	Pro	Leu	Ser	Ser	Thr	Arg	Pro	Gln	Leu	Val	Asp	Ser	Ser	
			805					810				815				
act	cgg	cag	gcc	ttc	cag	aag	cta	ctg	ctc	tcc	gtg	aaa	tat	gga	cgg	3632
Thr	Arg	Gln	Ala	Phe	Gln	Lys	Leu	Leu	Leu	Ser	Val	Lys	Tyr	Gly	Arg	
		820					825					830				
ttc	cgg	ggg	cag	aga	gtt	tct	gcg	tgg	gag	ctg	gtt	aac	tct	gaa	tat	3680
Phe	Arg	Gly	Gln	Arg	Val	Ser	Ala	Trp	Glu	Leu	Val	Asn	Ser	Glu	Tyr	
	835					840					845					
ttc	aca	gag	gac	cgg	agg	agg	cag	ctc	ctg	caa	cgt	tat	cgg	cag	cgc	3728
Phe	Thr	Glu	Asp	Arg	Arg	Arg	Gln	Leu	Leu	Gln	Arg	Tyr	Arg	Gln	Arg	

850	855	860	865	
aag atc aca ctg gag cag gtc act cag ctg ctg gag aaa gag atg agg	Lys Ile Thr Leu Glu Gln Val Thr Gln Leu Leu Glu Lys Glu Met Arg	3776		
	870	875	880	
agg tgg aca gac atc aca ctg cct gcc cta cag ggc cag gtc act gcc	Arg Trp Thr Asp Ile Thr Leu Pro Ala Leu Gln Gly Gln Val Thr Ala	3824		
	885	890	895	
tac cag ctt cta gag gcc cac atc atc aac cag gag ctc ctg gac cag	Tyr Gln Leu Leu Glu Ala His Ile Ile Asn Gln Glu Leu Leu Asp Gln	3872		
	900	905	910	
gtg ctg aca ggg acg atc agc cca gat gcc ctc ctt cag gtg ggt gat	Val Leu Thr Gly Thr Ile Ser Pro Asp Ala Leu Leu Gln Val Gly Asp	3920		
	915	920	925	
gtt cac agg tac ctt cgg ggc tca ggc act gtg ggt ggt gtg ctg cta	Val His Arg Tyr Leu Arg Gly Ser Gly Thr Val Gly Gly Val Leu Leu	3968		
	930	935	940	945
aag ccc tcc aac cag cga atc agt ctc tac cag gcc atg aag cag aag	Lys Pro Ser Asn Gln Arg Ile Ser Leu Tyr Gln Ala Met Lys Gln Lys	4016		
	950	955	960	
ctg ctg cca cct agt aca gct ttg gcc ttg ctg gag gcc cag gca gcc	Leu Leu Pro Pro Ser Thr Ala Leu Ala Leu Leu Glu Ala Gln Ala Ala	4064		
	965	970	975	
act gga act atc act gac ccc tgc agt atg gag acc ctg tca gta gat	Thr Gly Thr Ile Thr Asp Pro Cys Ser Met Glu Thr Leu Ser Val Asp	4112		
	980	985	990	
gag gcc gtg tgc cgg gga gtt gtg gga gca gaa gta tat ggc aag ttg	Glu Ala Val Cys Arg Gly Val Val Gly Ala Glu Val Tyr Gly Lys Leu	4160		
	995	1000	1005	
aag cga gca gaa cat tct atc act ggc tac aga gac ccc ttt tct	Lys Arg Ala Glu His Ser Ile Thr Gly Tyr Arg Asp Pro Phe Ser	4205		
	1010	1015	1020	
gga aaa aag gtg tcc ctg ttc agg gcc atg aag aag ggc ctc gtc	Gly Lys Lys Val Ser Leu Phe Arg Ala Met Lys Lys Gly Leu Val	4250		
	1025	1030	1035	
ccc gtg gag cag gcg acc cgc cta cta gag gca cag gtg tcc aca	Pro Val Glu Gln Ala Thr Arg Leu Leu Glu Ala Gln Val Ser Thr	4295		
	1040	1045	1050	
gga ggg gtc gtt gat ccc aca acc cac ctc cac ctc ccc atg cct	Gly Gly Val Val Asp Pro Thr Thr His Leu His Leu Pro Met Pro	4340		
	1055	1060	1065	
gtg gca gtc cag cgt ggc tgc att gat cga gag atg gag gcg gcc	Val Ala Val Gln Arg Gly Cys Ile Asp Arg Glu Met Glu Ala Ala	4385		
	1070	1075	1080	
ttg tcc aga tct cct gag acc ttt ccc aca ccc gat ggc cgg ggg	Leu Ser Arg Ser Pro Glu Thr Phe Pro Thr Pro Asp Gly Arg Gly	4430		
	1085	1090	1095	
cac acc agc tat gcc cag ctt ctg gaa cac tgt ctc cag gac aaa	His Thr Ser Tyr Ala Gln Leu Leu Glu His Cys Leu Gln Asp Lys	4475		
	1100	1105	1110	
gcc tct ggg ctt cac ctc ctg ccc ctg aca gaa gat gcc ccc aac	Ala Ser Gly Leu His Leu Leu Pro Leu Thr Glu Asp Ala Pro Asn	4520		
	1115	1120	1125	

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gtc Val 1130	ccc Pro	act Thr	gac Asp	aca Thr	cag Gln 1135	atc Ile	cag Gln	gag Glu	acc Thr	ctg Leu 1140	caa Gln	gca Ala	tca Ser	gct Ala	4565
ggc Gly 1145	act Thr	gaa Glu	gac Asp	ggt Gly	ttg Leu 1150	tcg Ser	ctc Leu	tgg Trp	gac Asp	ttg Leu 1155	ctc Leu	acc Thr	tct Ser	tgc Cys	4610
cac His 1160	ttt Phe	acc Thr	gag Glu	gaa Glu	cag Gln 1165	cgc Arg	cgc Arg	ggc Gly	tac Tyr	ctc Leu 1170	gag Glu	gat Asp	gtg Val	aag Lys	4655
gtt Val 1175	ggg Gly	aag Lys	att Ile	tct Ser	gtg Val 1180	cca Pro	cag Gln	cta Leu	cag Gln	aac Asn 1185	act Thr	gtg Val	cgc Arg	agc Ser	4700
tgg Trp 1190	gtg Val	cac His	tca Ser	gcg Ala	aaa Lys 1195	ctc Leu	ctg Leu	gcc Ala	cgg Arg	gcc Ala 1200	cgc Arg	atc Ile	act Thr	gtg Val	4745
cca Pro 1205	ggc Gly	cca Pro	cgg Arg	ggc Gly	gag Glu 1210	gtc Val	cct Pro	gcc Ala	act Thr	tgg Trp 1215	cta Leu	cga Arg	gat Asp	gct Ala	4790
ggt Gly 1220	att Ile	atc Ile	acc Thr	caa Gln	gag Glu 1225	acg Thr	ctg Leu	gaa Glu	gca Ala	ctg Leu 1230	gca Ala	cag Gln	ggc Gly	atg Met	4835
cag Gln 1235	tct Ser	ccc Pro	gat Asp	gag Glu	gta Val 1240	gcc Ala	aaa Lys	cag Gln	cct Pro	acg Thr 1245	gtg Val	aag Lys	gtc Val	tgc Cys	4880
ctc Leu 1250	tgg Trp	ggt Gly	acg Thr	ggc Gly	tgt Cys 1255	gtg Val	gcc Ala	ggg Gly	gtg Val	ctg Leu 1260	ctc Leu	cag Gln	ccc Pro	tcg Ser	4925
ggg Gly 1265	acc Thr	aag Lys	ttg Leu	agc Ser	att Ile 1270	gcc Ala	cag Gln	gct Ala	gta Val	aga Arg 1275	gat Asp	ggc Gly	ctc Leu	ctg Leu	4970
ccc Pro 1280	aca Thr	ggt Gly	ctg Leu	ggc Gly	cag Gln 1285	cag Gln	ctg Leu	ctg Leu	gag Glu	gcc Ala 1290	cag Gln	gtg Val	gca Ala	tct Ser	5015
ggc Gly 1295	ttc Phe	ctc Leu	gtc Val	aat Asn	ccg Pro 1300	cta Leu	acc Thr	aac Asn	cag Gln	aga Arg 1305	ttg Leu	tca Ser	gtg Val	gag Glu	5060
ggt Gly 1310	gca Ala	gtg Val	aag Lys	gct Ala	ggc Gly 1315	ctg Leu	gtg Val	ggc Gly	atg Met	gag Glu 1320	cag Gln	agt Ser	gaa Glu	cat His	5105
ctg Leu 1325	agg Arg	cag Gln	gtt Val	gaa Glu	aag Lys 1330	gct Ala	gtg Val	aca Thr	ggg Gly	tac Tyr 1335	tca Ser	gac Asp	ccc Pro	ttt Phe	5150
tca Ser 1340	gga Gly	ggt Gly	tcc Ser	ctt Leu	tct Ser 1345	ctg Leu	tgg Trp	cag Gln	gcc Ala	atg Met 1350	gag Glu	aag Lys	ggg Gly	ctt Leu	5195
gta Val 1355	acc Thr	caa Gln	agt Ser	gag Glu	gcc Ala 1360	ttt Phe	cct Pro	ctc Leu	ctg Leu	caa Gln 1365	gtc Val	cag Gln	ctg Leu	gcc Ala	5240
aca Thr 1370	ggg Gly	ggt Gly	gtt Val	gtg Val	gac Asp 1375	ccc Pro	gtc Val	cat His	gga Gly	gtg Val 1380	cac His	ctg Leu	ccc Pro	cag Gln	5285

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gaa Glu 1385	gtg Val	gcc Ala	tac Tyr	aag Lys	ctt Leu 1390	ggt Gly	ctc Leu	ctg Leu	gac Asp	gag Glu 1395	cag Gln	aca Thr	agc Ser	cga Arg	5330
gtg Val 1400	ctg Leu	acc Thr	gcc Ala	act Thr	ggg Gly 1405	aag Lys	gaa Glu	aac Asn	aaa Lys	ctc Leu 1410	ttt Phe	ttt Phe	gac Asp	ccc Pro	5375
aac Asn 1415	tcc Ser	cgt Arg	gag Glu	aag Lys	gtg Val 1420	aca Thr	tac Tyr	cag Gln	cag Gln	ctc Leu 1425	agg Arg	gaa Glu	ctc Leu	tgt Cys	5420
gtg Val 1430	ctg Leu	gat Asp	gcc Ala	gac Asp	act Thr 1435	ggc Gly	ttg Leu	tgg Trp	ctg Leu	ctg Leu 1440	ccc Pro	ctg Leu	ccc Pro	cag Gln	5465
ggc Gly 1445	act Thr	gtg Val	ctt Leu	gaa Glu	gtg Val 1450	gat Asp	gac Asp	cat His	act Thr	gcg Ala 1455	gtg Val	gca Ala	ctg Leu	agg Arg	5510
gct Ala 1460	atg Met	aag Lys	gtg Val	ccc Pro	atc Ile 1465	aac Asn	atg Met	ggg Gly	agg Arg	ttc Phe 1470	caa Gln	ggg Gly	cac His	agt Ser	5555
gtg Val 1475	tca Ser	ctc Leu	tgg Trp	gac Asp	ctg Leu 1480	cta Leu	cac His	tct Ser	gag Glu	tat Tyr 1485	gtt Val	ggg Gly	gct Ala	gag Glu	5600
aag Lys 1490	cgg Arg	agg Arg	gag Glu	ctg Leu	gtg Val 1495	gca Ala	ctt Leu	tgt Cys	tgt Cys	tcc Ser 1500	ggg Gly	agg Arg	gct Ala	gcc Ala	5645
gct Ala 1505	ctg Leu	cga Arg	cag Gln	gtc Val	atc Ile 1510	ggt Gly	atg Met	ctc Leu	acc Thr	acc Thr 1515	ctg Leu	gtg Val	gaa Glu	gct Ala	5690
gca Ala 1520	gag Glu	aag Lys	cag Gln	ccc Pro	tcg Ser 1525	cag Gln	gcc Ala	acc Thr	ttc Phe	aaa Lys 1530	ggg Gly	ctc Leu	cgg Arg	aag Lys	5735
cag Gln 1535	gtt Val	tca Ser	gct Ala	ggg Gly	gac Asp 1540	ttg Leu	ttt Phe	agg Arg	tcc Ser	cag Gln 1545	ctg Leu	atc Ile	acc Thr	aag Lys	5780
cag Gln 1550	aca Thr	ctg Leu	gat Asp	gag Glu	ctc Leu 1555	aat Asn	cag Gln	ggg Gly	aag Lys	agg Arg 1560	acg Thr	gtc Val	cag Gln	gaa Glu	5825
gtg Val 1565	aca Thr	gag Glu	atg Met	gat Asp	agt Ser 1570	gtg Val	agg Arg	agg Arg	tcc Ser	ctg Leu 1575	gaa Glu	gga Gly	ggc Gly	aac Asn	5870
ttc Phe 1580	att Ile	gct Ala	ggg Gly	gtc Val	ctt Leu 1585	att Ile	cag Gln	gat Asp	aca Thr	aaa Lys 1590	gag Glu	aag Lys	atg Met	agt Ser	5915
atc Ile 1595	cca Pro	gag Glu	gcc Ala	ttg Leu	aga Arg 1600	agg Arg	cac His	att Ile	ctg Leu	agg Arg 1605	cca Pro	ggc Gly	aca Thr	gcc Ala	5960
ctg Leu 1610	gtg Val	ctg Leu	ctg Leu	gag Glu	gca Ala 1615	cag Gln	gca Ala	gcc Ala	act Thr	ggt Gly 1620	ttc Phe	atc Ile	att Ile	gac Asp	6005
ccc Pro 1625	gtg Val	gaa Glu	aac Asn	cgg Arg	aag Lys 1630	cta Leu	act Thr	gta Val	gag Glu	caa Gln 1635	gcg Ala	ttc Phe	cag Gln	gca Ala	6050
ggg	atg	ttt	ggg	aag	gaa	acc	tac	atg	aag	ctg	tta	tca	gcc	gag	6095

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Gly 1640	Met	Phe	Gly	Lys	Glu 1645	Thr	Tyr	Met	Lys	Leu 1650	Leu	Ser	Ala	Glu	
cgg Arg 1655	gct Ala	gtc Val	acc Thr	ggc Gly	tat Tyr 1660	aca Thr	gac Asp	cct Pro	tac Tyr	acg Thr 1665	gga Gly	gaa Glu	cag Gln	atc Ile	6140
tcc Ser 1670	ctc Leu	ttt Phe	cag Gln	gcc Ala	atg Met 1675	cag Gln	agg Arg	gac Asp	ctt Leu	att Ile 1680	gtc Val	agg Arg	gac Asp	cat His	6185
ggc Gly 1685	atc Ile	cgt Arg	cta Leu	ctg Leu	gag Glu 1690	gcc Ala	cag Gln	atc Ile	gcc Ala	aca Thr 1695	ggg Gly	ggg Gly	atc Ile	att Ile	6230
gac Asp 1700	cct Pro	gtg Val	cac His	agc Ser	cac His 1705	cgt Arg	gtg Val	cct Pro	gtg Val	gac Asp 1710	gtg Val	gcc Ala	tac Tyr	caa Gln	6275
cgt Arg 1715	ggc Gly	tac Tyr	ttc Phe	aat Asn	gag Glu 1720	gag Glu	atg Met	aac Asn	cgc Arg	atc Ile 1725	ttg Leu	tct Ser	gac Asp	cca Pro	6320
agc Ser 1730	gat Asp	gac Asp	acc Thr	aag Lys	ggc Gly 1735	ttc Phe	ttt Phe	gac Asp	ccc Pro	aac Asn 1740	acc Thr	cat His	gag Glu	aac Asn	6365
ctc Leu 1745	act Thr	tac Tyr	ctg Leu	cag Gln	ctg Leu 1750	cta Leu	gag Glu	cgc Arg	tgt Cys	gtg Val 1755	gag Glu	gac Asp	cct Pro	gag Glu	6410
act Thr 1760	ggc Gly	ctg Leu	tat Tyr	atg Met	ttg Leu 1765	gaa Glu	att Ile	gta Val	aag Lys	aaa Lys 1770	gga Gly	gaa Glu	acc Thr	tac Tyr	6455
aca Thr 1775	tac Tyr	att Ile	gat Asp	gaa Glu	gcc Ala 1780	aca Thr	agg Arg	caa Gln	gct Ala	ctg Leu 1785	aca Thr	tcc Ser	aga Arg	act Thr	6500
gtg Val 1790	aaa Lys	atg Met	tat Tyr	gta Val	ggg Gly 1795	aag Lys	ttt Phe	gca Ala	ggc Gly	cag Gln 1800	acg Thr	gtg Val	tct Ser	gtg Val	6545
tgg Trp 1805	gac Asp	ctg Leu	tta Leu	tct Ser	tcc Ser 1810	cag Gln	tat Tyr	ttt Phe	acc Thr	gaa Glu 1815	gga Gly	agg Arg	agg Arg	aga Arg	6590
aag Lys 1820	ctt Leu	ttg Leu	cgg Arg	gag Glu	tac Tyr 1825	aga Arg	gcc Ala	cag Gln	aac Asn	ata Ile 1830	ggc Gly	ctg Leu	gag Glu	aat Asn	6635
ctg Leu 1835	ctg Leu	gag Glu	gtg Val	att Ile	acc Thr 1840	tcg Ser	acc Thr	gtg Val	gaa Glu	gaa Glu 1845	aca Thr	gag Glu	aag Lys	caa Gln	6680
agt Ser 1850	caa Gln	ata Ile	ttc Phe	aag Lys	gtg Val 1855	ccg Pro	ggg Gly	atc Ile	cat His	ggc Gly 1860	gac Asp	gtg Val	aca Thr	gct Ala	6725
gca Ala 1865	gaa Glu	ctg Leu	ttc Phe	aac Asn	tcc Ser 1870	ggg Gly	atc Ile	ctt Leu	aac Asn	aag Lys 1875	aag Lys	acc Thr	ctg Leu	gat Asp	6770
gca Ala 1880	ctc Leu	cgc Arg	agt Ser	ggg Gly	gat Asp 1885	aga Arg	ggg Gly	ttc Phe	cag Gln	gac Asp 1890	ctc Leu	cgc Arg	tgg Trp	ctg Leu	6815
gag Glu	gat Asp	gta Val	cgt Arg	gtc Val	tac Tyr	ctg Leu	gag Glu	ggc Gly	agc Ser	aat Asn	tac Tyr	atc Ile	gct Ala	gga Gly	6860



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1895		1900		1905											
gtg Val 1910	ata Ile	gca Ala	ccc Pro	cta Leu	acc Thr 1915	cag Gln	aag Lys	gtc Val	atg Met	agc Ser 1920	ttc Phe	tac Tyr	gag Glu	gcc Ala	6905
agc Ser 1925	agg Arg	gaa Glu	gag Glu	ctc Leu	atc Ile 1930	ccc Pro	gca Ala	ggg Gly	ttt Phe	gca Ala 1935	gct Ala	cag Gln	atg Met	ctg Leu	6950
gag Glu 1940	gca Ala	cag Gln	gct Ala	gcc Ala	act Thr 1945	ggg Gly	tac Tyr	cta Leu	atg Met	gac Asp 1950	cct Pro	tgc Cys	acc Thr	aac Asn	6995
cag Gln 1955	agg Arg	ctg Leu	tgt Cys	gtg Val	gat Asp 1960	gag Glu	gcc Ala	ata Ile	gca Ala	gct Ala 1965	ggg Gly	ctg Leu	gtg Val	ggc Gly	7040
gaa Glu 1970	gac Asp	ctg Leu	aga Arg	gag Glu	aga Arg 1975	ctt Leu	gtg Val	aat Asn	gca Ala	gag Glu 1980	atg Met	gca Ala	gca Ala	aag Lys	7085
ggc Gly 1985	tac Tyr	aaa Lys	gac Asp	cca Pro	gcc Ala 1990	aca Thr	ggg Gly	gag Glu	act Thr	atc Ile 1995	cca Pro	ctc Leu	tac Tyr	cag Gln	7130
gcc Ala 2000	atg Met	gag Glu	agg Arg	aag Lys	tta Leu 2005	gtc Val	gga Gly	agg Arg	gag Glu	gag Glu 2010	gca Ala	ctg Leu	agg Arg	ttg Leu	7175
ctg Leu 2015	gag Glu	gtg Val	cag Gln	gtg Val	gcc Ala 2020	acg Thr	ggc Gly	ggg Gly	gtc Val	att Ile 2025	gac Asp	cct Pro	cgg Arg	cac His	7220
cac His 2030	cat His	cgg Arg	gtc Val	cct Pro	ctg Leu 2035	gat Asp	aca Thr	gcc Ala	tgc Cys	cag Gln 2040	cgg Arg	ggc Gly	tgt Cys	atg Met	7265
tgt Cys 2045	gac Asp	gac Asp	agc Ser	ctt Leu	gtt Val 2050	ctc Leu	att Ile	gct Ala	gac Asp	caa Gln 2055	aag Lys	cac His	atg Met	agg Arg	7310
aaa Lys 2060	agg Arg	ttt Phe	gtg Val	gat Asp	ccc Pro 2065	aac Asn	aca Thr	caa Gln	gaa Glu	aag Lys 2070	gtc Val	aca Thr	tac Tyr	cag Gln	7355
gag Glu 2075	ctg Leu	cag Gln	gac Asp	cgg Arg	tgc Cys 2080	cag Gln	cgg Arg	gaa Glu	gag Glu	aag Lys 2085	tca Ser	ggc Gly	tgg Trp	gct Ala	7400
ctg Leu 2090	ttc Phe	cca Pro	gtg Val	gtc Val	aag Lys 2095	gac Asp	aaa Lys	aag Lys	gac Asp	ata Ile 2100	gaa Glu	tat Tyr	gtt Val	gat Asp	7445
gag Glu 2105	gcc Ala	acc Thr	aaa Lys	agg Arg	gcc Ala 2110	ctg Leu	gag Glu	gca Ala	gaa Glu	cag Gln 2115	gtg Val	gaa Glu	gtg Val	act Thr	7490
gtg Val 2120	ggg Gly	agg Arg	tac Tyr	aga Arg	ggc Gly 2125	cag Gln	agg Arg	cga Arg	tct Ser	gtg Val 2130	tgg Trp	gaa Glu	ctg Leu	ctg Leu	7535
aac Asn 2135	tca Ser	gag Glu	tat Tyr	gtg Val	tct Ser 2140	gaa Glu	gag Glu	aag Lys	aag Lys	atg Met 2145	gaa Glu	cta Leu	gtt Val	aga Arg	7580
cta Leu 2150	tac Tyr	aaa Lys	gag Glu	gac Asp	aca Thr 2155	acc Thr	cgg Arg	gca Ala	ctg Leu	cag Gln 2160	aag Lys	gtg Val	gta Val	gag Glu	7625

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ctc Leu 2165	atc Ile	cta Leu	caa Gln	atg Met	att Ile 2170	gca Ala	gac Asp	aag Lys	gaa Glu	agg Arg 2175	aga Arg	agc Ser	agg Arg	caa Gln	7670
ctc Leu 2180	tgg Trp	ttc Phe	cga Arg	gga Gly	tta Leu 2185	aga Arg	act Thr	cag Gln	gtc Val	aca Thr 2190	gct Ala	gag Glu	gaa Glu	ctg Leu	7715
ctg Leu 2195	agg Arg	tca Ser	gag Glu	gtc Val	atc Ile 2200	aca Thr	aaa Lys	cag Gln	act Thr	ctg Leu 2205	gag Glu	gac Asp	ctg Leu	gaa Glu	7760
gaa Glu 2210	ggg Gly	aga Arg	acc Thr	aca Thr	gta Val 2215	gat Asp	cag Gln	att Ile	gaa Glu	cga Arg 2220	aag Lys	gaa Glu	gac Asp	gtg Val	7805
aag Lys 2225	aga Arg	tac Tyr	ctc Leu	aag Lys	gga Gly 2230	acc Thr	agc Ser	tgc Cys	ata Ile	gcg Ala 2235	ggg Gly	gtc Val	ctg Leu	gtg Val	7850
ccc Pro 2240	gtc Val	cag Gln	gga Gly	gag Glu	cct Pro 2245	ggg Gly	cgc Arg	cag Gln	gag Glu	aag Lys 2250	atg Met	agc Ser	atc Ile	tat Tyr	7895
cag Gln 2255	gcc Ala	atg Met	tgg Trp	aag Lys	gga Gly 2260	gtc Val	ctg Leu	agg Arg	cca Pro	ggc Gly 2265	aca Thr	gcc Ala	ctg Leu	gtg Val	7940
ctg Leu 2270	ctg Leu	gag Glu	gct Ala	cag Gln	gca Ala 2275	gcc Ala	aca Thr	ggc Gly	ttc Phe	atc Ile 2280	atc Ile	gac Asp	cca Pro	gtg Val	7985
aac Asn 2285	aac Asn	cgc Arg	aga Arg	ctg Leu	tct Ser 2290	gtg Val	gag Glu	gag Glu	gcc Ala	gtg Val 2295	gct Ala	gca Ala	ggc Gly	gtg Val	8030
gtg Val 2300	gga Gly	ggc Gly	gag Glu	atc Ile	caa Gln 2305	gag Glu	aag Lys	ctg Leu	ctg Leu	tct Ser 2310	gct Ala	gag Glu	cgt Arg	gcg Ala	8075
gtc Val 2315	acc Thr	ggg Gly	tac Tyr	acg Thr	gac Asp 2320	ccc Pro	tac Tyr	acc Thr	ggg Gly	gac Asp 2325	cag Gln	atc Ile	tcc Ser	ctc Leu	8120
ttc Phe 2330	cag Gln	gcc Ala	atg Met	cag Gln	agg Arg 2335	gac Asp	ctc Leu	att Ile	gtg Val	aga Arg 2340	gac Asp	cat His	ggc Gly	att Ile	8165
cgt Arg 2345	ttg Leu	ttg Leu	gaa Glu	gcc Ala	cag Gln 2350	att Ile	gcc Ala	acg Thr	ggt Gly	ggc Gly 2355	gtc Val	atc Ile	gat Asp	cct Pro	8210
gtg Val 2360	cac His	agc Ser	cac His	cgt Arg	gtg Val 2365	ccc Pro	gtg Val	gac Asp	gtg Val	gcc Ala 2370	tac Tyr	cag Gln	cgt Arg	ggc Gly	8255
tac Tyr 2375	ttt Phe	gat Asp	gaa Glu	gac Asp	atg Met 2380	aac Asn	agc Ser	att Ile	ttg Leu	gcg Ala 2385	gac Asp	cct Pro	ggt Gly	gac Asp	8300
gac Asp 2390	acc Thr	aag Lys	ggc Gly	ttc Phe	ttt Phe 2395	gac Asp	ccc Pro	aac Asn	act Thr	cac His 2400	gag Glu	aac Asn	ctc Leu	act Thr	8345
tac Tyr 2405	cta Leu	cag Gln	ctg Leu	ctg Leu	cgc Arg 2410	cgc Arg	tgt Cys	gtg Val	cgc Arg	gac Asp 2415	cca Pro	gag Glu	act Thr	ggc Gly	8390

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ttc Phe 2420	tac Tyr	atg Met	ctg Leu	cag Gln	ctg Leu 2425	gct Ala	gga Gly	aag Lys	ggc Gly	tcc Ser 2430	agt Ser	gtg Val	cac His	cac His	8435
ctg Leu 2435	agc Ser	gag Glu	gag Glu	ctg Leu	aga Arg 2440	cgg Arg	gcc Ala	ctg Leu	cgt Arg	gaa Glu 2445	gcc Ala	cgt Arg	gtg Val	acc Thr	8480
cca Pro 2450	ggc Gly	acg Thr	ggc Gly	gac Asp	ttc Phe 2455	cag Gln	ggc Gly	cag Gln	agc Ser	atc Ile 2460	tct Ser	gtc Val	tgg Trp	gag Glu	8525
ctt Leu 2465	ctc Leu	ttc Phe	tac Tyr	cga Arg	gag Glu 2470	gtg Val	cct Pro	gag Glu	agt Ser	ctg Leu 2475	cgc Arg	cag Gln	gac Asp	ctg Leu	8570
ctg Leu 2480	cgt Arg	tgc Cys	tac Tyr	cag Gln	gca Ala 2485	ggg Gly	ggg Gly	ctc Leu	acc Thr	gtt Val 2490	cat His	gac Asp	gtg Val	acc Thr	8615
acc Thr 2495	aca Thr	ctc Leu	acc Thr	tca Ser	ctg Leu 2500	ctg Leu	gcc Ala	cga Arg	gcc Ala	aag Lys 2505	gat Asp	ggg Gly	agc Ser	cca Pro	8660
cgt Arg 2510	ggg Gly	gat Asp	cca Pro	caa Gln	gga Gly 2515	gcc Ala	ctg Leu	ggc Gly	aag Lys	gcc Ala 2520	acc Thr	atg Met	gaa Glu	gta Val	8705
aaa Lys 2525	cgg Arg	ggg Gly	cat His	ctc Leu	cgg Arg 2530	ggc Gly	cac His	gag Glu	gtc Val	cca Pro 2535	gtg Val	tgg Trp	gac Asp	att Ile	8750
ctg Leu 2540	aca Thr	tcc Ser	aac Asn	tat Tyr	gtg Val 2545	agc Ser	agg Arg	gac Asp	acc Thr	cgg Arg 2550	aag Lys	gag Glu	ctg Leu	ctg Leu	8795
gcc Ala 2555	cag Gln	ttc Phe	agc Ser	tct Ser	ggg Gly 2560	tgc Ser	ctg Leu	act Thr	ctg Leu	ccc Pro 2565	atg Met	ctg Leu	aag Lys	agg Arg	8840
aga Arg 2570	ctg Leu	acc Thr	acc Thr	att Ile	att Ile 2575	gag Glu	gag Glu	gct Ala	gag Glu	gag Glu 2580	aca Thr	cag Gln	gag Glu	tcc Ser	8885
aag Lys 2585	cca Pro	aag Lys	ccg Pro	aga Arg	gac Asp 2590	gcc Ala	tct Ser	ctt Leu	aag Lys	caa Gln 2595	cag Gln	gac Asp	act Thr	ggg Gly	8930
gcc Ala 2600	aga Arg	ggc Gly	tca Ser	ggg Gly	acc Thr 2605	tcc Ser	cca Pro	gac Asp	gag Glu	gga Gly 2610	gat Asp	gct Ala	cag Gln	gac Asp	8975
agc Ser 2615	tcc Ser	gag Glu	agt Ser	gcc Ala	agg Arg 2620	cag Gln	caa Gln	cag Gln	gag Glu	cag Gln 2625	act Thr	ctg Leu	cgt Arg	gcc Ala	9020
acc Thr 2630	acc Thr	atg Met	cag Gln	gta Val	cac His 2635	cgt Arg	ggg Gly	cag Gln	ttc Phe	cgg Arg 2640	gac Asp	cag Gln	caa Gln	gtt Val	9065
tct Ser 2645	gtg Val	tgg Trp	aaa Lys	gtc Val	ctg Leu 2650	ttc Phe	tcc Ser	tcc Ser	tac Tyr	ctg Leu 2655	agt Ser	gag Glu	acc Thr	cgc Arg	9110
cgg Arg 2660	gag Glu	gag Glu	ctc Leu	ctt Leu	gcc Ala 2665	cag Gln	cac His	ttg Leu	gct Ala	ggc Gly 2670	aag Lys	ctg Leu	ggg Gly	gta Val	9155
atg	gaa	ctc	gtt	tcc	ctc	ctc	acc	caa	atc	atc	gag	gag	aca	gaa	9200

Met 2675	Glu	Leu	Val	Ser	Leu 2680	Leu	Thr	Gln	Ile	Ile 2685	Glu	Glu	Thr	Glu		
gaa Glu 2690	cgg Arg	ctc Leu	agc Ser	aag Lys	gtg Val 2695	tct Ser	ttc Phe	ccc Pro	ggc Gly	ctg Leu 2700	agg Arg	cga Arg	cag Gln	gtg Val	9245	
tcc Ser 2705	gca Ala	tct Ser	gag Glu	ttg Leu	tgt Cys 2710	acc Thr	tct Ser	ggc Gly	atc Ile	ctg Leu 2715	gac Asp	cgg Arg	gac Asp	acc Thr	9290	
atg Met 2720	cga Arg	gaa Glu	ctg Leu	gca Ala	cag Gln 2725	ggc Gly	acc Thr	aag Lys	acc Thr	att Ile 2730	cat His	gag Glu	gtg Val	aca Thr	9335	
gag Glu 2735	atg Met	gac Asp	tcc Ser	gtc Val	aag Lys 2740	cgc Arg	tac Tyr	ctg Leu	ggg Gly	ggc Gly 2745	tcc Ser	agc Ser	tgc Cys	ata Ile	9380	
gcg Ala 2750	ggc Gly	gtc Val	ctg Leu	gtg Val	ccc Pro 2755	gtc Val	cag Gln	gga Gly	gag Glu	cct Pro 2760	ggg Gly	cgc Arg	cag Gln	gag Glu	9425	
aag Lys 2765	atg Met	agc Ser	atc Ile	tat Tyr	cag Gln 2770	gcc Ala	atg Met	tgg Trp	aag Lys	gga Gly 2775	gtc Val	ctg Leu	agg Arg	cca Pro	9470	
ggc Gly 2780	aca Thr	gcc Ala	ctg Leu	gtg Val	ctg Leu 2785	ctg Leu	gag Glu	gct Ala	cag Gln	gca Ala 2790	gcc Ala	aca Thr	ggc Gly	ttc Phe	9515	
atc Ile 2795	atc Ile	gac Asp	cca Pro	gtg Val	aac Asn 2800	aac Asn	cgc Arg	aga Arg	ctg Leu	tct Ser 2805	gtg Val	gag Glu	gag Glu	gcc Ala	9560	
gtg Val 2810	gct Ala	gca Ala	ggc Gly	gtg Val	gtg Val 2815	gga Gly	ggc Gly	gag Glu	atc Ile	caa Gln 2820	gag Glu	aag Lys	ctg Leu	ctg Leu	9605	
tct Ser 2825	gct Ala	gag Glu	cgt Arg	gcg Ala	gtc Val 2830	acc Thr	ggg Gly	tac Tyr	acg Thr	gac Asp 2835	ccc Pro	tac Tyr	acc Thr	ggg Gly	9650	
gac Asp 2840	cag Gln	atc Ile	tcc Ser	ctc Leu	ttc Phe 2845	cag Gln	gcc Ala	atg Met	cag Gln	agg Arg 2850	gac Asp	ctc Leu	att Ile	gtg Val	9695	
aga Arg 2855	gac Asp	cat His	ggc Gly	att Ile	cgt Arg 2860	ttg Leu	ttg Leu	gaa Glu	gcc Ala	cag Gln 2865	att Ile	gcc Ala	acg Thr	ggg Gly	9740	
ggc Gly 2870	gtc Val	atc Ile	gac Asp	cct Pro	gtg Val 2875	cac His	agc Ser	cac His	cgt Arg	gtg Val 2880	ccc Pro	gtg Val	gac Asp	gtg Val	9785	
gcc Ala 2885	tac Tyr	cag Gln	cgt Arg	ggc Gly	tac Tyr 2890	ttt Phe	gat Asp	gaa Glu	gac Asp	atg Met 2895	aac Asn	agc Ser	att Ile	ttg Leu	9830	
gcg Ala 2900	gac Asp	cct Pro	ggg Gly	gac Asp	gac Asp 2905	acc Thr	aag Lys	ggc Gly	ttc Phe	ttt Phe 2910	gac Asp	ccc Pro	aac Asn	act Thr	9875	
cac His 2915	gag Glu	aac Asn	ctc Leu	act Thr	tac Tyr 2920	cta Leu	cag Gln	ctg Leu	ctg Leu	cgc Arg 2925	cgc Arg	tgt Cys	gtg Val	cgc Arg	9920	
gac Asp	cca Pro	gag Glu	act Thr	ggc Gly	ttc Phe	tac Tyr	atg Met	ctg Leu	cag Gln	ctg Leu	gct Ala	gga Gly	aag Lys	ggc Gly	9965	

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2930						2935						2940					
tcc	agt	gtg	cac	cac	ctg	agc	gag	gag	ctg	aga	cgg	gcc	ctg	cgt			10010
Ser	Ser	Val	His	His	Leu	Ser	Glu	Glu	Leu	Arg	Arg	Ala	Leu	Arg			
2945					2950					2955							
gaa	gcc	cgt	gtg	acc	cca	ggc	acg	ggc	gac	ttc	cag	ggc	cag	agc			10055
Glu	Ala	Arg	Val	Thr	Pro	Gly	Thr	Gly	Asp	Phe	Gln	Gly	Gln	Ser			
2960					2965					2970							
atc	tct	gtc	tgg	gag	ctt	ctc	ttc	tac	cga	gag	gtg	cct	gag	agt			10100
Ile	Ser	Val	Trp	Glu	Leu	Leu	Phe	Tyr	Arg	Glu	Val	Pro	Glu	Ser			
2975					2980					2985							
ctg	cgc	cag	gac	ctg	ctg	cgt	cgc	tac	cag	gca	ggg	ggg	ctc	acc			10145
Leu	Arg	Gln	Asp	Leu	Leu	Arg	Arg	Tyr	Gln	Ala	Gly	Gly	Leu	Thr			
2990					2995					3000							
gtt	cat	gac	gtg	acc	acc	aca	ctc	acc	tca	ctg	ctg	gcc	cga	gcc			10190
Val	His	Asp	Val	Thr	Thr	Thr	Leu	Thr	Ser	Leu	Leu	Ala	Arg	Ala			
3005					3010					3015							
aag	gat	ggg	agc	cca	cgt	grg	gat	cca	caa	gga	gcc	ctg	ggc	aag			10235
Lys	Asp	Gly	Ser	Pro	Arg	Xaa	Asp	Pro	Gln	Gly	Ala	Leu	Gly	Lys			
3020					3025					3030							
gcc	acc	atg	gaa	gta	aaa	cgg	ggg	cat	ctc	cgg	ggc	cac	gwg	gtc			10280
Ala	Thr	Met	Glu	Val	Lys	Arg	Gly	His	Leu	Arg	Gly	His	Xaa	Val			
3035					3040					3045							
cca	gtg	tgg	gac	att	ctg	aca	tcc	aac	tat	gtg	agc	agg	gac	acc			10325
Pro	Val	Trp	Asp	Ile	Leu	Thr	Ser	Asn	Tyr	Val	Ser	Arg	Asp	Thr			
3050					3055					3060							
cgg	aag	gag	ctg	ctg	gcc	cag	ttc	agc	tct	ggg	tcg	ctg	act	ctg			10370
Arg	Lys	Glu	Leu	Leu	Ala	Gln	Phe	Ser	Ser	Gly	Ser	Leu	Thr	Leu			
3065					3070					3075							
ccc	atg	ctg	aag	agg	aga	ctg	acc	acc	att	att	gag	gag	gct	gag			10415
Pro	Met	Leu	Lys	Arg	Arg	Leu	Thr	Thr	Ile	Ile	Glu	Glu	Ala	Glu			
3080					3085					3090							
gag	aca	cag	gag	tcc	aag	cca	aag	ccg	aga	gac	gcc	tct	ctt	aag			10460
Glu	Thr	Gln	Glu	Ser	Lys	Pro	Lys	Pro	Arg	Asp	Ala	Ser	Leu	Lys			
3095					3100					3105							
caa	cag	gac	act	ggg	gcc	aga	ggc	tca	ggg	acc	tcc	cca	gac	gag			10505
Gln	Gln	Asp	Thr	Gly	Ala	Arg	Gly	Ser	Gly	Thr	Ser	Pro	Asp	Glu			
3110					3115					3120							
gga	gat	gct	cag	gac	agc	tcc	gag	agt	gcc	agg	cag	caa	cag	gag			10550
Gly	Asp	Ala	Gln	Asp	Ser	Ser	Glu	Ser	Ala	Arg	Gln	Gln	Gln	Glu			
3125					3130					3135							
cag	act	ctg	cgt	gcc	acc	acc	atg	cag	gta	cac	cgt	ggg	cag	ttc			10595
Gln	Thr	Leu	Arg	Ala	Thr	Thr	Met	Gln	Val	His	Arg	Gly	Gln	Phe			
3140					3145					3150							
cgg	gac	cag	caa	gtt	tct	gtg	tgg	aaa	gtc	ctg	ttc	tcc	tcc	tac			10640
Arg	Asp	Gln	Gln	Val	Ser	Val	Trp	Lys	Val	Leu	Phe	Ser	Ser	Tyr			
3155					3160					3165							
ctg	agt	gag	acc	cgc	cgg	gag	gag	ctc	ctt	gcc	cag	cac	ttg	gct			10685
Leu	Ser	Glu	Thr	Arg	Arg	Glu	Glu	Leu	Leu	Ala	Gln	His	Leu	Ala			
3170					3175					3180							
ggc	aag	ctg	ggg	gta	atg	gaa	ctc	gtt	tcc	ctc	ctc	acc	caa	atc			10730
Gly	Lys	Leu	Gly	Val	Met	Glu	Leu	Val	Ser	Leu	Leu	Thr	Gln	Ile			
3185					3190					3195							

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atc Ile 3200	gag Glu	gag Glu	aca Thr	gaa Glu	gaa Glu 3205	cgg Arg	ctc Leu	agc Ser	aag Lys	gtg Val 3210	tct Ser	ttc Phe	ccc Pro	ggc Gly	10775
ctg Leu 3215	agg Arg	cga Arg	cag Gln	gtg Val	tcc Ser 3220	gca Ala	tct Ser	gag Glu	ttg Leu	tgt Cys 3225	acc Thr	tct Ser	ggc Gly	atc Ile	10820
ctg Leu 3230	gac Asp	cgg Arg	gac Asp	acc Thr	atg Met 3235	cga Arg	gaa Glu	ctg Leu	gca Ala	cag Gln 3240	ggc Gly	acc Thr	aag Lys	acc Thr	10865
att Ile 3245	cat His	gag Glu	gtg Val	aca Thr	gag Glu 3250	atg Met	gac Asp	tcc Ser	gtc Val	aag Lys 3255	cgc Arg	tac Tyr	ctg Leu	ggg Gly	10910
ggc Gly 3260	tcc Ser	agc Ser	tgc Cys	ata Ile	gcg Ala 3265	ggc Gly	gtc Val	ctg Leu	gtg Val	ccc Pro 3270	gtc Val	cag Gln	gga Gly	gag Glu	10955
cct Pro 3275	ggg Gly	cgc Arg	cag Gln	gag Glu	aag Lys 3280	atg Met	agc Ser	atc Ile	tat Tyr	cag Gln 3285	gcc Ala	atg Met	tgg Trp	aag Lys	11000
gga Gly 3290	gtc Val	ctg Leu	agg Arg	cca Pro	ggc Gly 3295	aca Thr	gcc Ala	ctg Leu	gtg Val	ctg Leu 3300	ctg Leu	gag Glu	gct Ala	cag Gln	11045
gca Ala 3305	gcc Ala	aca Thr	ggc Gly	ttc Phe	atc Ile 3310	atc Ile	gac Asp	cca Pro	gtg Val	aac Asn 3315	aac Asn	cgc Arg	aga Arg	ctg Leu	11090
tct Ser 3320	gtg Val	gag Glu	gag Glu	gcc Ala	gtg Val 3325	gct Ala	gca Ala	ggc Gly	gtg Val	gtg Val 3330	gga Gly	ggc Gly	gag Glu	atc Ile	11135
caa Gln 3335	gag Glu	aag Lys	ctg Leu	ytg Xaa	tct Ser 3340	gct Ala	gag Glu	cgt Arg	gcg Ala	gtc Val 3345	acc Thr	ggg Gly	tac Tyr	acg Thr	11180
gac Asp 3350	ccc Pro	tac Tyr	acc Thr	ggg Gly	gac Asp 3355	cag Gln	atc Ile	tcc Ser	ctc Leu	ttc Phe 3360	cag Gln	gcc Ala	atg Met	cag Gln	11225
agg Arg 3365	gac Asp	ctc Leu	att Ile	gtg Val	aga Arg 3370	gac Asp	cat His	ggc Gly	att Ile	cgt Arg 3375	ttg Leu	ttg Leu	gaa Glu	gcc Ala	11270
cag Gln 3380	att Ile	gcc Ala	acg Thr	ggt Gly	ggc Gly 3385	gtc Val	atc Ile	gac Asp	cct Pro	gtg Val 3390	cac His	agc Ser	cac His	cgt Arg	11315
gtg Val 3395	ccc Pro	gtg Val	gac Asp	gtg Val	gcc Ala 3400	tac Tyr	cag Gln	cgt Arg	ggc Gly	tac Tyr 3405	ttt Phe	gat Asp	gaa Glu	gac Asp	11360
atg Met 3410	aac Asn	agc Ser	att Ile	ttg Leu	gcg Ala 3415	gac Asp	cct Pro	ggt Gly	gac Asp	gac Asp 3420	acc Thr	aag Lys	ggc Gly	ttc Phe	11405
ttt Phe 3425	gac Asp	ccc Pro	aac Asn	act Thr	cac His 3430	gag Glu	aac Asn	ctc Leu	act Thr	tac Tyr 3435	cta Leu	cag Gln	ctg Leu	ctg Leu	11450
cgc Arg 3440	cgc Arg	tgt Cys	gtg Val	cgc Arg	gac Asp 3445	cca Pro	gag Glu	act Thr	ggc Gly	ttc Phe 3450	tac Tyr	atg Met	ctg Leu	cag Gln	11495

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ctg Leu 3455	gct Ala	gga Gly	aag Lys	ggc Gly	tcc Ser 3460	agt Ser	gtg Val	cac His	cac His	ctg Leu 3465	agc Ser	gag Glu	gag Glu	ctg Leu	11540
aga Arg 3470	cgg Arg	gcc Ala	ctg Leu	cgt Arg	gaa Glu 3475	gcc Ala	cgt Arg	gtg Val	acc Thr	cca Pro 3480	ggc Gly	acg Thr	ggc Gly	gac Asp	11585
ttc Phe 3485	cag Gln	ggc Gly	cag Gln	agc Ser	atc Ile 3490	tct Ser	gtc Val	tgg Trp	gag Glu	ctt Leu 3495	ctc Leu	ttc Phe	tac Tyr	cga Arg	11630
gag Glu 3500	gtg Val	cct Pro	gag Glu	agt Ser	ctg Leu 3505	cgc Arg	cag Gln	gac Asp	ctg Leu	ctg Leu 3510	cgt Arg	cgc Arg	tac Tyr	cag Gln	11675
gca Ala 3515	ggt Gly	ggg Gly	ctc Leu	acc Thr	gtt Val 3520	cat His	gac Asp	gtg Val	acc Thr	acc Thr 3525	aca Thr	ctc Leu	acc Thr	tca Ser	11720
ctg Leu 3530	ctg Leu	gcc Ala	cga Arg	gcc Ala	aag Lys 3535	gat Asp	ggg Gly	agc Ser	cca Pro	cgt Arg 3540	grg Xaa	gat Asp	cca Pro	caa Gln	11765
gga Gly 3545	gcc Ala	ctg Leu	ggc Gly	aag Lys	gcc Ala 3550	acc Thr	atg Met	gaa Glu	gta Val	aaa Lys 3555	cgg Arg	ggt Gly	cat His	ctc Leu	11810
cgg Arg 3560	ggc Gly	cac His	gwg Xaa	gtc Val	cca Pro 3565	gtg Val	tgg Trp	gac Asp	att Ile	ctg Leu 3570	aca Thr	tcc Ser	aac Asn	tat Tyr	11855
gtg Val 3575	agc Ser	agg Arg	gac Asp	acc Thr	cgg Arg 3580	aag Lys	gag Glu	ctg Leu	ctg Leu	gcc Ala 3585	cag Gln	ttc Phe	agc Ser	tct Ser	11900
ggg Gly 3590	tcg Ser	ctg Leu	act Thr	ctg Leu	ccc Pro 3595	atg Met	ctg Leu	aag Lys	agg Arg	aga Arg 3600	ctg Leu	acc Thr	acc Thr	att Ile	11945
att Ile 3605	gag Glu	gag Glu	gct Ala	gag Glu	gag Glu 3610	aca Thr	cag Gln	gag Glu	tcc Ser	aag Lys 3615	cca Pro	aag Lys	ccg Pro	aga Arg	11990
gac Asp 3620	gcc Ala	tct Ser	ctt Leu	aag Lys	caa Gln 3625	cag Gln	gac Asp	act Thr	ggg Gly	gcc Ala 3630	aga Arg	ggc Gly	tca Ser	ggg Gly	12035
acc Thr 3635	tcc Ser	cca Pro	gac Asp	gag Glu	gga Gly 3640	gat Asp	gct Ala	cag Gln	gac Asp	agc Ser 3645	tcc Ser	gag Glu	agt Ser	gcc Ala	12080
agg Arg 3650	cag Gln	caa Gln	cag Gln	gag Glu	cag Gln 3655	act Thr	ctg Leu	cgt Arg	gcc Ala	acc Thr 3660	acc Thr	atg Met	cag Gln	gta Val	12125
cac His 3665	cgt Arg	ggg Gly	cag Gln	ttc Phe	cgg Arg 3670	gac Asp	cag Gln	caa Gln	gtt Val	tct Ser 3675	gtg Val	tgg Trp	aaa Lys	gtc Val	12170
ctg Leu 3680	ttc Phe	tcc Ser	tcc Ser	tac Tyr	ctg Leu 3685	agt Ser	gag Glu	acc Thr	cgc Arg	cgg Arg 3690	gag Glu	gag Glu	ctc Leu	ctt Leu	12215
gcc Ala 3695	cag Gln	cac His	ttg Leu	gct Ala	ggc Gly 3700	aag Lys	ctg Leu	ggg Gly	gta Val	atg Met 3705	gaa Glu	ctc Leu	gtt Val	tcc Ser	12260
ctc	ctc	acc	caa	atc	atc	gag	gag	aca	gaa	gaa	cgg	ctc	agc	aag	12305

Leu 3710	Leu	Thr	Gln	Ile	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser	Lys	
					3715					3720					
gtg Val 3725	tct Ser	ttc Phe	ccc Pro	ggc Gly	ctg Leu 3730	agg Arg	cga Arg	cag Gln	gtg Val	tcc Ser 3735	gca Ala	tct Ser	gag Glu	ttg Leu	12350
tgt Cys 3740	acc Thr	tct Ser	ggc Gly	atc Ile	ctg Leu 3745	gac Asp	cgg Arg	gac Asp	acc Thr	atg Met 3750	cga Arg	gaa Glu	ctg Leu	gca Ala	12395
cag Gln 3755	ggc Gly	acc Thr	aag Lys	acc Thr	att Ile 3760	cat His	gag Glu	gtg Val	aca Thr	gag Glu 3765	atg Met	gac Asp	tcc Ser	gtc Val	12440
aag Lys 3770	cgc Arg	tac Tyr	ctg Leu	ggg Gly	ggc Gly 3775	tcc Ser	agc Ser	tgc Cys	ata Ile	gcg Ala 3780	ggc Gly	gtc Val	ctg Leu	gtg Val	12485
ccc Pro 3785	gtc Val	cag Gln	gga Gly	gag Glu	cct Pro 3790	ggg Gly	cgc Arg	cag Gln	gag Glu	aag Lys 3795	atg Met	agc Ser	atc Ile	tat Tyr	12530
cag Gln 3800	gcc Ala	atg Met	tgg Trp	aag Lys	gga Gly 3805	gtc Val	ctg Leu	agg Arg	cca Pro	ggc Gly 3810	aca Thr	gcc Ala	ctg Leu	gtg Val	12575
ctg Leu 3815	ctg Leu	gag Glu	gct Ala	cag Gln	gca Ala 3820	gcc Ala	aca Thr	ggc Gly	ttc Phe	atc Ile 3825	atc Ile	gac Asp	cca Pro	gtg Val	12620
aac Asn 3830	aac Asn	cgc Arg	aga Arg	ctg Leu	tct Ser 3835	gtg Val	gag Glu	gag Glu	gcc Ala	gtg Val 3840	gct Ala	gca Ala	ggc Gly	gtg Val	12665
gtg Val 3845	gga Gly	ggc Gly	gag Glu	atc Ile	caa Gln 3850	gag Glu	aag Lys	ctg Leu	ytg Xaa	tct Ser 3855	gct Ala	gag Glu	cgt Arg	gcg Ala	12710
gtc Val 3860	acc Thr	ggg Gly	tac Tyr	acg Thr	gac Asp 3865	ccc Pro	tac Tyr	acc Thr	ggg Gly	gac Asp 3870	cag Gln	atc Ile	tcc Ser	ctc Leu	12755
ttc Phe 3875	cag Gln	gcc Ala	atg Met	cag Gln	agg Arg 3880	gac Asp	ctc Leu	att Ile	gtg Val	aga Arg 3885	gac Asp	cat His	ggc Gly	att Ile	12800
cgt Arg 3890	ttg Leu	ttg Leu	gaa Glu	gcc Ala	cag Gln 3895	att Ile	gcc Ala	acg Thr	ggg Gly	ggc Gly 3900	gtc Val	atc Ile	gac Asp	cct Pro	12845
gtg Val 3905	cac His	agc Ser	cac His	cgt Arg	gtg Val 3910	ccc Pro	gtg Val	gac Asp	gtg Val	gcc Ala 3915	tac Tyr	cag Gln	cgt Arg	ggc Gly	12890
tac Tyr 3920	ttt Phe	gat Asp	gaa Glu	gac Asp	atg Met 3925	aac Asn	agc Ser	att Ile	ttg Leu	gcg Ala 3930	gac Asp	cct Pro	ggg Gly	gac Asp	12935
gac Asp 3935	acc Thr	aag Lys	ggc Gly	ttc Phe	ttt Phe 3940	gac Asp	ccc Pro	aac Asn	act Thr	cac His 3945	gag Glu	aac Asn	ctc Leu	act Thr	12980
tac Tyr 3950	cta Leu	cag Gln	ctg Leu	ctg Leu	cgc Arg 3955	cgc Arg	tgt Cys	gtg Val	cgc Arg	gac Asp 3960	cca Pro	gag Glu	act Thr	ggc Gly	13025
ttc Phe	tac Tyr	atg Met	ctg Leu	cag Gln	ctg Leu	gct Ala	gga Gly	aag Lys	ggc Gly	tcc Ser	agt Ser	gtg Val	cac His	cac His	13070



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3965											3970											3975										
ctg Leu 3980	agc Ser	gag Glu	gag Glu	ctg Leu	aga Arg 3985	cgg Arg	gcc Ala	ctg Leu	cgt Arg	gaa Glu 3990	gcc Ala	cgt Arg	gtg Val	acc Thr	13115																	
cca Pro 3995	ggc Gly	acg Thr	ggc Gly	gac Asp	ttc Phe 4000	cag Gln	ggc Gly	cag Gln	agc Ser	atc Ile 4005	tct Ser	gtc Val	tgg Trp	gag Glu	13160																	
ctt Leu 4010	ctc Leu	ttc Phe	tac Tyr	cga Arg	gag Glu 4015	gtg Val	cct Pro	gag Glu	agt Ser	ctg Leu 4020	cgc Arg	cag Gln	gac Asp	ctg Leu	13205																	
ctg Leu 4025	cgt Arg	cgc Arg	tac Tyr	cag Gln	gca Ala 4030	ggg Gly	ggg Gly	ctc Leu	acc Thr	gtt Val 4035	cat His	gac Asp	gtg Val	acc Thr	13250																	
acc Thr 4040	aca Thr	ctc Leu	acc Thr	tca Ser	ctg Leu 4045	ctg Leu	gcc Ala	cga Arg	gcc Ala	aag Lys 4050	gat Asp	ggg Gly	agc Ser	cca Pro	13295																	
cgt Arg 4055	grg Xaa	gat Asp	cca Pro	caa Gln	gga Gly 4060	gcc Ala	ctg Leu	ggc Gly	aag Lys	gcc Ala 4065	acc Thr	atg Met	gaa Glu	gta Val	13340																	
aaa Lys 4070	cgg Arg	ggg Gly	cat His	ctc Leu	cgg Arg 4075	ggc Gly	cac His	gwg Xaa	gtc Val	cca Pro 4080	gtg Val	tgg Trp	gac Asp	att Ile	13385																	
ctg Leu 4085	aca Thr	tcc Ser	aac Asn	tat Tyr	gtg Val 4090	agc Ser	agg Arg	gac Asp	acc Thr	cgg Arg 4095	aag Lys	gag Glu	ctg Leu	ctg Leu	13430																	
gcc Ala 4100	cag Gln	ttc Phe	agc Ser	tct Ser	ggg Gly 4105	tcg Ser	ctg Leu	act Thr	ctg Leu	ccc Pro 4110	atg Met	ctg Leu	aag Lys	agg Arg	13475																	
aga Arg 4115	ctg Leu	acc Thr	acc Thr	att Ile	att Ile 4120	gag Glu	gag Glu	gct Ala	gag Glu	gag Glu 4125	aca Thr	cag Gln	gag Glu	tcc Ser	13520																	
aag Lys 4130	cca Pro	aag Lys	ccg Pro	aga Arg	gac Asp 4135	gcc Ala	tct Ser	ctt Leu	aag Lys	caa Gln 4140	cag Gln	gac Asp	act Thr	ggg Gly	13565																	
gcc Ala 4145	aga Arg	ggc Gly	tca Ser	ggg Gly	acc Thr 4150	tcc Ser	cca Pro	gac Asp	gag Glu	gga Gly 4155	gat Asp	gct Ala	cag Gln	gac Asp	13610																	
agc Ser 4160	tcc Ser	gag Glu	agt Ser	gcc Ala	agg Arg 4165	cag Gln	caa Gln	cag Gln	gag Glu	cag Gln 4170	act Thr	ctg Leu	cgt Arg	gcc Ala	13655																	
acc Thr 4175	acc Thr	atg Met	cag Gln	gta Val	cac His 4180	cgt Arg	ggg Gly	cag Gln	ttc Phe	cgg Arg 4185	gac Asp	cag Gln	caa Gln	gtt Val	13700																	
tct Ser 4190	gtg Val	tgg Trp	aaa Lys	gtc Val	ctg Leu 4195	ttc Phe	tcc Ser	tcc Ser	tac Tyr	ctg Leu 4200	agt Ser	gag Glu	acc Thr	cgc Arg	13745																	
cgg Arg 4205	gag Glu	gag Glu	ctc Leu	ctt Leu	gcc Ala 4210	cag Gln	cac His	ttg Leu	gct Ala	ggc Gly 4215	aag Lys	ctg Leu	ggg Gly	gta Val	13790																	
atg Met 4220	gaa Glu	ctc Leu	gtt Val	tcc Ser	ctc Leu 4225	ctc Leu	acc Thr	caa Gln	atc Ile	atc Ile 4230	gag Glu	gag Glu	aca Thr	gaa Glu	13835																	

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gaa Glu 4235	cgg Arg	ctc Leu	agc Ser	aag Lys	gtg Val 4240	tct Ser	ttc Phe	ccc Pro	ggc Gly	ctg Leu 4245	agg Arg	cga Arg	cag Gln	gtg Val	13880
tcc Ser 4250	gca Ala	tct Ser	gag Glu	ttg Leu	tgt Cys 4255	acc Thr	tct Ser	ggc Gly	atc Ile	ctg Leu 4260	gac Asp	cgg Arg	gac Asp	acc Thr	13925
atg Met 4265	cga Arg	gaa Glu	ctg Leu	gca Ala	cag Gln 4270	ggc Gly	acc Thr	aag Lys	acc Thr	att Ile 4275	cat His	gag Glu	gtg Val	aca Thr	13970
gag Glu 4280	atg Met	gac Asp	tcc Ser	gtc Val	aag Lys 4285	cgc Arg	tac Tyr	ctg Leu	ggg Gly	ggc Gly 4290	tcc Ser	agc Ser	tgc Cys	ata Ile	14015
gcg Ala 4295	ggc Gly	gtc Val	ctg Leu	gtg Val	ccc Pro 4300	gtc Val	cag Gln	gga Gly	gag Glu	cct Pro 4305	ggg Gly	cgc Arg	cag Gln	gag Glu	14060
aag Lys 4310	atg Met	agc Ser	atc Ile	tat Tyr	cag Gln 4315	gcc Ala	atg Met	tgg Trp	aag Lys	gga Gly 4320	gtc Val	ctg Leu	agg Arg	cca Pro	14105
ggc Gly 4325	aca Thr	gcc Ala	ctg Leu	gtg Val	ctg Leu 4330	ctg Leu	gag Glu	gct Ala	cag Gln	gca Ala 4335	gcc Ala	aca Thr	ggc Gly	ttc Phe	14150
atc Ile 4340	atc Ile	gac Asp	cca Pro	gtg Val	aac Asn 4345	aac Asn	cgc Arg	aga Arg	ctg Leu	tct Ser 4350	gtg Val	gag Glu	gag Glu	gcc Ala	14195
gtg Val 4355	gct Ala	gca Ala	ggc Gly	gtg Val	gtg Val 4360	gga Gly	ggc Gly	gag Glu	atc Ile	caa Gln 4365	gag Glu	aag Lys	ctg Leu	ytg Xaa	14240
tct Ser 4370	gct Ala	gag Glu	cgt Arg	gcg Ala	gtc Val 4375	acc Thr	ggg Gly	tac Tyr	acg Thr	gac Asp 4380	ccc Pro	tac Tyr	acc Thr	ggg Gly	14285
gac Asp 4385	cag Gln	atc Ile	tcc Ser	ctc Leu	ttc Phe 4390	cag Gln	gcc Ala	atg Met	cag Gln	agg Arg 4395	gac Asp	ctc Leu	att Ile	gtg Val	14330
aga Arg 4400	gac Asp	cat His	ggc Gly	att Ile	cgt Arg 4405	ttg Leu	ttg Leu	gaa Glu	gcc Ala	cag Gln 4410	att Ile	gcc Ala	acg Thr	ggg Gly	14375
ggc Gly 4415	gtc Val	atc Ile	gac Asp	cct Pro	gtg Val 4420	cac His	agc Ser	cac His	cgt Arg	gtg Val 4425	ccc Pro	gtg Val	gac Asp	gtg Val	14420
gcc Ala 4430	tac Tyr	cag Gln	cgt Arg	ggc Gly	tac Tyr 4435	ttt Phe	gat Asp	gaa Glu	gac Asp	atg Met 4440	aac Asn	agc Ser	att Ile	ttg Leu	14465
gcg Ala 4445	gac Asp	cct Pro	ggg Gly	gac Asp	gac Asp 4450	acc Thr	aag Lys	ggc Gly	ttc Phe	ttt Phe 4455	gac Asp	ccc Pro	aac Asn	act Thr	14510
cac His 4460	gag Glu	aac Asn	ctc Leu	act Thr	tac Tyr 4465	cta Leu	cag Gln	ctg Leu	ctg Leu	cgc Arg 4470	cgc Arg	tgt Cys	gtg Val	cgc Arg	14555
gac Asp 4475	cca Pro	gag Glu	act Thr	ggc Gly	ttc Phe 4480	tac Tyr	atg Met	ctg Leu	cag Gln	ctg Leu 4485	gct Ala	gga Gly	aag Lys	ggc Gly	14600

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tcc Ser 4490	agt Ser	gtg Val	cac His	cac His	ctg Leu 4495	agc Ser	gag Glu	gag Glu	ctg Leu	aga Arg 4500	cgg Arg	gcc Ala	ctg Leu	cgt Arg	14645
gaa Glu 4505	gcc Ala	cgt Arg	gtg Val	acc Thr	cca Pro 4510	ggc Gly	acg Thr	ggc Gly	gac Asp	ttc Phe 4515	cag Gln	ggc Gly	cag Gln	agc Ser	14690
atc Ile 4520	tct Ser	gtc Val	tgg Trp	gag Glu	ctt Leu 4525	ctc Leu	ttc Phe	tac Tyr	cga Arg	gag Glu 4530	gtg Val	cct Pro	gag Glu	agt Ser	14735
ctg Leu 4535	cgc Arg	cag Gln	gac Asp	ctg Leu	ctg Leu 4540	cgt Arg	cgc Arg	tac Tyr	cag Gln	gca Ala 4545	ggg Gly	ggg Gly	ctc Leu	acc Thr	14780
gtt Val 4550	cat His	gac Asp	gtg Val	acc Thr	acc Thr 4555	aca Thr	ctc Leu	acc Thr	tca Ser	ctg Leu 4560	ctg Leu	gcc Ala	cga Arg	gcc Ala	14825
aag Lys 4565	gat Asp	ggg Gly	agc Ser	cca Pro	cgt Arg 4570	grg Xaa	gat Asp	cca Pro	caa Gln	gga Gly 4575	gcc Ala	ctg Leu	ggc Gly	aag Lys	14870
gcc Ala 4580	acc Thr	atg Met	gaa Glu	gta Val	aaa Lys 4585	cgg Arg	ggg Gly	cat His	ctc Leu	cgg Arg 4590	ggc Gly	cac His	gwg Xaa	gtc Val	14915
cca Pro 4595	gtg Val	tgg Trp	gac Asp	att Ile	ctg Leu 4600	aca Thr	tcc Ser	aac Asn	tat Tyr	gtg Val 4605	agc Ser	agg Arg	gac Asp	acc Thr	14960
cgg Arg 4610	aag Lys	gag Glu	ctg Leu	ctg Leu	gcc Ala 4615	cag Gln	ttc Phe	agc Ser	tct Ser	ggg Gly 4620	tcg Ser	ctg Leu	act Thr	ctg Leu	15005
ccc Pro 4625	atg Met	ctg Leu	aag Lys	agg Arg	aga Arg 4630	ctg Leu	acc Thr	acc Thr	att Ile	att Ile 4635	gag Glu	gag Glu	gct Ala	gag Glu	15050
gag Glu 4640	aca Thr	cag Gln	gag Glu	tcc Ser	aag Lys 4645	cca Pro	aag Lys	ccg Pro	aga Arg	gac Asp 4650	gcc Ala	tct Ser	ctt Leu	aag Lys	15095
caa Gln 4655	cag Gln	gac Asp	act Thr	ggg Gly	gcc Ala 4660	aga Arg	ggc Gly	tca Ser	ggg Gly	acc Thr 4665	tcc Ser	cca Pro	gac Asp	gag Glu	15140
gga Gly 4670	gat Asp	gct Ala	cag Gln	gac Asp	agc Ser 4675	tcc Ser	gag Glu	agt Ser	gcc Ala	agg Arg 4680	cag Gln	caa Gln	cag Gln	gag Glu	15185
cag Gln 4685	act Thr	ctg Leu	cgt Arg	gcc Ala	acc Thr 4690	acc Thr	atg Met	cag Gln	gta Val	cac His 4695	cgt Arg	ggg Gly	cag Gln	ttc Phe	15230
cgg Arg 4700	gac Asp	cag Gln	caa Gln	gtt Val	tct Ser 4705	gtg Val	tgg Trp	aaa Lys	gtc Val	ctg Leu 4710	ttc Phe	tcc Ser	tcc Ser	tac Tyr	15275
ctg Leu 4715	agt Ser	gag Glu	acc Thr	cgc Arg	cgg Arg 4720	gag Glu	gag Glu	ctc Leu	ctt Leu	gcc Ala 4725	cag Gln	cac His	ttg Leu	gct Ala	15320
ggc Gly 4730	aag Lys	ctg Leu	ggg Gly	gta Val	atg Met 4735	gaa Glu	ctc Leu	gtt Val	tcc Ser	ctc Leu 4740	ctc Leu	acc Thr	caa Gln	atc Ile	15365
atc	gag	gag	aca	gaa	gaa	cgg	ctc	agc	aag	gtg	tct	ttc	ccc	ggc	15410

Ile 4745	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser	Lys	Val	Ser	Phe	Pro	Gly	
					4750					4755					
ctg Leu 4760	agg Arg	cga Arg	cag Gln	gtg Val	tcc Ser 4765	gca Ala	tct Ser	gag Glu	ttg Leu	tgt Cys 4770	acc Thr	tct Ser	ggc Gly	atc Ile	15455
ctg Leu 4775	gac Asp	cgg Arg	gac Asp	acc Thr	atg Met 4780	cga Arg	gaa Glu	ctg Leu	gca Ala	cag Gln 4785	ggc Gly	acc Thr	aag Lys	acc Thr	15500
att Ile 4790	cat His	gag Glu	gtg Val	aca Thr	gag Glu 4795	atg Met	gac Asp	tcc Ser	gtc Val	aag Lys 4800	cgc Arg	tac Tyr	ctg Leu	ggg Gly	15545
ggc Gly 4805	tcc Ser	agc Ser	tgc Cys	ata Ile	gcg Ala 4810	ggc Gly	gtc Val	ctg Leu	gtg Val	ccc Pro 4815	gtc Val	cag Gln	gga Gly	gag Glu	15590
cct Pro 4820	ggg Gly	cgc Arg	cag Gln	gag Glu	aag Lys 4825	atg Met	agc Ser	atc Ile	tat Tyr	cag Gln 4830	gcc Ala	atg Met	tgg Trp	aag Lys	15635
gga Gly 4835	gtc Val	ctg Leu	agg Arg	cca Pro	ggc Gly 4840	aca Thr	gcc Ala	ctg Leu	gtg Val	ctg Leu 4845	ctg Leu	gag Glu	gct Ala	cag Gln	15680
gca Ala 4850	gcc Ala	aca Thr	ggc Gly	ttc Phe	atc Ile 4855	atc Ile	gac Asp	cca Pro	gtg Val	aac Asn 4860	aac Asn	cgc Arg	aga Arg	ctg Leu	15725
tct Ser 4865	gtg Val	gag Glu	gag Glu	gcc Ala	gtg Val 4870	gct Ala	gca Ala	ggc Gly	gtg Val	gtg Val 4875	gga Gly	ggc Gly	gag Glu	atc Ile	15770
caa Gln 4880	gag Glu	aag Lys	ctg Leu	ytg Xaa	tct Ser 4885	gct Ala	gag Glu	cgt Arg	gcg Ala	gtc Val 4890	acc Thr	ggg Gly	tac Tyr	acg Thr	15815
gac Asp 4895	ccc Pro	tac Tyr	acc Thr	ggg Gly	gac Asp 4900	cag Gln	atc Ile	tcc Ser	ctc Leu	ttc Phe 4905	cag Gln	gcc Ala	atg Met	cag Gln	15860
agg Arg 4910	gac Asp	ctc Leu	att Ile	gtg Val	aga Arg 4915	gac Asp	cat His	ggc Gly	att Ile	cgt Arg 4920	ttg Leu	ttg Leu	gaa Glu	gcc Ala	15905
cag Gln 4925	att Ile	gcc Ala	acg Thr	ggg Gly	ggc Gly 4930	gtc Val	atc Ile	gac Asp	cct Pro	gtg Val 4935	cac His	agc Ser	cac His	cgt Arg	15950
gtg Val 4940	ccc Pro	gtg Val	gac Asp	gtg Val	gcc Ala 4945	tac Tyr	cag Gln	cgt Arg	ggc Gly	tac Tyr 4950	ttt Phe	gat Asp	gaa Glu	gac Asp	15995
atg Met 4955	aac Asn	agc Ser	att Ile	ttg Leu	gcg Ala 4960	gac Asp	cct Pro	ggg Gly	gac Asp	gac Asp 4965	acc Thr	aag Lys	ggc Gly	ttc Phe	16040
ttt Phe 4970	gac Asp	ccc Pro	aac Asn	act Thr	cac His 4975	gag Glu	aac Asn	ctc Leu	act Thr	tac Tyr 4980	cta Leu	cag Gln	ctg Leu	ctg Leu	16085
cgc Arg 4985	cgc Arg	tgt Cys	gtg Val	cgc Arg	gac Asp 4990	cca Pro	gag Glu	act Thr	ggc Gly	ttc Phe 4995	tac Tyr	atg Met	ctg Leu	cag Gln	16130
ctg Leu	gct Ala	gga Gly	aag Lys	ggc Gly	tcc Ser	agt Ser	gtg Val	cac His	cac His	ctg Leu	agc Ser	gag Glu	gag Glu	ctg Leu	16175

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5000		5005		5010														
aga	cgg	gcc	ctg	cgt	gaa	gcc	cgt	gtg	acc	cca	ggc	acg	ggc	gac				16220
Arg	Arg	Ala	Leu	Arg	Glu	Ala	Arg	Val	Thr	Pro	Gly	Thr	Gly	Asp				
5015					5020					5025								
ttc	cag	ggc	cag	agc	atc	tct	gtc	tgg	gag	ctt	ctc	ttc	tac	cga				16265
Phe	Gln	Gly	Gln	Ser	Ile	Ser	Val	Trp	Glu	Leu	Leu	Phe	Tyr	Arg				
5030					5035					5040								
gag	gtg	cct	gag	agt	ctg	cgc	cag	gac	ctg	ctg	cgt	cgc	tac	cag				16310
Glu	Val	Pro	Glu	Ser	Leu	Arg	Gln	Asp	Leu	Leu	Arg	Arg	Tyr	Gln				
5045					5050					5055								
gca	ggg	ggg	ctc	acc	gtt	cat	gac	gtg	acc	acc	aca	ctc	acc	tca				16355
Ala	Gly	Gly	Leu	Thr	Val	His	Asp	Val	Thr	Thr	Thr	Leu	Thr	Ser				
5060					5065					5070								
ctg	ctg	gcc	cga	gcc	aag	gat	ggg	agc	cca	cgt	grg	gat	cca	caa				16400
Leu	Leu	Ala	Arg	Ala	Lys	Asp	Gly	Ser	Pro	Arg	Xaa	Asp	Pro	Gln				
5075					5080					5085								
gga	gcc	ctg	ggc	aag	gcc	acc	atg	gaa	gta	aaa	cgg	ggg	cat	ctc				16445
Gly	Ala	Leu	Gly	Lys	Ala	Thr	Met	Glu	Val	Lys	Arg	Gly	His	Leu				
5090					5095					5100								
cgg	ggc	cac	gwg	gtc	cca	gtg	tgg	gac	att	ctg	aca	tcc	aac	tat				16490
Arg	Gly	His	Xaa	Val	Pro	Val	Trp	Asp	Ile	Leu	Thr	Ser	Asn	Tyr				
5105					5110					5115								
gtg	agc	agg	gac	acc	cgg	aag	gag	ctg	ctg	gcc	cag	ttc	agc	tct				16535
Val	Ser	Arg	Asp	Thr	Arg	Lys	Glu	Leu	Leu	Ala	Gln	Phe	Ser	Ser				
5120					5125					5130								
ggg	tcg	ctg	act	ctg	ccc	atg	ctg	aag	agg	aga	ctg	acc	acc	att				16580
Gly	Ser	Leu	Thr	Leu	Pro	Met	Leu	Lys	Arg	Arg	Leu	Thr	Thr	Ile				
5135					5140					5145								
att	gag	gag	gct	gag	gag	aca	cag	gag	tcc	aag	cca	aag	ccg	aga				16625
Ile	Glu	Glu	Ala	Glu	Glu	Thr	Gln	Glu	Ser	Lys	Pro	Lys	Pro	Arg				
5150					5155					5160								
gac	gcc	tct	ctt	aag	caa	cag	gac	act	ggg	gcc	aga	ggc	tca	ggg				16670
Asp	Ala	Ser	Leu	Lys	Gln	Gln	Asp	Thr	Gly	Ala	Arg	Gly	Ser	Gly				
5165					5170					5175								
acc	tcc	cca	gac	gag	gga	gat	gct	cag	gac	agc	tcc	gag	agt	gcc				16715
Thr	Ser	Pro	Asp	Glu	Gly	Asp	Ala	Gln	Asp	Ser	Ser	Glu	Ser	Ala				
5180					5185					5190								
agg	cag	caa	cag	gag	cag	act	ctg	cgt	gcc	acc	acc	atg	cag	gta				16760
Arg	Gln	Gln	Gln	Glu	Gln	Thr	Leu	Arg	Ala	Thr	Thr	Met	Gln	Val				
5195					5200					5205								
cac	cgt	ggg	cag	ttc	cgg	gac	cag	caa	gtt	tct	gtg	tgg	aaa	gtc				16805
His	Arg	Gly	Gln	Phe	Arg	Asp	Gln	Gln	Val	Ser	Val	Trp	Lys	Val				
5210					5215					5220								
ctg	ttc	tcc	tcc	tac	ctg	agt	gag	acc	cgc	cgg	gag	gag	ctc	ctt				16850
Leu	Phe	Ser	Ser	Tyr	Leu	Ser	Glu	Thr	Arg	Arg	Glu	Glu	Leu	Leu				
5225					5230					5235								
gcc	cag	cac	ttg	gct	ggc	aag	ctg	ggg	gta	atg	gaa	ctc	gtt	tcc				16895
Ala	Gln	His	Leu	Ala	Gly	Lys	Leu	Gly	Val	Met	Glu	Leu	Val	Ser				
5240					5245					5250								
ctc	ctc	acc	caa	atc	atc	gag	gag	aca	gaa	gaa	cgg	ctc	agc	aag				16940
Leu	Leu	Thr	Gln	Ile	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser	Lys				
5255					5260					5265								

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gtg Val 5270	tct Ser	ttc Phe	ccc Pro	ggc Gly	ctg Leu 5275	agg Arg	cga Arg	cag Gln	gtg Val	tcc Ser 5280	gca Ala	tct Ser	gag Glu	ttg Leu	16985
tgt Cys 5285	acc Thr	tct Ser	ggc Gly	atc Ile	ctg Leu 5290	gac Asp	cgg Arg	gac Asp	acc Thr	atg Met 5295	cga Arg	gaa Glu	ctg Leu	gca Ala	17030
cag Gln 5300	ggc Gly	acc Thr	aag Lys	acc Thr	att Ile 5305	cat His	gag Glu	gtg Val	aca Thr	gag Glu 5310	atg Met	gac Asp	tcc Ser	gtc Val	17075
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cag Gln 5345	gcc Ala	atg Met	tgg Trp	aag Lys	gga Gly 5350	gtc Val	ctg Leu	agg Arg	cca Pro	ggc Gly 5355	aca Thr	gcc Ala	ctg Leu	gtg Val	17210
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Thr Pro Ser Arg Pro Gln Ala Glu Ala Ala Leu Pro Thr Thr Ala Arg
35          40          45

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Tyr Ala Ala Ile Lys Gln Gly Leu Leu Pro Thr Gly Leu Gly Leu Thr  
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Leu Leu Glu Ala Gln Ala Ala Thr Gly Gly Leu Val Asp Leu Ala Gln  
85 90 95

Gly Gln Leu Leu Pro Val Ser Glu Ala Leu Arg Arg Gly Leu Val Gly  
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Leu Glu Leu Lys Glu Lys Leu Leu Ala Ala Glu Arg Ala Val Thr Gly  
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Tyr Pro Asp Pro Tyr Gly Gly Glu Lys Leu Ser Leu Phe Gln Ala Ile  
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Lys Lys Glu Val Val Asp Arg Thr Leu Gly Trp Arg Leu Leu Glu Ala  
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Gln Leu Ala Thr Gly Gly Leu Val Asp Pro Thr Gln Gly Val Gln Val  
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Leu Ser Leu Val Glu Ser Glu Pro Ser Met Gly Thr Pro Gly Phe Ser  
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Cys Val Gln Asp Pro Ser Ser Gly Leu Pro Leu Leu Pro Leu Lys Thr  
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Leu Val Val Ser Asp Val Gly Thr Arg Pro Glu Val Arg Arg Tyr Leu  
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Ile Ala Leu Gln Leu Leu Glu Ala Gln Ala Ala Thr Arg Thr Leu Val  
Seite 793

His Pro Thr Thr Gly Gln Arg Leu Trp Val Glu Glu Ala Val Lys Ala  
 340 345 350

Gly Leu Val Gly Pro Glu Leu His Glu Gln Leu Leu Val Ala Glu Gln  
 355 360 365

Ala Val Thr Gly Tyr Tyr Asp Pro Phe Ser Ser Ser Arg Ile Pro Val  
 370 375 380

Phe Gln Ala Met Lys Lys Gly Leu Val Asp Gln Pro Leu Ala Leu Arg  
 385 390 400

Leu Leu Asp Ala Gln Leu Ala Thr Gly Gly Leu Ile Cys Pro Ala Arg  
 405 410 415

Arg Phe Arg Leu Pro Leu Glu Ala Ala Leu Arg Phe Gly Cys Leu Asp  
 420 425 430

Glu Glu Thr Arg Gln Arg Leu Ser Gln Ala Met Gly Phe Ser Asp Pro  
 435 440 445

Thr Thr His Asp Arg Leu Gly Tyr Glu Gln Leu Leu Ala Leu Ser Val  
 450 455 460

Thr Asp Pro Glu Thr Gly Leu Ala Phe Leu Pro Leu Pro Gly Met Ser  
 465 470 475 480

His Ala Asn Glu Pro Gln Gly Pro Thr Phe Ile Asp His Cys Thr Arg  
 485 490 495

Gln Ala Leu Ser Lys Ala Thr Thr Ser Ile Ser Val Gly Arg Tyr Gln  
 500 505 510

Gly Arg Pro Val Ser Leu Trp Glu Leu Leu Phe Ser Glu Ser Val Pro  
 515 520 525

Val Lys Lys Arg Ala Met Leu Ala Gln Arg His Gln Glu Gly Ala Leu  
 530 535 540

Ser Val Glu Glu Leu Ala Ala Glu Leu Lys Asn Ile Val Glu Gln Ala  
 545 550 555 560

Ala Ala Thr Ala Lys Val Thr Phe Ala Gly Leu Arg Asp Thr Val Thr  
 565 570 575

Pro Gly Glu Leu Leu Lys Ala Glu Ile Ile Asn Gln Asp Leu Phe Glu  
 580 585 590

Gln Leu Glu Arg Gly Gln Thr Ser Ala Gln Asp Val Gly Ser Leu Asp  
 595 600 605

Ser Val Gln Arg Tyr Leu Gln Gly Thr Gly Ser Ile Ala Gly Leu Leu  
610 615 620

Leu Pro Asp Ser Gln Glu Arg Leu Ser Ile Tyr Glu Ala Arg Ser Lys  
625 630 635 640

Gly Leu Leu Arg Pro Gly Thr Ala Leu Ile Leu Leu Glu Ala Gln Ala  
645 650 655

Ala Thr Gly Phe Ile Ile Asp Pro Lys Glu Asn Lys Arg Tyr Ser Val  
660 665 670

Glu Glu Ala Leu Arg Ala Gly Val Ile Gly Pro Asp Val Tyr Ala Lys  
675 680 685

Leu Leu Ser Ala Glu His Ala Val Thr Gly Tyr Thr Asp Pro Tyr Ser  
690 695 700

Gly Glu Gln Ile Ser Leu Phe Gln Ala Met Gln Arg Asp Leu Ile Val  
705 710 715 720

Arg Asp His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly  
725 730 735

Val Ile Asp Pro Val His Ser His Arg Val Pro Val Asp Val Ala Tyr  
740 745 750

Gln Arg Gly Tyr Phe Asp Gln Ile Leu Asn Ser Ile Leu Leu Asp Pro  
755 760 765

Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr His Glu Asn Leu  
770 775 780

Thr Tyr Leu Gln Leu Leu Glu Arg Cys Val His Asp Ser Glu Thr Gly  
785 790 795 800

Leu His Leu Leu Pro Leu Ser Ser Thr Arg Pro Gln Leu Val Asp Ser  
805 810 815

Ser Thr Arg Gln Ala Phe Gln Lys Leu Leu Leu Ser Val Lys Tyr Gly  
820 825 830

Arg Phe Arg Gly Gln Arg Val Ser Ala Trp Glu Leu Val Asn Ser Glu  
835 840 845

Tyr Phe Thr Glu Asp Arg Arg Arg Gln Leu Leu Gln Arg Tyr Arg Gln  
850 855 860

Arg Lys Ile Thr Leu Glu Gln Val Thr Gln Leu Leu Glu Lys Glu Met  
865 870 875 880

Arg Arg Trp Thr Asp Ile Thr Leu Pro Ala Leu Gln Gly Gln Val Thr  
885 890 895

Ala Tyr Gln Leu Leu Glu Ala His Ile Ile Asn Gln Glu Leu Leu Asp  
900 905 910

Gln Val Leu Thr Gly Thr Ile Ser Pro Asp Ala Leu Leu Gln Val Gly  
915 920 925

Asp Val His Arg Tyr Leu Arg Gly Ser Gly Thr Val Gly Gly Val Leu  
930 935 940

Leu Lys Pro Ser Asn Gln Arg Ile Ser Leu Tyr Gln Ala Met Lys Gln  
945 950 955 960

Lys Leu Leu Pro Pro Ser Thr Ala Leu Ala Leu Leu Glu Ala Gln Ala  
965 970 975

Ala Thr Gly Thr Ile Thr Asp Pro Cys Ser Met Glu Thr Leu Ser Val  
980 985 990

Asp Glu Ala Val Cys Arg Gly Val Val Gly Ala Glu Val Tyr Gly Lys  
995 1000 1005

Leu Lys Arg Ala Glu His Ser Ile Thr Gly Tyr Arg Asp Pro Phe  
1010 1015 1020

Ser Gly Lys Lys Val Ser Leu Phe Arg Ala Met Lys Lys Gly Leu  
1025 1030 1035

Val Pro Val Glu Gln Ala Thr Arg Leu Leu Glu Ala Gln Val Ser  
1040 1045 1050

Thr Gly Gly Val Val Asp Pro Thr Thr His Leu His Leu Pro Met  
1055 1060 1065

Pro Val Ala Val Gln Arg Gly Cys Ile Asp Arg Glu Met Glu Ala  
1070 1075 1080

Ala Leu Ser Arg Ser Pro Glu Thr Phe Pro Thr Pro Asp Gly Arg  
1085 1090 1095

Gly His Thr Ser Tyr Ala Gln Leu Leu Glu His Cys Leu Gln Asp  
1100 1105 1110

Lys Ala Ser Gly Leu His Leu Leu Pro Leu Thr Glu Asp Ala Pro  
1115 1120 1125

Asn Val Pro Thr Asp Thr Gln Ile Gln Glu Thr Leu Gln Ala Ser  
1130 1135 1140



Ala Gly Thr Glu Asp Gly Leu Ser Leu Trp Asp Leu Leu Thr Ser  
1145 1150 1155

Cys His Phe Thr Glu Glu Gln Arg Arg Gly Tyr Leu Glu Asp Val  
1160 1165 1170

Lys Val Gly Lys Ile Ser Val Pro Gln Leu Gln Asn Thr Val Arg  
1175 1180 1185

Ser Trp Val His Ser Ala Lys Leu Leu Ala Arg Ala Arg Ile Thr  
1190 1195 1200

Val Pro Gly Pro Arg Gly Glu Val Pro Ala Thr Trp Leu Arg Asp  
1205 1210 1215

Ala Gly Ile Ile Thr Gln Glu Thr Leu Glu Ala Leu Ala Gln Gly  
1220 1225 1230

Met Gln Ser Pro Asp Glu Val Ala Lys Gln Pro Thr Val Lys Val  
1235 1240 1245

Cys Leu Trp Gly Thr Gly Cys Val Ala Gly Val Leu Leu Gln Pro  
1250 1255 1260

Ser Gly Thr Lys Leu Ser Ile Ala Gln Ala Val Arg Asp Gly Leu  
1265 1270 1275

Leu Pro Thr Gly Leu Gly Gln Gln Leu Leu Glu Ala Gln Val Ala  
1280 1285 1290

Ser Gly Phe Leu Val Asn Pro Leu Thr Asn Gln Arg Leu Ser Val  
1295 1300 1305

Glu Gly Ala Val Lys Ala Gly Leu Val Gly Met Glu Gln Ser Glu  
1310 1315 1320

His Leu Arg Gln Val Glu Lys Ala Val Thr Gly Tyr Ser Asp Pro  
1325 1330 1335

Phe Ser Gly Gly Ser Leu Ser Leu Trp Gln Ala Met Glu Lys Gly  
1340 1345 1350

Leu Val Thr Gln Ser Glu Ala Phe Pro Leu Leu Gln Val Gln Leu  
1355 1360 1365

Ala Thr Gly Gly Val Val Asp Pro Val His Gly Val His Leu Pro  
1370 1375 1380

Gln Glu Val Ala Tyr Lys Leu Gly Leu Leu Asp Glu Gln Thr Ser  
1385 1390 1395

Arg Val Leu Thr Ala Thr Gly Lys Glu Asn Lys Leu Phe Phe Asp

	1400						1405								1410
Pro	Asn 1415	Ser	Arg	Glu	Lys	Val 1420	Thr	Tyr	Gln	Gln	Leu 1425	Arg	Glu	Leu	
Cys	Val 1430	Leu	Asp	Ala	Asp	Thr 1435	Gly	Leu	Trp	Leu	Leu 1440	Pro	Leu	Pro	
Gln	Gly 1445	Thr	Val	Leu	Glu	Val 1450	Asp	Asp	His	Thr	Ala 1455	Val	Ala	Leu	
Arg	Ala 1460	Met	Lys	Val	Pro	Ile 1465	Asn	Met	Gly	Arg	Phe 1470	Gln	Gly	His	
Ser	Val 1475	Ser	Leu	Trp	Asp	Leu 1480	Leu	His	Ser	Glu	Tyr 1485	Val	Gly	Ala	
Glu	Lys 1490	Arg	Arg	Glu	Leu	Val 1495	Ala	Leu	Cys	Cys	Ser 1500	Gly	Arg	Ala	
Ala	Ala 1505	Leu	Arg	Gln	Val	Ile 1510	Gly	Met	Leu	Thr	Thr 1515	Leu	Val	Glu	
Ala	Ala 1520	Glu	Lys	Gln	Pro	Ser 1525	Gln	Ala	Thr	Phe	Lys 1530	Gly	Leu	Arg	
Lys	Gln 1535	Val	Ser	Ala	Gly	Asp 1540	Leu	Phe	Arg	Ser	Gln 1545	Leu	Ile	Thr	
Lys	Gln 1550	Thr	Leu	Asp	Glu	Leu 1555	Asn	Gln	Gly	Lys	Arg 1560	Thr	Val	Gln	
Glu	Val 1565	Thr	Glu	Met	Asp	Ser 1570	Val	Arg	Arg	Ser	Leu 1575	Glu	Gly	Gly	
Asn	Phe 1580	Ile	Ala	Gly	Val	Leu 1585	Ile	Gln	Asp	Thr	Lys 1590	Glu	Lys	Met	
Ser	Ile 1595	Pro	Glu	Ala	Leu	Arg 1600	Arg	His	Ile	Leu	Arg 1605	Pro	Gly	Thr	
Ala	Leu 1610	Val	Leu	Leu	Glu	Ala 1615	Gln	Ala	Ala	Thr	Gly 1620	Phe	Ile	Ile	
Asp	Pro 1625	Val	Glu	Asn	Arg	Lys 1630	Leu	Thr	Val	Glu	Gln 1635	Ala	Phe	Gln	
Ala	Gly 1640	Met	Phe	Gly	Lys	Glu 1645	Thr	Tyr	Met	Lys	Leu 1650	Leu	Ser	Ala	
Glu	Arg 1655	Ala	Val	Thr	Gly	Tyr 1660	Thr	Asp	Pro	Tyr	Thr 1665	Gly	Glu	Gln	

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Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile	Val	Arg	Asp
	1670					1675					1680			
His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Ile
	1685					1690					1695			
Ile	Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr
	1700					1705					1710			
Gln	Arg	Gly	Tyr	Phe	Asn	Glu	Glu	Met	Asn	Arg	Ile	Leu	Ser	Asp
	1715					1720					1725			
Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu
	1730					1735					1740			
Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Glu	Arg	Cys	Val	Glu	Asp	Pro
	1745					1750					1755			
Glu	Thr	Gly	Leu	Tyr	Met	Leu	Glu	Ile	Val	Lys	Lys	Gly	Glu	Thr
	1760					1765					1770			
Tyr	Thr	Tyr	Ile	Asp	Glu	Ala	Thr	Arg	Gln	Ala	Leu	Thr	Ser	Arg
	1775					1780					1785			
Thr	Val	Lys	Met	Tyr	Val	Gly	Lys	Phe	Ala	Gly	Gln	Thr	Val	Ser
	1790					1795					1800			
Val	Trp	Asp	Leu	Leu	Ser	Ser	Gln	Tyr	Phe	Thr	Glu	Gly	Arg	Arg
	1805					1810					1815			
Arg	Lys	Leu	Leu	Arg	Glu	Tyr	Arg	Ala	Gln	Asn	Ile	Gly	Leu	Glu
	1820					1825					1830			
Asn	Leu	Leu	Glu	Val	Ile	Thr	Ser	Thr	Val	Glu	Glu	Thr	Glu	Lys
	1835					1840					1845			
Gln	Ser	Gln	Ile	Phe	Lys	Val	Pro	Gly	Ile	His	Gly	Asp	Val	Thr
	1850					1855					1860			
Ala	Ala	Glu	Leu	Phe	Asn	Ser	Gly	Ile	Leu	Asn	Lys	Lys	Thr	Leu
	1865					1870					1875			
Asp	Ala	Leu	Arg	Ser	Gly	Asp	Arg	Gly	Phe	Gln	Asp	Leu	Arg	Trp
	1880					1885					1890			
Leu	Glu	Asp	Val	Arg	Val	Tyr	Leu	Glu	Gly	Ser	Asn	Tyr	Ile	Ala
	1895					1900					1905			
Gly	Val	Ile	Ala	Pro	Leu	Thr	Gln	Lys	Val	Met	Ser	Phe	Tyr	Glu
	1910					1915					1920			

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Ala	Ser	Arg	Glu	Glu	Leu	Ile	Pro	Ala	Gly	Phe	Ala	Ala	Gln	Met
	1925					1930					1935			
Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Tyr	Leu	Met	Asp	Pro	Cys	Thr
	1940					1945					1950			
Asn	Gln	Arg	Leu	Cys	Val	Asp	Glu	Ala	Ile	Ala	Ala	Gly	Leu	Val
	1955					1960					1965			
Gly	Glu	Asp	Leu	Arg	Glu	Arg	Leu	Val	Asn	Ala	Glu	Met	Ala	Ala
	1970					1975					1980			
Lys	Gly	Tyr	Lys	Asp	Pro	Ala	Thr	Gly	Glu	Thr	Ile	Pro	Leu	Tyr
	1985					1990					1995			
Gln	Ala	Met	Glu	Arg	Lys	Leu	Val	Gly	Arg	Glu	Glu	Ala	Leu	Arg
	2000					2005					2010			
Leu	Leu	Glu	Val	Gln	Val	Ala	Thr	Gly	Gly	Val	Ile	Asp	Pro	Arg
	2015					2020					2025			
His	His	His	Arg	Val	Pro	Leu	Asp	Thr	Ala	Cys	Gln	Arg	Gly	Cys
	2030					2035					2040			
Met	Cys	Asp	Asp	Ser	Leu	Val	Leu	Ile	Ala	Asp	Gln	Lys	His	Met
	2045					2050					2055			
Arg	Lys	Arg	Phe	Val	Asp	Pro	Asn	Thr	Gln	Glu	Lys	Val	Thr	Tyr
	2060					2065					2070			
Gln	Glu	Leu	Gln	Asp	Arg	Cys	Gln	Arg	Glu	Glu	Lys	Ser	Gly	Trp
	2075					2080					2085			
Ala	Leu	Phe	Pro	Val	Val	Lys	Asp	Lys	Lys	Asp	Ile	Glu	Tyr	Val
	2090					2095					2100			
Asp	Glu	Ala	Thr	Lys	Arg	Ala	Leu	Glu	Ala	Glu	Gln	Val	Glu	Val
	2105					2110					2115			
Thr	Val	Gly	Arg	Tyr	Arg	Gly	Gln	Arg	Arg	Ser	Val	Trp	Glu	Leu
	2120					2125					2130			
Leu	Asn	Ser	Glu	Tyr	Val	Ser	Glu	Glu	Lys	Lys	Met	Glu	Leu	Val
	2135					2140					2145			
Arg	Leu	Tyr	Lys	Glu	Asp	Thr	Thr	Arg	Ala	Leu	Gln	Lys	Val	Val
	2150					2155					2160			
Glu	Leu	Ile	Leu	Gln	Met	Ile	Ala	Asp	Lys	Glu	Arg	Arg	Ser	Arg
	2165					2170					2175			

Gln	Leu	Trp	Phe	Arg	Gly	Leu	Arg	Thr	Gln	Val	Thr	Ala	Glu	Glu
	2180					2185					2190			
Leu	Leu	Arg	Ser	Glu	Val	Ile	Thr	Lys	Gln	Thr	Leu	Glu	Asp	Leu
	2195					2200					2205			
Glu	Glu	Gly	Arg	Thr	Thr	Val	Asp	Gln	Ile	Glu	Arg	Lys	Glu	Asp
	2210					2215					2220			
Val	Lys	Arg	Tyr	Leu	Lys	Gly	Thr	Ser	Cys	Ile	Ala	Gly	Val	Leu
	2225					2230					2235			
Val	Pro	Val	Gln	Gly	Glu	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile
	2240					2245					2250			
Tyr	Gln	Ala	Met	Trp	Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu
	2255					2260					2265			
Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro
	2270					2275					2280			
Val	Asn	Asn	Arg	Arg	Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly
	2285					2290					2295			
Val	Val	Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu	Leu	Ser	Ala	Glu	Arg
	2300					2305					2310			
Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Thr	Gly	Asp	Gln	Ile	Ser
	2315					2320					2325			
Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile	Val	Arg	Asp	His	Gly
	2330					2335					2340			
Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp
	2345					2350					2355			
Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg
	2360					2365					2370			
Gly	Tyr	Phe	Asp	Glu	Asp	Met	Asn	Ser	Ile	Leu	Ala	Asp	Pro	Gly
	2375					2380					2385			
Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu
	2390					2395					2400			
Thr	Tyr	Leu	Gln	Leu	Leu	Arg	Arg	Cys	Val	Arg	Asp	Pro	Glu	Thr
	2405					2410					2415			
Gly	Phe	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Lys	Gly	Ser	Ser	Val	His
	2420					2425					2430			
His	Leu	Ser	Glu	Glu	Leu	Arg	Arg	Ala	Leu	Arg	Glu	Ala	Arg	Val

2435

2440

2445

Thr Pro Gly Thr Gly Asp Phe Gln Gly Gln Ser Ile Ser Val Trp  
2450 2455 2460

Glu Leu Leu Phe Tyr Arg Glu Val Pro Glu Ser Leu Arg Gln Asp  
2465 2470 2475

Leu Leu Arg Cys Tyr Gln Ala Gly Gly Leu Thr Val His Asp Val  
2480 2485 2490

Thr Thr Thr Leu Thr Ser Leu Leu Ala Arg Ala Lys Asp Gly Ser  
2495 2500 2505

Pro Arg Gly Asp Pro Gln Gly Ala Leu Gly Lys Ala Thr Met Glu  
2510 2515 2520

Val Lys Arg Gly His Leu Arg Gly His Glu Val Pro Val Trp Asp  
2525 2530 2535

Ile Leu Thr Ser Asn Tyr Val Ser Arg Asp Thr Arg Lys Glu Leu  
2540 2545 2550

Leu Ala Gln Phe Ser Ser Gly Ser Leu Thr Leu Pro Met Leu Lys  
2555 2560 2565

Arg Arg Leu Thr Thr Ile Ile Glu Glu Ala Glu Glu Thr Gln Glu  
2570 2575 2580

Ser Lys Pro Lys Pro Arg Asp Ala Ser Leu Lys Gln Gln Asp Thr  
2585 2590 2595

Gly Ala Arg Gly Ser Gly Thr Ser Pro Asp Glu Gly Asp Ala Gln  
2600 2605 2610

Asp Ser Ser Glu Ser Ala Arg Gln Gln Gln Glu Gln Thr Leu Arg  
2615 2620 2625

Ala Thr Thr Met Gln Val His Arg Gly Gln Phe Arg Asp Gln Gln  
2630 2635 2640

Val Ser Val Trp Lys Val Leu Phe Ser Ser Tyr Leu Ser Glu Thr  
2645 2650 2655

Arg Arg Glu Glu Leu Leu Ala Gln His Leu Ala Gly Lys Leu Gly  
2660 2665 2670

Val Met Glu Leu Val Ser Leu Leu Thr Gln Ile Ile Glu Glu Thr  
2675 2680 2685

Glu Glu Arg Leu Ser Lys Val Ser Phe Pro Gly Leu Arg Arg Gln  
2690 2695 2700

Val	Ser	Ala	Ser	Glu	Leu	Cys	Thr	Ser	Gly	Ile	Leu	Asp	Arg	Asp
	2705					2710					2715			
Thr	Met	Arg	Glu	Leu	Ala	Gln	Gly	Thr	Lys	Thr	Ile	His	Glu	Val
	2720					2725					2730			
Thr	Glu	Met	Asp	Ser	Val	Lys	Arg	Tyr	Leu	Gly	Gly	Ser	Ser	Cys
	2735					2740					2745			
Ile	Ala	Gly	Val	Leu	Val	Pro	Val	Gln	Gly	Glu	Pro	Gly	Arg	Gln
	2750					2755					2760			
Glu	Lys	Met	Ser	Ile	Tyr	Gln	Ala	Met	Trp	Lys	Gly	Val	Leu	Arg
	2765					2770					2775			
Pro	Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly
	2780					2785					2790			
Phe	Ile	Ile	Asp	Pro	Val	Asn	Asn	Arg	Arg	Leu	Ser	Val	Glu	Glu
	2795					2800					2805			
Ala	Val	Ala	Ala	Gly	Val	Val	Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu
	2810					2815					2820			
Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Thr
	2825					2830					2835			
Gly	Asp	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile
	2840					2845					2850			
Val	Arg	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr
	2855					2860					2865			
Gly	Gly	Val	Ile	Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp
	2870					2875					2880			
Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Asp	Glu	Asp	Met	Asn	Ser	Ile
	2885					2890					2895			
Leu	Ala	Asp	Pro	Gly	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn
	2900					2905					2910			
Thr	His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Arg	Arg	Cys	Val
	2915					2920					2925			
Arg	Asp	Pro	Glu	Thr	Gly	Phe	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Lys
	2930					2935					2940			
Gly	Ser	Ser	Val	His	His	Leu	Ser	Glu	Glu	Leu	Arg	Arg	Ala	Leu
	2945					2950					2955			

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Arg	Glu	Ala	Arg	Val	Thr	Pro	Gly	Thr	Gly	Asp	Phe	Gln	Gly	Gln
	2960					2965					2970			
Ser	Ile	Ser	Val	Trp	Glu	Leu	Leu	Phe	Tyr	Arg	Glu	Val	Pro	Glu
	2975					2980					2985			
Ser	Leu	Arg	Gln	Asp	Leu	Leu	Arg	Arg	Tyr	Gln	Ala	Gly	Gly	Leu
	2990					2995					3000			
Thr	Val	His	Asp	Val	Thr	Thr	Thr	Leu	Thr	Ser	Leu	Leu	Ala	Arg
	3005					3010					3015			
Ala	Lys	Asp	Gly	Ser	Pro	Arg	Xaa	Asp	Pro	Gln	Gly	Ala	Leu	Gly
	3020					3025					3030			
Lys	Ala	Thr	Met	Glu	Val	Lys	Arg	Gly	His	Leu	Arg	Gly	His	Xaa
	3035					3040					3045			
Val	Pro	Val	Trp	Asp	Ile	Leu	Thr	Ser	Asn	Tyr	Val	Ser	Arg	Asp
	3050					3055					3060			
Thr	Arg	Lys	Glu	Leu	Leu	Ala	Gln	Phe	Ser	Ser	Gly	Ser	Leu	Thr
	3065					3070					3075			
Leu	Pro	Met	Leu	Lys	Arg	Arg	Leu	Thr	Thr	Ile	Ile	Glu	Glu	Ala
	3080					3085					3090			
Glu	Glu	Thr	Gln	Glu	Ser	Lys	Pro	Lys	Pro	Arg	Asp	Ala	Ser	Leu
	3095					3100					3105			
Lys	Gln	Gln	Asp	Thr	Gly	Ala	Arg	Gly	Ser	Gly	Thr	Ser	Pro	Asp
	3110					3115					3120			
Glu	Gly	Asp	Ala	Gln	Asp	Ser	Ser	Glu	Ser	Ala	Arg	Gln	Gln	Gln
	3125					3130					3135			
Glu	Gln	Thr	Leu	Arg	Ala	Thr	Thr	Met	Gln	Val	His	Arg	Gly	Gln
	3140					3145					3150			
Phe	Arg	Asp	Gln	Gln	Val	Ser	Val	Trp	Lys	Val	Leu	Phe	Ser	Ser
	3155					3160					3165			
Tyr	Leu	Ser	Glu	Thr	Arg	Arg	Glu	Glu	Leu	Leu	Ala	Gln	His	Leu
	3170					3175					3180			
Ala	Gly	Lys	Leu	Gly	Val	Met	Glu	Leu	Val	Ser	Leu	Leu	Thr	Gln
	3185					3190					3195			
Ile	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser	Lys	Val	Ser	Phe	Pro
	3200					3205					3210			



Gly	Leu	Arg	Arg	Gln	Val	Ser	Ala	Ser	Glu	Leu	Cys	Thr	Ser	Gly
	3215					3220					3225			
Ile	Leu	Asp	Arg	Asp	Thr	Met	Arg	Glu	Leu	Ala	Gln	Gly	Thr	Lys
	3230					3235					3240			
Thr	Ile	His	Glu	Val	Thr	Glu	Met	Asp	Ser	Val	Lys	Arg	Tyr	Leu
	3245					3250					3255			
Gly	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Val	Leu	Val	Pro	Val	Gln	Gly
	3260					3265					3270			
Glu	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile	Tyr	Gln	Ala	Met	Trp
	3275					3280					3285			
Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala
	3290					3295					3300			
Gln	Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro	Val	Asn	Asn	Arg	Arg
	3305					3310					3315			
Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly	Val	Val	Gly	Gly	Glu
	3320					3325					3330			
Ile	Gln	Glu	Lys	Leu	Xaa	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr
	3335					3340					3345			
Thr	Asp	Pro	Tyr	Thr	Gly	Asp	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met
	3350					3355					3360			
Gln	Arg	Asp	Leu	Ile	Val	Arg	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu
	3365					3370					3375			
Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp	Pro	Val	His	Ser	His
	3380					3385					3390			
Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Asp	Glu
	3395					3400					3405			
Asp	Met	Asn	Ser	Ile	Leu	Ala	Asp	Pro	Gly	Asp	Asp	Thr	Lys	Gly
	3410					3415					3420			
Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu
	3425					3430					3435			
Leu	Arg	Arg	Cys	Val	Arg	Asp	Pro	Glu	Thr	Gly	Phe	Tyr	Met	Leu
	3440					3445					3450			
Gln	Leu	Ala	Gly	Lys	Gly	Ser	Ser	Val	His	His	Leu	Ser	Glu	Glu
	3455					3460					3465			
Leu	Arg	Arg	Ala	Leu	Arg	Glu	Ala	Arg	Val	Thr	Pro	Gly	Thr	Gly

3470

3475

3480

Asp Phe Gln Gly Gln Ser Ile Ser Val Trp Glu Leu Leu Phe Tyr  
 3485 3490 3495

Arg Glu Val Pro Glu Ser Leu Arg Gln Asp Leu Leu Arg Arg Tyr  
 3500 3505 3510

Gln Ala Gly Gly Leu Thr Val His Asp Val Thr Thr Thr Leu Thr  
 3515 3520 3525

Ser Leu Leu Ala Arg Ala Lys Asp Gly Ser Pro Arg Xaa Asp Pro  
 3530 3535 3540

Gln Gly Ala Leu Gly Lys Ala Thr Met Glu Val Lys Arg Gly His  
 3545 3550 3555

Leu Arg Gly His Xaa Val Pro Val Trp Asp Ile Leu Thr Ser Asn  
 3560 3565 3570

Tyr Val Ser Arg Asp Thr Arg Lys Glu Leu Leu Ala Gln Phe Ser  
 3575 3580 3585

Ser Gly Ser Leu Thr Leu Pro Met Leu Lys Arg Arg Leu Thr Thr  
 3590 3595 3600

Ile Ile Glu Glu Ala Glu Glu Thr Gln Glu Ser Lys Pro Lys Pro  
 3605 3610 3615

Arg Asp Ala Ser Leu Lys Gln Gln Asp Thr Gly Ala Arg Gly Ser  
 3620 3625 3630

Gly Thr Ser Pro Asp Glu Gly Asp Ala Gln Asp Ser Ser Glu Ser  
 3635 3640 3645

Ala Arg Gln Gln Gln Glu Gln Thr Leu Arg Ala Thr Thr Met Gln  
 3650 3655 3660

Val His Arg Gly Gln Phe Arg Asp Gln Gln Val Ser Val Trp Lys  
 3665 3670 3675

Val Leu Phe Ser Ser Tyr Leu Ser Glu Thr Arg Arg Glu Glu Leu  
 3680 3685 3690

Leu Ala Gln His Leu Ala Gly Lys Leu Gly Val Met Glu Leu Val  
 3695 3700 3705

Ser Leu Leu Thr Gln Ile Ile Glu Glu Thr Glu Glu Arg Leu Ser  
 3710 3715 3720

Lys Val Ser Phe Pro Gly Leu Arg Arg Gln Val Ser Ala Ser Glu  
 3725 3730 3735

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Leu	Cys	Thr	Ser	Gly	Ile	Leu	Asp	Arg	Asp	Thr	Met	Arg	Glu	Leu
	3740					3745					3750			
Ala	Gln	Gly	Thr	Lys	Thr	Ile	His	Glu	Val	Thr	Glu	Met	Asp	Ser
	3755					3760					3765			
Val	Lys	Arg	Tyr	Leu	Gly	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Val	Leu
	3770					3775					3780			
Val	Pro	Val	Gln	Gly	Glu	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile
	3785					3790					3795			
Tyr	Gln	Ala	Met	Trp	Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu
	3800					3805					3810			
Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro
	3815					3820					3825			
Val	Asn	Asn	Arg	Arg	Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly
	3830					3835					3840			
Val	Val	Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu	Xaa	Ser	Ala	Glu	Arg
	3845					3850					3855			
Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Thr	Gly	Asp	Gln	Ile	Ser
	3860					3865					3870			
Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile	Val	Arg	Asp	His	Gly
	3875					3880					3885			
Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp
	3890					3895					3900			
Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg
	3905					3910					3915			
Gly	Tyr	Phe	Asp	Glu	Asp	Met	Asn	Ser	Ile	Leu	Ala	Asp	Pro	Gly
	3920					3925					3930			
Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu
	3935					3940					3945			
Thr	Tyr	Leu	Gln	Leu	Leu	Arg	Arg	Cys	Val	Arg	Asp	Pro	Glu	Thr
	3950					3955					3960			
Gly	Phe	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Lys	Gly	Ser	Ser	Val	His
	3965					3970					3975			
His	Leu	Ser	Glu	Glu	Leu	Arg	Arg	Ala	Leu	Arg	Glu	Ala	Arg	Val
	3980					3985					3990			

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Thr	Pro	Gly	Thr	Gly	Asp	Phe	Gln	Gly	Gln	Ser	Ile	Ser	Val	Trp
	3995					4000					4005			
Glu	Leu	Leu	Phe	Tyr	Arg	Glu	Val	Pro	Glu	Ser	Leu	Arg	Gln	Asp
	4010					4015					4020			
Leu	Leu	Arg	Arg	Tyr	Gln	Ala	Gly	Gly	Leu	Thr	Val	His	Asp	Val
	4025					4030					4035			
Thr	Thr	Thr	Leu	Thr	Ser	Leu	Leu	Ala	Arg	Ala	Lys	Asp	Gly	Ser
	4040					4045					4050			
Pro	Arg	Xaa	Asp	Pro	Gln	Gly	Ala	Leu	Gly	Lys	Ala	Thr	Met	Glu
	4055					4060					4065			
Val	Lys	Arg	Gly	His	Leu	Arg	Gly	His	Xaa	Val	Pro	Val	Trp	Asp
	4070					4075					4080			
Ile	Leu	Thr	Ser	Asn	Tyr	Val	Ser	Arg	Asp	Thr	Arg	Lys	Glu	Leu
	4085					4090					4095			
Leu	Ala	Gln	Phe	Ser	Ser	Gly	Ser	Leu	Thr	Leu	Pro	Met	Leu	Lys
	4100					4105					4110			
Arg	Arg	Leu	Thr	Thr	Ile	Ile	Glu	Glu	Ala	Glu	Glu	Thr	Gln	Glu
	4115					4120					4125			
Ser	Lys	Pro	Lys	Pro	Arg	Asp	Ala	Ser	Leu	Lys	Gln	Gln	Asp	Thr
	4130					4135					4140			
Gly	Ala	Arg	Gly	Ser	Gly	Thr	Ser	Pro	Asp	Glu	Gly	Asp	Ala	Gln
	4145					4150					4155			
Asp	Ser	Ser	Glu	Ser	Ala	Arg	Gln	Gln	Gln	Glu	Gln	Thr	Leu	Arg
	4160					4165					4170			
Ala	Thr	Thr	Met	Gln	Val	His	Arg	Gly	Gln	Phe	Arg	Asp	Gln	Gln
	4175					4180					4185			
Val	Ser	Val	Trp	Lys	Val	Leu	Phe	Ser	Ser	Tyr	Leu	Ser	Glu	Thr
	4190					4195					4200			
Arg	Arg	Glu	Glu	Leu	Leu	Ala	Gln	His	Leu	Ala	Gly	Lys	Leu	Gly
	4205					4210					4215			
Val	Met	Glu	Leu	Val	Ser	Leu	Leu	Thr	Gln	Ile	Ile	Glu	Glu	Thr
	4220					4225					4230			
Glu	Glu	Arg	Leu	Ser	Lys	Val	Ser	Phe	Pro	Gly	Leu	Arg	Arg	Gln
	4235					4240					4245			

Val	Ser	Ala	Ser	Glu	Leu	Cys	Thr	Ser	Gly	Ile	Leu	Asp	Arg	Asp
	4250					4255					4260			
Thr	Met	Arg	Glu	Leu	Ala	Gln	Gly	Thr	Lys	Thr	Ile	His	Glu	Val
	4265					4270					4275			
Thr	Glu	Met	Asp	Ser	Val	Lys	Arg	Tyr	Leu	Gly	Gly	Ser	Ser	Cys
	4280					4285					4290			
Ile	Ala	Gly	Val	Leu	Val	Pro	Val	Gln	Gly	Glu	Pro	Gly	Arg	Gln
	4295					4300					4305			
Glu	Lys	Met	Ser	Ile	Tyr	Gln	Ala	Met	Trp	Lys	Gly	Val	Leu	Arg
	4310					4315					4320			
Pro	Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly
	4325					4330					4335			
Phe	Ile	Ile	Asp	Pro	Val	Asn	Asn	Arg	Arg	Leu	Ser	Val	Glu	Glu
	4340					4345					4350			
Ala	Val	Ala	Ala	Gly	Val	Val	Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu
	4355					4360					4365			
Xaa	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Thr
	4370					4375					4380			
Gly	Asp	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile
	4385					4390					4395			
Val	Arg	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr
	4400					4405					4410			
Gly	Gly	Val	Ile	Asp	Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp
	4415					4420					4425			
Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Asp	Glu	Asp	Met	Asn	Ser	Ile
	4430					4435					4440			
Leu	Ala	Asp	Pro	Gly	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn
	4445					4450					4455			
Thr	His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Leu	Arg	Arg	Cys	Val
	4460					4465					4470			
Arg	Asp	Pro	Glu	Thr	Gly	Phe	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Lys
	4475					4480					4485			
Gly	Ser	Ser	Val	His	His	Leu	Ser	Glu	Glu	Leu	Arg	Arg	Ala	Leu
	4490					4495					4500			
Arg	Glu	Ala	Arg	Val	Thr	Pro	Gly	Thr	Gly	Asp	Phe	Gln	Gly	Gln

4505

4510

4515

Ser Ile Ser Val Trp Glu Leu Leu Phe Tyr Arg Glu Val Pro Glu  
4520 4525 4530

Ser Leu Arg Gln Asp Leu Leu Arg Arg Tyr Gln Ala Gly Gly Leu  
4535 4540 4545

Thr Val His Asp Val Thr Thr Thr Leu Thr Ser Leu Leu Ala Arg  
4550 4555 4560

Ala Lys Asp Gly Ser Pro Arg Xaa Asp Pro Gln Gly Ala Leu Gly  
4565 4570 4575

Lys Ala Thr Met Glu Val Lys Arg Gly His Leu Arg Gly His Xaa  
4580 4585 4590

Val Pro Val Trp Asp Ile Leu Thr Ser Asn Tyr Val Ser Arg Asp  
4595 4600 4605

Thr Arg Lys Glu Leu Leu Ala Gln Phe Ser Ser Gly Ser Leu Thr  
4610 4615 4620

Leu Pro Met Leu Lys Arg Arg Leu Thr Thr Ile Ile Glu Glu Ala  
4625 4630 4635

Glu Glu Thr Gln Glu Ser Lys Pro Lys Pro Arg Asp Ala Ser Leu  
4640 4645 4650

Lys Gln Gln Asp Thr Gly Ala Arg Gly Ser Gly Thr Ser Pro Asp  
4655 4660 4665

Glu Gly Asp Ala Gln Asp Ser Ser Glu Ser Ala Arg Gln Gln Gln  
4670 4675 4680

Glu Gln Thr Leu Arg Ala Thr Thr Met Gln Val His Arg Gly Gln  
4685 4690 4695

Phe Arg Asp Gln Gln Val Ser Val Trp Lys Val Leu Phe Ser Ser  
4700 4705 4710

Tyr Leu Ser Glu Thr Arg Arg Glu Glu Leu Leu Ala Gln His Leu  
4715 4720 4725

Ala Gly Lys Leu Gly Val Met Glu Leu Val Ser Leu Leu Thr Gln  
4730 4735 4740

Ile Ile Glu Glu Thr Glu Glu Arg Leu Ser Lys Val Ser Phe Pro  
4745 4750 4755

Gly Leu Arg Arg Gln Val Ser Ala Ser Glu Leu Cys Thr Ser Gly  
4760 4765 4770

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Ile	Leu	Asp	Arg	Asp	Thr	Met	Arg	Glu	Leu	Ala	Gln	Gly	Thr	Lys
	4775					4780					4785			
Thr	Ile	His	Glu	Val	Thr	Glu	Met	Asp	Ser	Val	Lys	Arg	Tyr	Leu
	4790					4795					4800			
Gly	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Val	Leu	Val	Pro	Val	Gln	Gly
	4805					4810					4815			
Glu	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile	Tyr	Gln	Ala	Met	Trp
	4820					4825					4830			
Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu	Val	Leu	Leu	Glu	Ala
	4835					4840					4845			
Gln	Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro	Val	Asn	Asn	Arg	Arg
	4850					4855					4860			
Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly	Val	Val	Gly	Gly	Glu
	4865					4870					4875			
Ile	Gln	Glu	Lys	Leu	Xaa	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr
	4880					4885					4890			
Thr	Asp	Pro	Tyr	Thr	Gly	Asp	Gln	Ile	Ser	Leu	Phe	Gln	Ala	Met
	4895					4900					4905			
Gln	Arg	Asp	Leu	Ile	Val	Arg	Asp	His	Gly	Ile	Arg	Leu	Leu	Glu
	4910					4915					4920			
Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp	Pro	Val	His	Ser	His
	4925					4930					4935			
Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg	Gly	Tyr	Phe	Asp	Glu
	4940					4945					4950			
Asp	Met	Asn	Ser	Ile	Leu	Ala	Asp	Pro	Gly	Asp	Asp	Thr	Lys	Gly
	4955					4960					4965			
Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu
	4970					4975					4980			
Leu	Arg	Arg	Cys	Val	Arg	Asp	Pro	Glu	Thr	Gly	Phe	Tyr	Met	Leu
	4985					4990					4995			
Gln	Leu	Ala	Gly	Lys	Gly	Ser	Ser	Val	His	His	Leu	Ser	Glu	Glu
	5000					5005					5010			
Leu	Arg	Arg	Ala	Leu	Arg	Glu	Ala	Arg	Val	Thr	Pro	Gly	Thr	Gly
	5015					5020					5025			

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Asp	Phe	Gln	Gly	Gln	Ser	Ile	Ser	Val	Trp	Glu	Leu	Leu	Phe	Tyr
	5030					5035					5040			
Arg	Glu	Val	Pro	Glu	Ser	Leu	Arg	Gln	Asp	Leu	Leu	Arg	Arg	Tyr
	5045					5050					5055			
Gln	Ala	Gly	Gly	Leu	Thr	Val	His	Asp	Val	Thr	Thr	Thr	Leu	Thr
	5060					5065					5070			
Ser	Leu	Leu	Ala	Arg	Ala	Lys	Asp	Gly	Ser	Pro	Arg	Xaa	Asp	Pro
	5075					5080					5085			
Gln	Gly	Ala	Leu	Gly	Lys	Ala	Thr	Met	Glu	Val	Lys	Arg	Gly	His
	5090					5095					5100			
Leu	Arg	Gly	His	Xaa	Val	Pro	Val	Trp	Asp	Ile	Leu	Thr	Ser	Asn
	5105					5110					5115			
Tyr	Val	Ser	Arg	Asp	Thr	Arg	Lys	Glu	Leu	Leu	Ala	Gln	Phe	Ser
	5120					5125					5130			
Ser	Gly	Ser	Leu	Thr	Leu	Pro	Met	Leu	Lys	Arg	Arg	Leu	Thr	Thr
	5135					5140					5145			
Ile	Ile	Glu	Glu	Ala	Glu	Glu	Thr	Gln	Glu	Ser	Lys	Pro	Lys	Pro
	5150					5155					5160			
Arg	Asp	Ala	Ser	Leu	Lys	Gln	Gln	Asp	Thr	Gly	Ala	Arg	Gly	Ser
	5165					5170					5175			
Gly	Thr	Ser	Pro	Asp	Glu	Gly	Asp	Ala	Gln	Asp	Ser	Ser	Glu	Ser
	5180					5185					5190			
Ala	Arg	Gln	Gln	Gln	Glu	Gln	Thr	Leu	Arg	Ala	Thr	Thr	Met	Gln
	5195					5200					5205			
Val	His	Arg	Gly	Gln	Phe	Arg	Asp	Gln	Gln	Val	Ser	Val	Trp	Lys
	5210					5215					5220			
Val	Leu	Phe	Ser	Ser	Tyr	Leu	Ser	Glu	Thr	Arg	Arg	Glu	Glu	Leu
	5225					5230					5235			
Leu	Ala	Gln	His	Leu	Ala	Gly	Lys	Leu	Gly	Val	Met	Glu	Leu	Val
	5240					5245					5250			
Ser	Leu	Leu	Thr	Gln	Ile	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser
	5255					5260					5265			
Lys	Val	Ser	Phe	Pro	Gly	Leu	Arg	Arg	Gln	Val	Ser	Ala	Ser	Glu
	5270					5275					5280			



Leu	Cys	Thr	Ser	Gly	Ile	Leu	Asp	Arg	Asp	Thr	Met	Arg	Glu	Leu
	5285					5290					5295			
Ala	Gln	Gly	Thr	Lys	Thr	Ile	His	Glu	Val	Thr	Glu	Met	Asp	Ser
	5300					5305					5310			
Val	Lys	Arg	Tyr	Leu	Gly	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Val	Leu
	5315					5320					5325			
Val	Pro	Val	Gln	Gly	Glu	Pro	Gly	Arg	Gln	Glu	Lys	Met	Ser	Ile
	5330					5335					5340			
Tyr	Gln	Ala	Met	Trp	Lys	Gly	Val	Leu	Arg	Pro	Gly	Thr	Ala	Leu
	5345					5350					5355			
Val	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr	Gly	Phe	Ile	Ile	Asp	Pro
	5360					5365					5370			
Val	Asn	Asn	Arg	Arg	Leu	Ser	Val	Glu	Glu	Ala	Val	Ala	Ala	Gly
	5375					5380					5385			
Val	Val	Gly	Gly	Glu	Ile	Gln	Glu	Lys	Leu	Xaa	Ser	Ala	Glu	Arg
	5390					5395					5400			
Ala	Val	Thr	Gly	Tyr	Thr	Asp	Pro	Tyr	Thr	Gly	Asp	Gln	Ile	Ser
	5405					5410					5415			
Leu	Phe	Gln	Ala	Met	Gln	Arg	Asp	Leu	Ile	Val	Arg	Asp	His	Gly
	5420					5425					5430			
Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	Val	Ile	Asp
	5435					5440					5445			
Pro	Val	His	Ser	His	Arg	Val	Pro	Val	Asp	Val	Ala	Tyr	Gln	Arg
	5450					5455					5460			
Gly	Tyr	Phe	Asp	Glu	Asp	Met	Asn	Ser	Ile	Leu	Ala	Asp	Pro	Gly
	5465					5470					5475			
Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	His	Glu	Asn	Leu
	5480					5485					5490			
Thr	Tyr	Leu	Gln	Leu	Leu	Arg	Arg	Cys	Val	Arg	Asp	Pro	Glu	Thr
	5495					5500					5505			
Gly	Phe	Tyr	Met	Leu	Gln	Leu	Ala	Gly	Lys	Gly	Ser	Ser	Val	His
	5510					5515					5520			
His	Leu	Ser	Glu	Glu	Leu	Arg	Arg	Ala	Leu	Arg	Glu	Ala	Arg	Val
	5525					5530					5535			
Thr	Pro	Gly	Thr	Gly	Asp	Phe	Gln	Gly	Gln	Ser	Ile	Ser	Val	Trp

5540

5545

5550

Glu Leu Leu Phe Tyr Arg Glu Val Pro Glu Ser Leu Arg Gln Asp  
5555 5560 5565

Leu Leu Arg Arg Tyr Gln Ala Gly Gly Leu Thr Val His Asp Val  
5570 5575 5580

Thr Thr Thr Leu Thr Ser Leu Leu Ala Arg Ala Lys Asp Gly Ser  
5585 5590 5595

Pro Arg Xaa Asp Pro Gln Gly Ala Leu Gly Lys Ala Thr Met Glu  
5600 5605 5610

Val Lys Arg Gly His Leu Arg Gly His Xaa Val Pro Val Trp Asp  
5615 5620 5625

Ile Leu Thr Ser Asn Tyr Val Ser Arg Asp Thr Arg Lys Glu Leu  
5630 5635 5640

Leu Ala Gln Phe Ser Ser Gly Ser Leu Thr Leu Pro Met Leu Lys  
5645 5650 5655

Arg Arg Leu Thr Thr Ile Ile Glu Glu Ala Glu Glu Thr Gln Glu  
5660 5665 5670

Ser Lys Pro Lys Pro Arg Asp Ala Ser Leu Lys Gln Gln Asp Thr  
5675 5680 5685

Gly Ala Arg Gly Ser Gly Thr Ser Pro Asp Glu Gly Asp Ala Gln  
5690 5695 5700

Asp Ser Ser Glu Ser Ala Arg Gln Gln Gln Glu Gln Thr Leu Arg  
5705 5710 5715

Ala Thr Thr Met Gln Val His Arg Gly Gln Phe Arg Asp Gln Gln  
5720 5725 5730

Val Ser Val Trp Lys Val Leu Phe Ser Ser Tyr Leu Ser Glu Thr  
5735 5740 5745

Arg Arg Glu Glu Leu Leu Ala Gln His Leu Ala Gly Lys Leu Gly  
5750 5755 5760

Val Met Glu Leu Val Ser Leu Leu Thr Gln Ile Ile Glu Glu Thr  
5765 5770 5775

Glu Glu Arg Leu Ser Lys Val Ser Phe Pro Gly Leu Arg Arg Gln  
5780 5785 5790

Val Ser Ala Ser Glu Leu Cys Thr Ser Gly Ile Leu Asp Arg Asp  
5795 5800 5805

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Thr	Met 5810	Arg	Glu	Leu	Ala	Gln 5815	Gly	Thr	Lys	Thr	Ile 5820	His	Glu	Val
Thr	Glu 5825	Met	Asp	Ser	Val	Lys 5830	Arg	Tyr	Leu	Gly	Gly 5835	Ser	Ser	Cys
Ile	Ala 5840	Gly	Val	Leu	Val	Pro 5845	Val	Gln	Gly	Glu	Pro 5850	Gly	Arg	Gln
Glu	Lys 5855	Met	Ser	Ile	Tyr	Gln 5860	Ala	Met	Trp	Lys	Gly 5865	Val	Leu	Arg
Pro	Gly 5870	Thr	Ala	Leu	Val	Leu 5875	Leu	Glu	Ala	Gln	Ala 5880	Ala	Thr	Gly
Phe	Ile 5885	Ile	Asp	Pro	Val	Asn 5890	Asn	Arg	Arg	Leu	Ser 5895	Val	Glu	Glu
Ala	Val 5900	Ala	Ala	Gly	Val	Val 5905	Gly	Gly	Glu	Ile	Gln 5910	Glu	Lys	Leu
Xaa	Ser 5915	Ala	Glu	Arg	Ala	Val 5920	Thr	Gly	Tyr	Thr	Asp 5925	Pro	Tyr	Thr
Gly	Asp 5930	Gln	Ile	Ser	Leu	Phe 5935	Gln	Ala	Met	Gln	Arg 5940	Asp	Leu	Ile
Val	Arg 5945	Asp	His	Gly	Ile	Arg 5950	Leu	Leu	Glu	Ala	Gln 5955	Ile	Ala	Thr
Gly	Gly 5960	Val	Ile	Asp	Pro	Val 5965	His	Ser	His	Arg	Val 5970	Pro	Val	Asp
Val	Ala 5975	Tyr	Gln	Arg	Gly	Tyr 5980	Phe	Asp	Glu	Asp	Met 5985	Asn	Ser	Ile
Leu	Ala 5990	Asp	Pro	Gly	Asp	Asp 5995	Thr	Lys	Gly	Phe	Phe 6000	Asp	Pro	Asn
Thr	His 6005	Glu	Asn	Leu	Thr	Tyr 6010	Leu	Gln	Leu	Leu	Arg 6015	Arg	Cys	Val
Arg	Asp 6020	Pro	Glu	Thr	Gly	Phe 6025	Tyr	Met	Leu	Gln	Leu 6030	Ala	Gly	Lys
Gly	Ser 6035	Ser	Val	His	His	Leu 6040	Ser	Glu	Glu	Leu	Arg 6045	Arg	Ala	Leu
Arg	Glu 6050	Ala	Arg	Val	Thr	Pro 6055	Gly	Thr	Gly	Asp	Phe 6060	Gln	Gly	Gln

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Ser	Ile	Ser	Val	Trp	Glu	Leu	Leu	Phe	Tyr	Arg	Glu	Val	Pro	Glu
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Ser	Leu	Arg	Gln	Asp	Leu	Leu	Arg	Arg	Tyr	Gln	Ala	Gly	Gly	Leu
	6080					6085					6090			
Thr	Val	His	Asp	Val	Thr	Thr	Thr	Leu	Thr	Ser	Leu	Leu	Ala	Arg
	6095					6100					6105			
Ala	Lys	Asp	Gly	Ser	Pro	Arg	Glu	Asp	Pro	Gln	Gly	Ala	Leu	Gly
	6110					6115					6120			
Lys	Ala	Thr	Met	Glu	Val	Lys	Arg	Gly	His	Leu	Arg	Gly	His	Val
	6125					6130					6135			
Val	Pro	Val	Trp	Asp	Ile	Leu	Thr	Ser	Asn	Tyr	Val	Ser	Arg	Asp
	6140					6145					6150			
Thr	Arg	Lys	Glu	Leu	Leu	Ala	Gln	Phe	Ser	Ser	Gly	Ser	Leu	Thr
	6155					6160					6165			
Leu	Pro	Met	Leu	Lys	Arg	Arg	Leu	Thr	Thr	Ile	Ile	Glu	Glu	Ala
	6170					6175					6180			
Glu	Glu	Thr	Gln	Glu	Ser	Lys	Pro	Lys	Pro	Arg	Asp	Ala	Ser	Leu
	6185					6190					6195			
Lys	Gln	Gln	Asp	Thr	Gly	Ala	Arg	Gly	Ser	Gly	Thr	Ser	Pro	Asp
	6200					6205					6210			
Glu	Gly	Asp	Ala	Gln	Asp	Ser	Ser	Glu	Ser	Ala	Arg	Gln	Gln	Gln
	6215					6220					6225			
Glu	Gln	Thr	Leu	Arg	Ala	Thr	Thr	Met	Gln	Val	His	Arg	Gly	Gln
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Phe	Arg	Asp	Gln	Gln	Val	Ser	Val	Trp	Lys	Val	Leu	Phe	Ser	Ser
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Tyr	Leu	Ser	Glu	Thr	Arg	Arg	Glu	Glu	Leu	Leu	Ala	Gln	His	Leu
	6260					6265					6270			
Ala	Gly	Lys	Leu	Gly	Val	Met	Glu	Leu	Val	Ser	Leu	Leu	Thr	Gln
	6275					6280					6285			
Ile	Ile	Glu	Glu	Thr	Glu	Glu	Arg	Leu	Ser	Lys	Val	Ser	Phe	Pro
	6290					6295					6300			
Gly	Leu	Arg	Arg	Gln	Val	Ser	Ala	Ser	Glu	Leu	Cys	Thr	Ser	Gly
	6305					6310					6315			

Ile Leu Asp Arg Asp Thr Met Arg Glu Leu Ala Gln Gly Thr Lys  
6320 6325 6330

Thr Ile His Glu Val Thr Glu Met Asp Ser Val Lys Arg Tyr Leu  
6335 6340 6345

Gly Gly Ser Ser Cys Ile Ala Gly Val Leu Val Pro Val Gln Gly  
6350 6355 6360

Glu Pro Gly Arg Gln Glu Lys Met Ser Ile Tyr Gln Ala Met Trp  
6365 6370 6375

Lys Gly Val Leu Arg Pro Gly Thr Ala Leu Val Leu Leu Glu Ala  
6380 6385 6390

Gln Ala Ala Thr Gly Phe Ile Ile Asp Pro Val Asn Asn Arg Arg  
6395 6400 6405

Leu Ser Val Glu Glu Ala Val Ala Ala Gly Val Val Gly Gly Glu  
6410 6415 6420

Ile Gln Glu Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr  
6425 6430 6435

Thr Asp Pro Tyr Thr Gly Asp Gln Ile Ser Leu Phe Gln Ala Met  
6440 6445 6450

Gln Arg Asp Leu Ile Val Lys Asn His Gly Ile Arg Leu Leu Glu  
6455 6460 6465

Ala Gln Ile Ala Thr Gly Gly Val Ile Asp Pro Val His Ser His  
6470 6475 6480

Arg Val Pro Val Asp Val Ala Tyr Gln Arg Gly Tyr Phe Asp Gln  
6485 6490 6495

Glu Met Asn Ser Ile Leu Ala Asp Pro Gly Asp Asp Thr Lys Gly  
6500 6505 6510

Phe Phe Asp Pro Asn Thr His Glu Asn Leu Thr Tyr Leu Gln Leu  
6515 6520 6525

Leu Gln Arg Ala Thr Ile Asp Pro Glu Thr Gly Leu Leu Phe Leu  
6530 6535 6540

Ser Leu Ser Lys Gly  
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<213> Mus musculus

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<221> CDS

<222> (1)..(3519)

<400> 137

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Val Ala Leu Arg Thr Lys Lys Gly Leu Lys Gly Ser Ile Glu Asp Val  
20 25 30

ctt gga gac ctc ctg gga gat gac aca aca cca cct gag aag cct gct 144  
Leu Gly Asp Leu Leu Gly Asp Asp Thr Thr Pro Pro Glu Lys Pro Ala  
35 40 45

gag cca gct tcc cat gcc aaa gac aca gcg agc tca cct cag tgg cag 192  
Glu Pro Ala Ser His Ala Lys Asp Thr Ala Ser Ser Pro Gln Trp Gln  
50 55 60

gct tca aag gca aag ttc ctc cca aaa gac agc gtt gaa gga ctg gca 240  
Ala Ser Lys Ala Lys Phe Leu Pro Lys Asp Ser Val Glu Gly Leu Ala  
65 70 75 80

gga gct gat gct gag gcc tcc agc gtc tcg gat gca gac cca cag gtc 288  
Gly Ala Asp Ala Glu Ala Ser Ser Val Ser Asp Ala Asp Pro Gln Val  
85 90 95

ttc ctg cag aac atg aag gac ttg gac agc atg gac gat gat ctc ttt 336  
Phe Leu Gln Asn Met Lys Asp Leu Asp Ser Met Asp Asp Asp Leu Phe  
100 105 110

ggt cggtg ata aag tct cac cag ccc tcc ggc aaa gga gct gca aag ggt 384  
Gly Arg Ile Lys Ser His Gln Pro Ser Gly Lys Gly Ala Ala Lys Gly  
115 120 125

cct ggtg aaa gaa gga cct agc aat cac aag cct gct ggc aca tta aca 432  
Pro Gly Lys Glu Gly Pro Ser Asn His Lys Pro Ala Gly Thr Leu Thr  
130 135 140

gct aat gag aaa ggt tac acc atg ccc act aag aag cca cca cca tct 480  
Ala Asn Glu Lys Gly Tyr Thr Met Pro Thr Lys Lys Pro Pro Pro Ser  
145 150 155 160

tcc agc aag act ggt ctt cag tat aag aag ttc tcc ttt gaa gac ttt 528  
Ser Ser Lys Thr Gly Leu Gln Tyr Lys Lys Phe Ser Phe Glu Asp Phe  
165 170 175

gaa gac cca ctg gca gga ctt ctc tct gat gag gaa gaa gaa acc gcc 576  
Glu Asp Pro Leu Ala Gly Leu Leu Ser Asp Glu Glu Glu Thr Thr Ala  
180 185 190

acg aag ctg cct gca gtg gag agg aaa cct gct ccc aag agc cyg ggc 624  
Thr Lys Leu Pro Ala Val Glu Arg Lys Pro Ala Pro Lys Ser Xaa Gly  
195 200 205

gca gca gca ggc caa ggt cct tct gtt cct ctg acc cct ggg gat acg 672  
Ala Ala Ala Gly Gln Gly Pro Ser Val Pro Leu Thr Thr Pro Gly Asp Thr  
210 215 220

ccc atc agg aag aaa gaa ctg ctc ttt gat gaa ggg gat gac atc atg 720  
Pro Ile Arg Lys Lys Glu Leu Leu Phe Asp Glu Gly Asp Asp Ile Met  
225 230 235 240

act act ctg ggc ttt gaa gac agc ccc aag gca gag agg aag aag aca 768  
Thr Thr Leu Gly Phe Glu Asp Ser Pro Lys Ala Glu Arg Lys Lys Thr  
245 250 255

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gga Gly	gac Asp	cag Gln	gaa Glu 260	ggg Gly	cca Pro	ctc Leu	cct Pro	gct Ala 265	cgc Arg	tcc Ser	aag Lys	ctg Leu	gat Asp 270	gaa Glu	ctg Leu	816
ctg Leu	ggt Gly	cgg Arg 275	ggt Gly	aca Thr	gca Ala	gcc Ala	aag Lys 280	ctc Leu	ctc Leu	act Thr	cgc Arg	cca Pro 285	ggc Gly	act Thr	ggg Gly	864
gaa Glu	cgc Arg 290	aga Arg	gag Glu	ttc Phe	cag Gln	tta Leu 295	gac Asp	aag Lys	aag Lys	tat Tyr	cag Gln 300	aag Lys	atg Met	gga Gly	ggg Gly	912
gag Glu 305	gag Glu	tct Ser	gta Val	cca Pro	gct Ala 310	aga Arg	gac Asp	aag Lys	gaa Glu	gac Asp 315	agc Ser	tgg Trp	gat Asp	gac Asp	gag Glu 320	960
acc Thr	ctc Leu	acc Thr	ttt Phe	ggg Gly 325	gct Ala	tac Tyr	aag Lys	cct Pro	acc Thr 330	gtg Val	gcc Ala	tcc Ser	tct Ser	gag Glu 335	ggc Gly	1008
cgc Arg	cag Gln	tcc Ser	cgc Arg 340	agg Arg	cag Gln	tca Ser	gtc Val	agc Ser 345	agg Arg	ttc Phe	ttg Leu	gga Gly	gaa Glu 350	gga Gly	ggc Gly	1056
cca Pro	gac Asp	cct Pro 355	aag Lys	gga Gly	gaa Glu	agc Ser	cta Leu 360	ggc Gly	ttc Phe	aaa Lys	cag Gln	agc Ser 365	tct Ser	cca Pro	cca Pro	1104
gcc Ala	tcc Ser 370	agt Ser	cct Pro	atc Ile	cac His	ccc Pro 375	agg Arg	aaa Lys	gga Gly	gga Gly	gct Ala 380	gac Asp	tgg Trp	tta Leu	ggc Gly	1152
ctt Leu 385	aag Lys	gac Asp	aat Asn	gac Asp	ctg Leu 390	gac Asp	ctg Leu	ctg Leu	tct Ser	ccc Pro 395	tct Ser	cct Pro	gtt Val	caa Gln	aag Lys 400	1200
gcc Ala	caa Gln	cag Gln	gaa Glu	gac Asp 405	tca Ser	ccc Pro	atg Met	aca Thr	ccc Pro 410	tct Ser	ctc Leu	ctg Leu	cct Pro	cct Pro 415	aca Thr	1248
aac Asn	cag Gln	ccc Pro	tca Ser 420	gcc Ala	cca Pro	gag Glu	cca Pro	cag Gln 425	tct Ser	gcc Ala	cca Pro	act Thr	gga Gly 430	ctt Leu	ccc Pro	1296
tca Ser	gca Ala 435	gca Ala	aag Lys	cca Pro	cca Pro	gcc Ala	aag Lys 440	ggt Gly	gca Ala	aga Arg	ccc Pro	tct Ser 445	ctc Leu	aaa Lys	gcc Ala	1344
agc Ser	cag Gln 450	gcc Ala	tcc Ser	tca Ser	cca Pro	aaa Lys 455	gca Ala	tct Ser	gag Glu	gag Glu	aaa Lys 460	gaa Glu	gat Asp	gac Asp	tgg Trp	1392
tta Leu 465	agc Ser	cat His	gtc Val	ata Ile	tct Ser 470	cag Gln	aag Lys	aaa Lys	tcc Ser	caa Gln 475	aat Asn	cta Leu	gcc Ala	aga Arg	gaa Glu 480	1440
gag Glu	cgt Arg	gcg Ala	ggg Gly	ccc Pro 485	cct Pro	aag Lys	gac Asp	ctg Leu	gcc Ala 490	tcg Ser	ctg Leu	ggg Gly	tca Ser	ctg Leu 495	ggt Gly	1488
cag Gln	acc Thr	cct Pro	tct Ser 500	ggc Gly	agc Ser	ctg Leu	cct Pro	gtt Val 505	gct Ala	cag Gln	gtc Val	ctt Leu	gag Glu 510	cag Gln	gcc Ala	1536
cct Pro	gct Ala	gga Gly 515	gaa Glu	gcc Ala	tcg Ser	aaa Lys	cca Pro 520	act Thr	aca Thr	caa Gln	gga Gly	atg Met 525	gcg Ala	gct Ala	gtc Val	1584

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agg Arg	cct Pro	ggt Gly	gtc Val	aca Thr	ggg Gly	tcc Ser	tcc Ser	atg Met	agt Ser	tgg Trp	agc Ser	caa Gln	gcc Ala	act Thr	act Thr	1632
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gtt Val	ctc Leu	cct Pro	gta Val	gat Asp	gac Asp	ccc Pro	aag Lys	aaa Lys	gga Gly	gca Ala	gcc Ala	tct Ser	gcc Ala	tct Ser	ggg Gly	1680
545					550					555					560	
gac Asp	ttc Phe	tct Ser	agc Ser	aga Arg	gag Glu	cct Pro	gcg Ala	ggt Val	tac Tyr	att Ile	cca Pro	cac His	tcc Ser	cag Gln	gaa Glu	1728
				565					570					575		
cct Pro	acg Thr	ggg Gly	ctc Leu	tct Ser	gtg Val	cct Pro	atc Ile	cag Gln	acc Thr	ctc Leu	ctc Leu	cca Pro	gag Glu	tcc Ser	atg Met	1776
			580					585					590			
atg Met	cag Gln	agt Ser	ctg Leu	ctg Leu	cca Pro	ggc Gly	tca Ser	gga Gly	tac Tyr	cag Gln	aag Lys	cag Gln	ctc Leu	ctg Leu	gcc Ala	1824
		595					600					605				
gcc Ala	cag Gln	ggg Gly	cag Gln	ctg Leu	cag Gln	agt Ser	agc Ser	act Thr	gcc Ala	cag Gln	ctt Leu	cag Gln	gtt Val	gag Glu	ctg Leu	1872
	610					615					620					
ctg Leu	cag Gln	agc Ser	cag Gln	acc Thr	aag Lys	ctg Leu	tca Ser	gag Glu	ctg Leu	gag Glu	gcc Ala	cag Gln	gtg Val	cgc Arg	aag Lys	1920
625					630					635					640	
ttg Leu	gag Glu	ctg Leu	gag Glu	cgg Arg	gcc Ala	cag Gln	cac His	agg Arg	atg Met	ctg Leu	ctg Leu	gag Glu	agt Ser	ttg Leu	cag Gln	1968
				645					650					655		
cag Gln	cga Arg	cac His	cag Gln	gca Ala	gac Asp	ctg Leu	gag Glu	ctc Leu	atc Ile	gag Glu	gat Asp	gca Ala	cat His	aga Arg	agc Ser	2016
			660					665				670				
cgt Arg	atc Ile	aag Lys	gtg Val	cta Leu	gaa Glu	aca Thr	tcc Ser	tac Tyr	cag Gln	cag Gln	cgg Arg	gag Glu	gag Glu	cag Gln	ctg Leu	2064
		675					680					685				
cgc Arg	aga Arg	gag Glu	aag Lys	gag Glu	gtg Val	cta Leu	tca Ser	gct Ala	cag Gln	cat His	gcg Ala	tca Ser	tat Tyr	tgc Cys	cga Arg	2112
	690					695					700					
gaa Glu	gct Ala	gag Glu	cag Gln	gcc Ala	agg Arg	gct Ala	gag Glu	ctc Leu	gta Val	gcc Ala	cag Gln	cac His	cag Gln	cgg Arg	cag Gln	2160
705					710					715					720	
atg Met	gcc Ala	atg Met	gct Ala	gaa Glu	cag Gln	gag Glu	agg Arg	gac Asp	cag Gln	gag Glu	gtt Val	gcc Ala	cgg Arg	ctc Leu	cgg Arg	2208
				725					730					735		
gag Glu	ctt Leu	cag Gln	cag Gln	gca Ala	tcc Ser	atc Ile	ctg Leu	gag Glu	atg Met	cgc Arg	aag Lys	gat Asp	cat His	gag Glu	cac His	2256
			740					745					750			
cag Gln	ctg Leu	cag Gln	cgg Arg	ctg Leu	aag Lys	atg Met	ctg Leu	aag Lys	gac Asp	cag Gln	gag Glu	att Ile	gat Asp	gct Ala	gtc Val	2304
		755					760					765				
acc Thr	agc Ser	gct Ala	acc Thr	tcc Ser	cat His	act Thr	cgg Arg	tcc Ser	ctg Leu	aat Asn	ggc Gly	atc Ile	atc Ile	gag Glu	cag Gln	2352
	770					775					780					
atg Met	gag Glu	aag Lys	ttt Phe	tcc Ser	agc Ser	agc Ser	ttg Leu	aac Asn	acg Thr	ctg Leu	tcc Ser	tcc Ser	cgc Arg	gtg Val	gag Glu	2400
785					790					795				800		
gcc Glu	tcg Glu	cac Glu	ctt Glu	acc Glu	acc Glu	tca Glu	cag Glu	caa Glu	cga Glu	gag Glu	ctg Glu	ggg Glu	att Glu	cgg Glu	cag Glu	2448



Ala	Ser	His	Leu	Thr	Thr	Ser	Gln	Gln	Arg	Glu	Leu	Gly	Ile	Arg	Gln		
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caa	gat	gag	caa	tgt	cga	gct	ctg	cag	gag	cgg	ctg	ggc	cga	cag	cag		2496
Gln	Asp	Glu	Gln	Leu	Arg	Ala	Leu	Gln	Glu	Arg	Leu	Gly	Arg	Gln	Gln		
			820					825					830				
cga	gac	atg	gag	gaa	gag	cgg	aac	agg	cta	cag	gag	gtc	atc	ggg	aag		2544
Arg	Asp	Met	Glu	Glu	Glu	Arg	Asn	Arg	Leu	Gln	Glu	Val	Ile	Gly	Lys		
		835					840					845					
atg	gaa	gta	cgc	ctg	agt	gag	cag	agc	cgg	ctc	ctg	gaa	cag	gaa	cgt		2592
Met	Glu	Val	Arg	Leu	Ser	Glu	Gln	Ser	Arg	Leu		Glu	Gln	Glu	Arg		
	850					855					860						
tgg	cgg	gtg	gcc	gcc	gag	aag	act	aag	gca	gag	tca	gcc	cag	cgc	act		2640
Trp	Arg	Val	Ala	Ala	Glu	Lys	Thr	Lys	Ala	Glu	Ser	Ala	Gln	Arg	Thr		
865					870				875						880		
ctg	gag	gag	caa	agg	aag	atc	atg	gtc	cag	cag	att	gcc	atg	gag	agg		2688
Leu	Glu	Glu	Gln	Arg	Lys	Ile	Met	Val	Gln	Gln	Ile	Ala	Met	Glu	Arg		
				885					890					895			
gag	gag	ctg	gag	aga	gcc	aag	agc	gcc	ttg	ctg	gag	gag	cag	aag	tca		2736
Glu	Glu	Leu	Glu	Arg	Ala	Lys	Ser	Ala	Leu	Leu	Glu	Glu	Gln	Lys	Ser		
			900					905					910				
gtc	atg	aat	aag	tgt	ggg	gag	gag	cgg	cgg	cgc	ctg	gca	gca	gag	tgg		2784
Val	Met	Asn	Lys	Cys	Gly	Glu	Glu	Arg	Arg	Arg	Leu	Ala	Ala	Glu	Trp		
		915					920					925					
gct	gag	tat	ttc	aca	cag	cag	aag	ctg	agt	aag	gaa	cgg	gcg	gag	cgt		2832
Ala	Glu	Tyr	Phe	Thr	Gln	Gln	Lys	Leu	Ser	Lys	Glu	Arg	Ala	Glu	Arg		
	930					935					940						
gag	gct	gag	agg	gcg	atg	cat	gca	gac	tcc	cag	cgg	gag	ggc	acc	atc		2880
Glu	Ala	Glu	Arg	Ala	Met	His	Ala	Asp	Ser	Gln	Arg	Glu	Gly	Thr	Ile		
945					950					955					960		
atc	agc	ctg	acc	aag	gag	cag	gcg	gag	ctg	aca	gtt	agg	gcc	tgt	gag		2928
Ile	Ser	Leu	Thr	Lys	Glu	Gln	Ala	Glu	Leu	Thr	Val	Arg	Ala	Cys	Glu		
				965					970					975			
ctc	cgg	gcc	aag	gag	gag	aag	ctg	ctt	gct	gag	agg	gag	gct	ttg	gag		2976
Leu	Arg	Ala	Lys	Glu	Glu	Lys	Leu	Leu	Ala	Glu	Arg	Glu	Ala	Leu	Glu		
			980					985					990				
aga	gag	cgc	caa	gag	ctc	cgg	ctg	gag	aag	gac	agg	tta	cac	aaa	gcc		3024
Arg	Glu	Arg	Gln	Glu	Leu	Arg	Leu	Glu	Lys	Asp	Arg	Leu	His	Lys	Ala		
		995					1000					1005					
agc	ctg	cgc	ctg	cag	gcc	cgt	gca	cag	gag	gtg	gaa	cac	atg	agt			3069
Ser	Leu	Arg	Leu	Gln	Ala	Arg	Ala	Gln	Glu	Val	Glu	His	Met	Ser			
	1010					1015					1020						
aag	gta	gcc	tcc	aag	aaa	tac	gag	gag	ggg	gag	cag	gcc	ttg	cag			3114
Lys	Val	Ala	Ser	Lys	Lys	Tyr	Glu	Glu	Gly	Glu	Gln	Ala	Leu	Gln			
	1025					1030					1035						
gag	gcg	cag	cag	atg	cag	aat	gag	cag	cag	ggc	cgg	ctg	cag	gtg			3159
Glu	Ala	Gln	Gln	Met	Gln	Asn	Glu	Gln	Gln	Gly	Arg	Leu	Gln	Val			
	1040					1045					1050						
gtc	cag	cgg	cag	cag	gag	tgg	ctg	cgg	cag	cag	gag	caa	cgt	gtg			3204
Val	Gln	Arg	Gln	Gln	Glu	Trp	Leu	Arg	Gln	Gln	Glu	Gln	Arg	Val			
	1055					1060					1065						
cac	cag	gag	cac	ctg	agc	ctg	gca	cag	cag	agg	ctg	cag	ctg	gac			3249
His	Gln	Glu	His	Leu	Ser	Leu	Ala	Gln	Gln	Arg	Leu	Gln	Leu	Asp			

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Arg Val Arg Gln Glu Val Pro Ala Ser Leu Pro Gly Leu Pro Pro
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agg gtt cag ggc ccg gca gcc tcc agc cgg gat gct gtc cag gcc      3339
Arg Val Gln Gly Pro Ala Ala Ser Ser Arg Asp Ala Val Gln Ala
1100                                1105                                1110

ccc gct tcc agc agt cct cag tgt agc cag cca gct gct gcc cag      3384
Pro Ala Ser Ser Ser Pro Gln Cys Ser Gln Pro Ala Ala Ala Gln
1115                                1120                                1125

gtg ccc aca cac ctt ctt gcc aag ctg ctg ctg cta aag cat aca      3429
Val Pro Thr His Leu Leu Ala Lys Leu Leu Leu Leu Lys His Thr
1130                                1135                                1140

gca gaa gag gac cac gac ttc ttg gag aat gaa cag ttc ttc ctg      3474
Ala Glu Glu Asp His Asp Phe Leu Glu Asn Glu Gln Phe Phe Leu
1145                                1150                                1155

gag act ctg aag aaa gca ccc tat aat atg gcg tac cat tct gcc      3519
Glu Thr Leu Lys Lys Ala Pro Tyr Asn Met Ala Tyr His Ser Ala
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<210> 138
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<212> PRT
<213> Mus musculus

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<222> (207)..(207)
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<400> 138

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Val Ala Leu Arg Thr Lys Lys Gly Leu Lys Gly Ser Ile Glu Asp Val
20      25      30

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Leu Gly Asp Leu Leu Gly Asp Asp Thr Thr Pro Pro Glu Lys Pro Ala
35      40      45

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```

Glu Pro Ala Ser His Ala Lys Asp Thr Ala Ser Ser Pro Gln Trp Gln
50      55      60

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Ala Ser Lys Ala Lys Phe Leu Pro Lys Asp Ser Val Glu Gly Leu Ala
65      70      75      80

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Gly Ala Asp Ala Glu Ala Ser Ser Val Ser Asp Ala Asp Pro Gln Val
85      90      95

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Phe Leu Gln Asn Met Lys Asp Leu Asp Ser Met Asp Asp Asp Leu Phe
100     105     110

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Gly Arg Ile Lys Ser His Gln Pro Ser Gly Lys Gly Ala Ala Lys Gly
115     120     125

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Pro Gly Lys Glu Gly Pro Ser Asn His Lys Pro Ala Gly Thr Leu Thr  
130 135 140

Ala Asn Glu Lys Gly Tyr Thr Met Pro Thr Lys Lys Pro Pro Pro Ser  
145 150 155 160

Ser Ser Lys Thr Gly Leu Gln Tyr Lys Lys Phe Ser Phe Glu Asp Phe  
165 170 175

Glu Asp Pro Leu Ala Gly Leu Leu Ser Asp Glu Glu Glu Glu Thr Ala  
180 185 190

Thr Lys Leu Pro Ala Val Glu Arg Lys Pro Ala Pro Lys Ser Xaa Gly  
195 200 205

Ala Ala Ala Gly Gln Gly Pro Ser Val Pro Leu Thr Pro Gly Asp Thr  
210 215 220

Pro Ile Arg Lys Lys Glu Leu Leu Phe Asp Glu Gly Asp Asp Ile Met  
225 230 235 240

Thr Thr Leu Gly Phe Glu Asp Ser Pro Lys Ala Glu Arg Lys Lys Thr  
245 250 255

Gly Asp Gln Glu Gly Pro Leu Pro Ala Arg Ser Lys Leu Asp Glu Leu  
260 265 270

Leu Gly Arg Gly Thr Ala Ala Lys Leu Leu Thr Arg Pro Gly Thr Gly  
275 280 285

Glu Arg Arg Glu Phe Gln Leu Asp Lys Lys Tyr Gln Lys Met Gly Gly  
290 295 300

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Pro Asp Pro Lys Gly Glu Ser Leu Gly Phe Lys Gln Ser Ser Pro Pro  
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Ala Ser Ser Pro Ile His Pro Arg Lys Gly Gly Ala Asp Trp Leu Gly  
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Leu Lys Asp Asn Asp Leu Asp Leu Leu Ser Pro Ser Pro Val Gln Lys  
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Asn Gln Pro Ser Ala Pro Glu Pro Gln Ser Ala Pro Thr Gly Leu Pro  
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Ser Ala Ala Lys Pro Pro Ala Lys Gly Ala Arg Pro Ser Leu Lys Ala  
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Ser Gln Ala Ser Ser Pro Lys Ala Ser Glu Glu Lys Glu Asp Asp Trp  
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Leu Ser His Val Ile Ser Gln Lys Lys Ser Gln Asn Leu Ala Arg Glu  
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Glu Arg Ala Gly Pro Pro Lys Asp Leu Ala Ser Leu Gly Ser Leu Gly  
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Gln Thr Pro Ser Gly Ser Leu Pro Val Ala Gln Val Leu Glu Gln Ala  
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Pro Ala Gly Glu Ala Ser Lys Pro Thr Thr Gln Gly Met Ala Ala Val  
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Arg Pro Gly Val Thr Gly Ser Ser Met Ser Trp Ser Gln Ala Thr Thr  
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Val Leu Pro Val Asp Asp Pro Lys Lys Gly Ala Ala Ser Ala Ser Gly  
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Leu Glu Leu Glu Arg Ala Gln His Arg Met Leu Leu Glu Ser Leu Gln  
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Gln Arg His Gln Ala Asp Leu Glu Leu Ile Glu Asp Ala His Arg Ser  
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gca Ala	aat Asn 1370	cac His	tca Ser	gaa Glu	gaa Glu	ctc Leu 1375	ttt Phe	gaa Glu	tac Tyr	aat Asn	ttc Phe 1380	tat Tyr	gat Asp	gat Asp	4149
tat Tyr	gat Asp 1385	caa Gln	aca Thr	gga Gly	gat Asp	cac His 1390	tat Tyr	act Thr	ggg Gly	cag Gln	tat Tyr 1395	aaa Lys	ggt Val	ttt Phe	4194
gcc Ala	aag Lys 1400	gtt Val	gat Asp	atc Ile	act Thr	ctt Leu 1405	aaa Lys	aac Asn	ggg Gly	gtt Val	att Ile 1410	atc Ile	aag Lys	tca Ser	4239
ggg Gly	act Thr 1415	gag Glu	tta Leu	act Thr	cag Gln	tat Tyr 1420	acg Thr	aca Thr	gcg Ala	gaa Glu	gtt Val 1425	gat Asp	acc Thr	act Thr	4284
aaa Lys	ggg Gly 1430	gct Ala	atc Ile	aca Thr	att Ile	aag Lys 1435	ttc Phe	aag Lys	gaa Glu	gcc Ala	ttt Phe 1440	ctg Leu	cgt Arg	tct Ser	4329
gtt Val	tca Ser 1445	att Ile	gat Asp	tca Ser	gcc Ala	ttc Phe 1450	caa Gln	gct Ala	gaa Glu	agt Ser	tat Tyr 1455	atc Ile	caa Gln	atg Met	4374
aaa Lys	cgt Arg 1460	att Ile	gcg Ala	gtt Val	ggg Gly	act Thr 1465	ttt Phe	gaa Glu	aat Asn	acc Thr	tat Tyr 1470	att Ile	aat Asn	act Thr	4419
gtc Val	aat Asn 1475	ggg Gly	gta Val	act Thr	tac Tyr	agt Ser 1480	tca Ser	aat Asn	aca Thr	gtg Val	aaa Lys 1485	aca Thr	act Thr	act Thr	4464
cct Pro	gag Glu 1490	gat Asp	cct Pro	gca Ala	gac Asp	cct Pro 1495	act Thr	gat Asp	ccg Pro	caa Gln	gat Asp 1500	cca Pro	tca Ser	tca Ser	4509
ccg Pro	cgg Arg 1505	act Thr	tca Ser	act Thr	gta Val	att Ile 1510	atc Ile	tac Tyr	aaa Lys	cct Pro	caa Gln 1515	tca Ser	act Thr	gct Ala	4554
tat Tyr	caa Gln 1520	cca Pro	agc Ser	tct Ser	gtc Val	caa Gln 1525	aaa Lys	acg Thr	tta Leu	cca Pro	aat Asn 1530	acg Thr	gga Gly	gta Val	4599
aca Thr	aac Asn 1535	aat Asn	gct Ala	tat Tyr	atg Met	cct Pro 1540	tta Leu	ctt Leu	ggg Gly	att Ile	att Ile 1545	ggc Gly	tta Leu	gtt Val	4644
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 <213> Streptococcus mutans

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 Seite 832

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Thr Lys Val Val Gly Thr Gln Thr Gly Asn Pro Ala Thr Asn Leu Pro  
50 55 60

Glu Ala Gln Gly Ser Ala Ser Lys Gln Ala Glu Gln Ser Gln Thr Lys  
65 70 75 80

Leu Glu Arg Gln Met Val His Thr Ile Glu Val Pro Lys Thr Asp Leu  
85 90 95

Asp Gln Ala Ala Lys Asp Ala Lys Ser Ala Gly Val Asn Val Val Gln  
100 105 110

Asp Ala Asp Val Asn Lys Gly Thr Val Lys Thr Ala Glu Glu Ala Val  
115 120 125

Gln Lys Glu Thr Glu Ile Lys Glu Asp Tyr Thr Lys Gln Ala Glu Asp  
130 135 140

Ile Lys Lys Thr Thr Asp Gln Tyr Lys Ser Asp Val Ala Ala His Glu  
145 150 155 160

Ala Glu Val Ala Lys Ile Lys Ala Lys Asn Gln Ala Thr Lys Glu Gln  
165 170 175

Tyr Gly Lys Asp Met Val Ala His Lys Ala Glu Val Glu Arg Ile Asn  
180 185 190

Ala Ala Asn Ala Ala Ser Lys Thr Ala Tyr Glu Ala Lys Leu Ala Gln  
195 200 205

Tyr Gln Ala Asp Leu Ala Ala Val Gln Lys Thr Asn Ala Ala Asn Gln  
210 215 220

Ala Ser Tyr Gln Lys Ala Leu Ala Ala Tyr Gln Ala Glu Leu Lys Arg  
225 230 235 240

Val Gln Glu Ala Asn Ala Ala Ala Lys Ala Ala Tyr Asp Thr Ala Val  
245 250 255

Ala Ala Asn Asn Ala Lys Asn Thr Glu Ile Ala Ala Ala Asn Glu Glu  
260 265 270

Ile Arg Lys Arg Asn Ala Thr Ala Lys Ala Glu Tyr Glu Thr Lys Leu  
275 280 285

Ala Gln Tyr Gln Ala Glu Leu Lys Arg Val Gln Glu Ala Asn Ala Ala  
290 295 300

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Asn Glu Ala Asp Tyr Gln Ala Lys Leu Thr Ala Tyr Gln Thr Glu Leu  
 305 310 315 320  
 Ala Arg Val Gln Lys Ala Asn Ala Asp Ala Lys Ala Ala Tyr Glu Ala  
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 340 345 350  
 Thr Ala Ile Lys Gln Arg Asn Glu Asn Ala Lys Ala Thr Tyr Glu Ala  
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 Ala Leu Lys Gln Tyr Glu Ala Asp Leu Ala Ala Val Lys Lys Ala Asn  
 370 375 380  
 Ala Ala Asn Glu Ala Asp Tyr Gln Ala Lys Leu Thr Ala Tyr Gln Thr  
 385 390 395 400  
 Glu Leu Ala Arg Val Gln Lys Ala Asn Ala Asp Ala Lys Ala Ala Tyr  
 405 410 415  
 Glu Ala Ala Val Ala Ala Asn Asn Ala Ala Asn Ala Ala Leu Thr Ala  
 420 425 430  
 Glu Asn Thr Ala Ile Lys Lys Arg Asn Ala Asp Ala Lys Ala Asp Tyr  
 435 440 445  
 Glu Ala Lys Leu Ala Lys Tyr Gln Ala Asp Leu Ala Lys Tyr Gln Lys  
 450 455 460  
 Asp Leu Ala Asp Tyr Pro Val Lys Leu Lys Ala Tyr Glu Asp Glu Gln  
 465 470 475 480  
 Ala Ser Ile Lys Ala Ala Leu Ala Glu Leu Glu Lys His Lys Asn Glu  
 485 490 495  
 Asp Gly Asn Leu Thr Glu Pro Ser Ala Gln Asn Leu Val Tyr Asp Leu  
 500 505 510  
 Glu Pro Asn Ala Asn Leu Ser Leu Thr Thr Asp Gly Lys Phe Leu Lys  
 515 520 525  
 Ala Ser Ala Val Asp Asp Ala Phe Ser Lys Ser Thr Ser Lys Ala Lys  
 530 535 540  
 Tyr Asp Gln Lys Ile Leu Gln Leu Asp Asp Leu Asp Ile Thr Asn Leu  
 545 550 555 560  
 Glu Gln Ser Asn Asp Val Ala Ser Ser Met Glu Leu Tyr Gly Asn Phe  
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PF5908220090123\_F\_60652\_PCT\_Sequence\_listing.txt

Gly Asp Lys Ala Gly Trp Ser Thr Thr Val Ser Asn Asn Ser Gln Val  
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Lys Trp Gly Ser Val Leu Leu Glu Arg Gly Gln Ser Ala Thr Ala Thr  
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Tyr Thr Asn Leu Gln Asn Ser Tyr Tyr Asn Gly Lys Lys Ile Ser Lys  
610 615 620

Ile Val Tyr Lys Tyr Thr Val Asp Pro Lys Ser Lys Phe Gln Gly Gln  
625 630 635 640

Lys Val Trp Leu Gly Ile Phe Thr Asp Pro Thr Leu Gly Val Phe Ala  
645 650 655

Ser Ala Tyr Thr Gly Gln Val Glu Lys Asn Thr Ser Ile Phe Ile Lys  
660 665 670

Asn Glu Phe Thr Phe Tyr Asp Glu Asp Gly Lys Pro Ile Asn Phe Asp  
675 680 685

Asn Ala Leu Leu Ser Val Ala Ser Leu Asn Arg Glu Asn Asn Ser Ile  
690 695 700

Glu Met Ala Lys Asp Tyr Thr Gly Lys Phe Val Lys Ile Ser Gly Ser  
705 710 715 720

Ser Ile Gly Glu Lys Asn Gly Met Ile Tyr Ala Thr Asp Thr Leu Asn  
725 730 735

Phe Arg Gln Gly Gln Gly Gly Ala Arg Trp Thr Met Tyr Thr Arg Ala  
740 745 750

Ser Glu Pro Gly Ser Gly Trp Asp Ser Ser Asp Ala Pro Asn Ser Trp  
755 760 765

Tyr Gly Ala Gly Ala Ile Arg Met Ser Gly Pro Asn Asn Ser Val Thr  
770 775 780

Leu Gly Ala Ile Ser Ser Thr Leu Val Val Pro Ala Asp Pro Thr Met  
785 790 795 800

Ala Ile Glu Thr Gly Lys Lys Pro Asn Ile Trp Tyr Ser Leu Asn Gly  
805 810 815

Lys Ile Arg Ala Val Asn Leu Pro Lys Val Thr Lys Glu Lys Pro Thr  
820 825 830

Pro Pro Val Lys Pro Thr Ala Pro Thr Lys Pro Thr Tyr Glu Thr Glu  
835 840 845

Lys Pro Leu Lys Pro Ala Pro Val Ala Pro Asn Tyr Glu Lys Glu Pro  
 850 855 860  
 Thr Pro Pro Thr Arg Thr Pro Asp Gln Ala Glu Pro Lys Lys Pro Thr  
 865 870 875 880  
 Pro Pro Thr Tyr Glu Thr Glu Lys Pro Leu Glu Pro Ala Pro Val Glu  
 885 890 895  
 Pro Ser Tyr Glu Ala Glu Pro Thr Pro Pro Thr Arg Thr Pro Asp Gln  
 900 905 910  
 Ala Glu Pro Asn Lys Pro Thr Pro Pro Thr Tyr Glu Thr Glu Lys Pro  
 915 920 925  
 Leu Glu Pro Ala Pro Val Glu Pro Ser Tyr Glu Ala Glu Pro Thr Pro  
 930 935 940  
 Pro Thr Pro Thr Pro Asp Gln Pro Glu Pro Asn Lys Pro Val Glu Pro  
 945 950 955 960  
 Thr Tyr Glu Val Ile Pro Thr Pro Pro Thr Asp Pro Val Tyr Gln Asp  
 965 970 975  
 Leu Pro Thr Pro Pro Ser Ile Pro Thr Val His Phe His Tyr Phe Lys  
 980 985 990  
 Leu Ala Val Gln Pro Gln Val Asn Lys Glu Ile Arg Asn Asn Asn Asp  
 995 1000 1005  
 Val Asn Ile Asp Arg Thr Leu Val Ala Lys Gln Ser Val Val Lys  
 1010 1015 1020  
 Phe Gln Leu Lys Thr Ala Asp Leu Pro Ala Gly Arg Asp Glu Thr  
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 Thr Ser Phe Val Leu Val Asp Pro Leu Pro Ser Gly Tyr Gln Phe  
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 Asn Pro Glu Ala Thr Lys Ala Ala Ser Pro Gly Phe Asp Val Ala  
 1055 1060 1065  
 Tyr Asp Asn Ala Thr Asn Thr Val Thr Phe Lys Ala Thr Ala Ala  
 1070 1075 1080  
 Thr Leu Ala Thr Phe Asn Ala Asp Leu Thr Lys Ser Val Ala Thr  
 1085 1090 1095  
 Ile Tyr Pro Thr Val Val Gly Gln Val Leu Asn Asp Gly Ala Thr  
 1100 1105 1110  
 Tyr Lys Asn Asn Phe Ser Leu Thr Val Asn Asp Ala Tyr Gly Ile  
 Seite 836



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Pro	Asp	Asn	Pro	Asn	Asn	Asn	Tyr	Ile	Lys	Pro	Thr	Lys	Val	Asn	
1145						1150					1155				
Lys	Asn	Glu	Asn	Gly	Val	Val	Ile	Asp	Gly	Lys	Thr	Val	Leu	Ala	
1160						1165					1170				
Gly	Ser	Thr	Asn	Tyr	Tyr	Glu	Leu	Thr	Trp	Asp	Leu	Asp	Gln	Tyr	
1175						1180					1185				
Lys	Asn	Asp	Arg	Ser	Ser	Ala	Asp	Thr	Ile	Gln	Gln	Gly	Phe	Tyr	
1190						1195					1200				
Tyr	Val	Asp	Asp	Tyr	Pro	Glu	Glu	Ala	Leu	Glu	Leu	Arg	Gln	Asp	
1205						1210					1215				
Leu	Val	Lys	Ile	Thr	Asp	Ala	Asn	Gly	Asn	Glu	Val	Thr	Gly	Val	
1220						1225					1230				
Ser	Val	Asp	Asn	Tyr	Thr	Ser	Leu	Glu	Ala	Ala	Pro	Gln	Glu	Ile	
1235						1240					1245				
Arg	Asp	Val	Leu	Ser	Lys	Ala	Gly	Ile	Arg	Pro	Lys	Gly	Ala	Phe	
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Gln	Ile	Phe	Arg	Ala	Asp	Asn	Pro	Arg	Glu	Phe	Tyr	Asp	Thr	Tyr	
1265						1270					1275				
Val	Lys	Thr	Gly	Ile	Asp	Leu	Lys	Ile	Val	Ser	Pro	Met	Val	Val	
1280						1285					1290				
Lys	Lys	Gln	Met	Gly	Gln	Thr	Gly	Gly	Ser	Tyr	Glu	Asp	Gln	Ala	
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Tyr	Gln	Ile	Asp	Phe	Gly	Asn	Gly	Tyr	Ala	Ser	Asn	Ile	Val	Ile	
1310						1315					1320				
Asn	Asn	Val	Pro	Lys	Ile	Asn	Pro	Lys	Lys	Asp	Val	Thr	Leu	Thr	
1325						1330					1335				
Leu	Asp	Pro	Ala	Asp	Thr	Asn	Asn	Val	Asp	Gly	Gln	Thr	Ile	Pro	
1340						1345					1350				
Leu	Asn	Thr	Val	Phe	Asn	Tyr	Arg	Leu	Ile	Gly	Gly	Ile	Ile	Pro	
1355						1360					1365				
Ala	Asn	His	Ser	Glu	Glu	Leu	Phe	Glu	Tyr	Asn	Phe	Tyr	Asp	Asp	
1370						1375					1380				

Tyr Asp Gln Thr Gly Asp His Tyr Thr Gly Gln Tyr Lys Val Phe  
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Ala Lys Val Asp Ile Thr Leu Lys Asn Gly Val Ile Ile Lys Ser  
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Gly Thr Glu Leu Thr Gln Tyr Thr Thr Ala Glu Val Asp Thr Thr  
1415 1420 1425  
Lys Gly Ala Ile Thr Ile Lys Phe Lys Glu Ala Phe Leu Arg Ser  
1430 1435 1440  
Val Ser Ile Asp Ser Ala Phe Gln Ala Glu Ser Tyr Ile Gln Met  
1445 1450 1455  
Lys Arg Ile Ala Val Gly Thr Phe Glu Asn Thr Tyr Ile Asn Thr  
1460 1465 1470  
Val Asn Gly Val Thr Tyr Ser Ser Asn Thr Val Lys Thr Thr Thr  
1475 1480 1485  
Pro Glu Asp Pro Ala Asp Pro Thr Asp Pro Gln Asp Pro Ser Ser  
1490 1495 1500  
Pro Arg Thr Ser Thr Val Ile Ile Tyr Lys Pro Gln Ser Thr Ala  
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Tyr Gln Pro Ser Ser Val Gln Lys Thr Leu Pro Asn Thr Gly Val  
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Thr Asn Asn Ala Tyr Met Pro Leu Leu Gly Ile Ile Gly Leu Val  
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23

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18

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 ctg ctc ttg ctt tca gta cag aag aga agc atg tcc ttc caa gga atc 99  
 Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met Ser Phe Gln Gly Ile  
                   15                          20                          25  
  
 aga caa cct gtg acc gtc act gag cta gta gat tct ggt ata ttg aga 147  
 Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp Ser Gly Ile Leu Arg  
           30                          35                          40  
  
 ccg tcc act gtc aat gaa ctg gaa tct ggt cag att tct tat gac gag 195  
 Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln Ile Ser Tyr Asp Glu  
   45                          50                          55                          60  
  
 gtt ggt gag aga att aag gac ttc ctc cag ggt tca agc tgc ata gca 243  
 Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly Ser Ser Cys Ile Ala  
           65                          70                          75  
  
 ggc ata tac aat gag acc aca aaa cag aag ctt ggc att tat gag gcc 291  
 Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu Gly Ile Tyr Glu Ala  
           80                          85                          90  
  
 atg aaa att ggc tta gtc cga cct ggt act gct ctg gag ttg ctg gaa 339  
 Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala Leu Glu Leu Leu Glu  
           95                          100                          105  
  
 gcc caa gca gct act ggc ttt ata gtg gat cct gtt agc aac ttg agg 387  
 Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro Val Ser Asn Leu Arg  
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 Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe  
   125                          130                          135                          140  
  
 aaa gag aag ctc ctg tct gca gaa cga gct gtc act ggg tat aat gat 483  
 Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp  
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 cct gaa aca gga aac atc atc tct ttg ttc caa gcc atg aat aag gaa 531  
   Seite 839

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Leu	Ile	Glu	Lys	Gly	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala		
		175					180					185					
acc	ggg	ggg	atc	att	gac	cca	aag	gag	agc	cat	cgt	tta	cca	gtt	gac		627
Thr	Gly	Gly	Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg	Leu	Pro	Val	Asp		
	190					195					200						
ata	gca	tat	aag	agg	ggc	tat	ttc	aat	gag	gaa	ctc	agt	gag	att	ctc		675
Ile	Ala	Tyr	Lys	Arg	Gly	Tyr	Phe	Asn	Glu	Glu	Leu	Ser	Glu	Ile	Leu		
	205				210					215					220		
tca	gat	cca	agt	gat	gat	acc	aaa	gga	ttt	ttt	gac	ccc	aac	act	gaa		723
Ser	Asp	Pro	Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	Glu		
				225					230					235			
gaa	aat	ctt	acc	tat	ctg	caa	cta	aaa	gaa	aga	tgc	att	aag	gat	gag		771
Glu	Asn	Leu	Thr	Tyr	Leu	Gln	Leu	Lys	Glu	Arg	Cys	Ile	Lys	Asp	Glu		
			240					245					250				
gaa	aca	ggg	ctc	tgt	ctt	ctg	cct	ctg	aaa	gaa	aag	aag	aaa	cag	gtg		819
Glu	Thr	Gly	Leu	Cys	Leu	Leu	Pro	Leu	Lys	Glu	Lys	Lys	Lys	Gln	Val		
		255					260					265					
cag	aca	tca	caa	aag	aat	acc	ctc	agg	aag	cgt	aga	gtg	gtc	ata	gtt		867
Gln	Thr	Ser	Gln	Lys	Asn	Thr	Leu	Arg	Lys	Arg	Arg	Val	Val	Ile	Val		
	270					275					280						
gac	cca	gaa	acc	aat	aaa	gaa	atg	tct	gtt	cag	gag	ggg	gtc	gac	ctg		915
Asp	Pro	Glu	Thr	Asn	Lys	Glu	Met	Ser	Val	Gln	Glu	Gly	Val	Asp	Leu		
	285				290					295					300		
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Gln	Pro	Ser	Leu	Ile	Ser												
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Ser	Val	Gln	Lys	Arg	Ser	Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val		
			20					25					30				
Thr	Val	Thr	Glu	Leu	Val	Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val		
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Asn	Glu	Leu	Glu	Ser	Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg		
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Ile	Lys	Asp	Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn		
65					70				75						80		
Glu	Thr	Thr	Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly		
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Leu Val Arg Pro Gly Thr Ala Leu Glu Leu Leu Glu Ala Gln Ala Ala  
100 105 110

Thr Gly Phe Ile Val Asp Pro Val Ser Asn Leu Arg Leu Pro Val Glu  
115 120 125

Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe Lys Glu Lys Leu  
130 135 140

Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp Pro Glu Thr Gly  
145 150 155 160

Asn Ile Ile Ser Leu Phe Gln Ala Met Asn Lys Glu Leu Ile Glu Lys  
165 170 175

Gly His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly Ile  
180 185 190

Ile Asp Pro Lys Glu Ser His Arg Leu Pro Val Asp Ile Ala Tyr Lys  
195 200 205

Arg Gly Tyr Phe Asn Glu Glu Leu Ser Glu Ile Leu Ser Asp Pro Ser  
210 215 220

Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr Glu Glu Asn Leu Thr  
225 230 235 240

Tyr Leu Gln Leu Lys Glu Arg Cys Ile Lys Asp Glu Glu Thr Gly Leu  
245 250 255

Cys Leu Leu Pro Leu Lys Glu Lys Lys Lys Gln Val Gln Thr Ser Gln  
260 265 270

Lys Asn Thr Leu Arg Lys Arg Arg Val Val Ile Val Asp Pro Glu Thr  
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290 295 300

Ile Ser  
305

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56

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Leu Leu Leu Ser Val Gln Lys Arg Ser Met Ser Phe Gln Gly Ile Arg
20 25 30

caa cct gtg acc gtc act gag cta gta gat tct ggt ata ttg aga ccg 144
Gln Pro Val Thr Val Thr Glu Leu Val Asp Ser Gly Ile Leu Arg Pro
35 40 45

tcc act gtc aat gaa ctg gaa tct ggt cag att tct tat gac gag gtt 192
Ser Thr Val Asn Glu Leu Glu Ser Gly Gln Ile Ser Tyr Asp Glu Val
50 55 60

ggt gag aga att aag gac ttc ctc cag ggt tca agc tgc ata gca ggc 240
Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly Ser Ser Cys Ile Ala Gly
65 70 75 80

ata tac aat gag acc aca aaa cag aag ctt ggc att tat gag gcc atg 288
Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu Gly Ile Tyr Glu Ala Met
85 90 95

aaa att ggc tta gtc cga cct ggt act gct ctg gag ttg ctg gaa gcc 336
Lys Ile Gly Leu Val Arg Pro Gly Thr Ala Leu Glu Leu Glu Ala
100 105 110

caa gca gct act ggc ttt ata gtg gat cct gtt agc aac ttg agg tta 384
Gln Ala Ala Thr Gly Phe Ile Val Asp Pro Val Ser Asn Leu Arg Leu
115 120 125

cca gtg gag gaa gcc tac aag aga ggt ctg gtg ggc att gag ttc aaa 432
Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe Lys
130 135 140

gag aag ctc ctg tct gca gaa cga gct gtc act ggg tat aat gat cct 480
Glu Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp Pro
145 150 155 160

gaa aca gga aac atc atc tct ttg ttc caa gcc atg aat aag gaa ctc 528
Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln Ala Met Asn Lys Glu Leu
165 170 175

atc gaa aag ggc cac ggt att cgc tta tta gaa gca cag atc gca acc 576
Ile Glu Lys Gly His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr
180 185 190

ggg ggg atc att gac cca aag gag agc cat cgt tta cca gtt gac ata 624
Gly Gly Ile Ile Asp Pro Lys Glu Ser His Arg Leu Pro Val Asp Ile
195 200 205

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gca tat aag agg ggc tat ttc aat gag gaa ctc agt gag att ctc tca Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu Leu Ser Glu Ile Leu Ser 210 215 220	672
gat cca agt gat gat acc aaa gga ttt ttt gac ccc aac act gaa gaa Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr Glu Glu 225 230 235 240	720
aat ctt acc tat ctg caa cta aaa gaa aga tgc att aag gat gag gaa Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg Cys Ile Lys Asp Glu Glu 245 250 255	768
aca ggg ctc tgt ctt ctg cct ctg aaa gaa aag aag aaa cag gtg cag Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu Lys Lys Lys Gln Val Gln 260 265 270	816
aca tca caa aag aat acc ctc agg aag cgt aga gtg gtc ata gtt gac Thr Ser Gln Lys Asn Thr Leu Arg Lys Arg Arg Val Val Ile Val Asp 275 280 285	864
cca gaa acc aat aaa gaa atg tct gtt cag gag ggg gtc gac ctg cag Pro Glu Thr Asn Lys Glu Met Ser Val Gln Glu Gly Val Asp Leu Gln 290 295 300	912
cca agc tta att agc tgagaattct ccagc Pro Ser Leu Ile Ser 305	942

<210> 150  
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 <213> Homo sapiens

<400> 150

Ala Lys Glu Phe His His His His His His Glu Pro His Thr Gly Leu 1 5 10 15
Leu Leu Leu Ser Val Gln Lys Arg Ser Met Ser Phe Gln Gly Ile Arg 20 25 30
Gln Pro Val Thr Val Thr Glu Leu Val Asp Ser Gly Ile Leu Arg Pro 35 40 45
Ser Thr Val Asn Glu Leu Glu Ser Gly Gln Ile Ser Tyr Asp Glu Val 50 55 60
Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly Ser Ser Cys Ile Ala Gly 65 70 75 80
Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu Gly Ile Tyr Glu Ala Met 85 90 95
Lys Ile Gly Leu Val Arg Pro Gly Thr Ala Leu Glu Leu Leu Glu Ala 100 105 110
Gln Ala Ala Thr Gly Phe Ile Val Asp Pro Val Ser Asn Leu Arg Leu 115 120 125

Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe Lys  
130 135 140

Glu Lys Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp Pro  
145 150 155 160

Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln Ala Met Asn Lys Glu Leu  
165 170 175

Ile Glu Lys Gly His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr  
180 185 190

Gly Gly Ile Ile Asp Pro Lys Glu Ser His Arg Leu Pro Val Asp Ile  
195 200 205

Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu Leu Ser Glu Ile Leu Ser  
210 215 220

Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr Glu Glu  
225 230 235 240

Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg Cys Ile Lys Asp Glu Glu  
245 250 255

Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu Lys Lys Lys Gln Val Gln  
260 265 270

Thr Ser Gln Lys Asn Thr Leu Arg Lys Arg Arg Val Val Ile Val Asp  
275 280 285

Pro Glu Thr Asn Lys Glu Met Ser Val Gln Glu Gly Val Asp Leu Gln  
290 295 300

Pro Ser Leu Ile Ser  
305

<210> 151  
<211> 50  
<212> DNA  
<213> Artificial, Primersequenz

<400> 151  
gctaaggaat tccatcacca tcaccatcac gagccacata ctggtctgct 50

<210> 152  
<211> 922  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (5)..(922)

<400> 152  
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Seite 844



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Leu	Ser	Val	Gln	Lys	Arg	Ser	Met	Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	
				20					25					30		
gtg	acc	gtc	act	gag	cta	gta	gat	tct	ggg	ata	ttg	aga	ccg	tcc	act	145
Val	Thr	Val	Thr	Glu	Leu	Val	Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	
			35					40					45			
gtc	aat	gaa	ctg	gaa	tct	ggg	cag	att	tct	tat	gac	gag	gtt	ggg	gag	193
Val	Asn	Glu	Leu	Glu	Ser	Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	
		50					55					60				
aga	att	aag	gac	ttc	ctc	cag	ggg	tca	agc	tgc	ata	gca	ggc	ata	tac	241
Arg	Ile	Lys	Asp	Phe	Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	
	65					70					75					
aat	gag	acc	aca	aaa	cag	aag	ctt	ggc	att	tat	gag	gcc	atg	aaa	att	289
Asn	Glu	Thr	Thr	Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	
					85				90						95	
ggc	tta	gtc	cga	cct	ggg	act	gct	ctg	gag	ttg	ctg	gaa	gcc	caa	gca	337
Gly	Leu	Val	Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	
				100					105					110		
gct	act	ggc	ttt	ata	gtg	gat	cct	gtt	agc	aac	ttg	agg	tta	cca	gtg	385
Ala	Thr	Gly	Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu	Pro	Val	
			115					120					125			
gag	gaa	gcc	tac	aag	aga	ggg	ctg	gtg	ggc	att	gag	ttc	aaa	gag	aag	433
Glu	Glu	Ala	Tyr	Lys	Arg	Gly	Leu	Val	Gly	Ile	Glu	Phe	Lys	Glu	Lys	
		130					135					140				
ctc	ctg	tct	gca	gaa	cga	gct	gtc	act	ggg	tat	aat	gat	cct	gaa	aca	481
Leu	Leu	Ser	Ala	Glu	Arg	Ala	Val	Thr	Gly	Tyr	Asn	Asp	Pro	Glu	Thr	
	145					150					155					
gga	aac	atc	atc	tct	ttg	ttc	caa	gcc	atg	aat	aag	gaa	ctc	atc	gaa	529
Gly	Asn	Ile	Ile	Ser	Leu	Phe	Gln	Ala	Met	Asn	Lys	Glu	Leu	Ile	Glu	
					165					170					175	
aag	ggc	cac	ggg	att	cgc	tta	tta	gaa	gca	cag	atc	gca	acc	ggg	ggg	577
Lys	Gly	His	Gly	Ile	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Thr	Gly	Gly	
				180					185					190		
atc	att	gac	cca	aag	gag	agc	cat	cgt	tta	cca	gtt	gac	ata	gca	tat	625
Ile	Ile	Asp	Pro	Lys	Glu	Ser	His	Arg	Leu	Pro	Val	Asp	Ile	Ala	Tyr	
			195					200					205			
aag	agg	ggc	tat	ttc	aat	gag	gaa	ctc	agt	gag	att	ctc	tca	gat	cca	673
Lys	Arg	Gly	Tyr	Phe	Asn	Glu	Glu	Leu	Ser	Glu	Ile	Leu	Ser	Asp	Pro	
		210					215					220				
agt	gat	gat	acc	aaa	gga	ttt	ttt	gac	ccc	aac	act	gaa	gaa	aat	ctt	721
Ser	Asp	Asp	Thr	Lys	Gly	Phe	Phe	Asp	Pro	Asn	Thr	Glu	Glu	Asn	Leu	
						230					235					
acc	tat	ctg	caa	cta	aaa	gaa	aga	tgc	att	aag	gat	gag	gaa	aca	ggg	769
Thr	Tyr	Leu	Gln	Leu	Lys	Glu	Arg	Cys	Ile	Lys	Asp	Glu	Glu	Thr	Gly	
					245					250					255	
ctc	tgt	ctt	ctg	cct	ctg	aaa	gaa	aag	aag	aaa	cag	gtg	cag	aca	tca	817
Leu	Cys	Leu	Leu	Pro	Leu	Lys	Glu	Lys	Lys	Lys	Gln	Val	Gln	Thr	Ser	
				260					265					270		
caa	aag	aat	acc	ctc	agg	aag	cgt	aga	gtg	gtc	ata	gtt	gac	cca	gaa	865
Gln	Lys	Asn	Thr	Leu	Arg	Lys	Arg	Arg	Val	Val	Ile	Val	Asp	Pro	Glu	

acc aat aaa gaa atg tct gtt cag gag ggg gtc gac ctg cag cca agc 913  
Thr Asn Lys Glu Met Ser Val Gln Glu Gly Val Asp Leu Gln Pro Ser  
290 300

tta att agc 922  
Leu Ile Ser  
305

<210> 153  
<211> 306  
<212> PRT  
<213> Homo sapiens  
<400> 153

Met His His His His His His Glu Pro His Thr Gly Leu Leu Leu Leu  
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Ser Val Gln Lys Arg Ser Met Ser Phe Gln Gly Ile Arg Gln Pro Val  
20 25 30

Thr Val Thr Glu Leu Val Asp Ser Gly Ile Leu Arg Pro Ser Thr Val  
35 40 45

Asn Glu Leu Glu Ser Gly Gln Ile Ser Tyr Asp Glu Val Gly Glu Arg  
50 55 60

Ile Lys Asp Phe Leu Gln Gly Ser Ser Cys Ile Ala Gly Ile Tyr Asn  
65 70 75 80

Glu Thr Thr Lys Gln Lys Leu Gly Ile Tyr Glu Ala Met Lys Ile Gly  
85 90 95

Leu Val Arg Pro Gly Thr Ala Leu Glu Leu Leu Glu Ala Gln Ala Ala  
100 105 110

Thr Gly Phe Ile Val Asp Pro Val Ser Asn Leu Arg Leu Pro Val Glu  
115 120 125

Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe Lys Glu Lys Leu  
130 135 140

Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp Pro Glu Thr Gly  
145 150 155 160

Asn Ile Ile Ser Leu Phe Gln Ala Met Asn Lys Glu Leu Ile Glu Lys  
165 170 175

Gly His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala Thr Gly Gly Ile  
180 185 190

Ile Asp Pro Lys Glu Ser His Arg Leu Pro Val Asp Ile Ala Tyr Lys  
195 200 205

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Arg Gly Tyr Phe Asn Glu Glu Leu Ser Glu Ile Leu Ser Asp Pro Ser  
210 215 220

Asp Asp Thr Lys Gly Phe Phe Asp Pro Asn Thr Glu Glu Asn Leu Thr  
225 230 235 240

Tyr Leu Gln Leu Lys Glu Arg Cys Ile Lys Asp Glu Glu Thr Gly Leu  
245 250 255

Cys Leu Leu Pro Leu Lys Glu Lys Lys Lys Gln Val Gln Thr Ser Gln  
260 265 270

Lys Asn Thr Leu Arg Lys Arg Arg Val Val Ile Val Asp Pro Glu Thr  
275 280 285

Asn Lys Glu Met Ser Val Gln Glu Gly Val Asp Leu Gln Pro Ser Leu  
290 295 300

Ile Ser  
305

<210> 154  
<211> 45  
<212> DNA  
<213> Artificial, Primersequenz

<400> 154  
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<210> 155  
<211> 20  
<212> DNA  
<213> Artificial, Primersequenz

<400> 155  
gctaattaag cttggctgca 20

<210> 156  
<211> 283  
<212> PRT  
<213> Homo sapiens

<220>  
<221> PEPTIDE  
<222> (1)..(283)

<400> 156  
Met Arg Gly Ser His His His His His His Gly Ser Ala Cys Glu Leu  
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Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met  
20 25 30

Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
35 40 45

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Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
50 55 60

Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
65 70 75 80

Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
85 90 95

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
100 105 110

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
115 120 125

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
130 135 140

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
145 150 155 160

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
165 170 175

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
180 185 190

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
195 200 205

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
210 215 220

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
225 230 235 240

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
245 250 255

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
260 265 270

Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn  
275 280

<210> 157  
<211> 274  
<212> PRT  
<213> Homo sapiens

<220>

&lt;221&gt; PEPTIDE

&lt;222&gt; (1)..(274)

&lt;400&gt; 157

Met Arg Gly Ser His His His His His His Gly Ser Ala Cys Glu Leu  
 1 5 10 15

Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met  
 20 25 30

Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
 35 40 45

Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
 50 55 60

Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
 65 70 75 80

Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
 85 90 95

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
 100 105 110

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
 115 120 125

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
 130 135 140

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
 145 150 155 160

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
 165 170 175

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
 180 185 190

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
 195 200 205

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
 210 215 220

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
 225 230 235 240

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
 245 250 255

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
260 265 270

Lys Lys

<210> 158  
<211> 272  
<212> PRT  
<213> Homo sapiens

<220>  
<221> PEPTIDE  
<222> (1)..(272)

<400> 158

Met Arg Gly Ser His His His His His His Gly Ser Ala Cys Glu Leu  
1 5 10 15

Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met  
20 25 30

Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
35 40 45

Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
50 55 60

Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
65 70 75 80

Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
85 90 95

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
100 105 110

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
115 120 125

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
130 135 140

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
145 150 155 160

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
165 170 175

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
180 185 190

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
Seite 850

195

200

205

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
 210 215 220

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Thr Lys Gly Phe Phe  
 225 230 235 240

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
 245 250 255

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
 260 265 270

<210> 159  
 <211> 948  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (1)..(945)

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 1 5 10 15  
 gag cca cat act ggt ctg ctc ttg ctt tca gta cag aag aga agc atg 96  
 Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met  
 20 25 30  
 tcc ttc caa gga atc aga caa cct gtg acc gtc act gag cta gta gat 144  
 Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
 35 40 45  
 tct ggt ata ttg aga ccg tcc act gtc aat gaa ctg gaa tct ggt cag 192  
 Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
 50 55 60  
 att tct tat gac gag gtt ggt gag aga att aag gac ttc ctc cag ggt 240  
 Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
 65 70 75 80  
 tca agc tgc ata gca ggc ata tac aat gag acc aca aaa cag aag ctt 288  
 Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
 85 90 95  
 ggc att tat gag gcc atg aaa att ggc tta gtc cga cct ggt act gct 336  
 Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
 100 105 110  
 ctg gag ttg ctg gaa gcc caa gca gct act ggc ttt ata gtg gat cct 384  
 Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
 115 120 125  
 gtt agc aac ttg agg tta cca gtg gag gaa gcc tac aag aga ggt ctg 432  
 Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
 130 135 140  
 gtg ggc att gag ttc aaa gag aag ctc ctg tct gca gaa cga gct gtc 480  
 Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
 145 150 155 160

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act ggg tat aat gat cct gaa aca gga aac atc atc tct ttg ttc caa	528
Thr Gly Tyr Asn Asp 165 Pro Glu Thr Gly Asn 170 Ile Ile Ser Leu Phe 175 Gln	
gcc atg aat aag gaa ctc atc gaa aag ggc cac ggt att cgc tta tta	576
Ala Met Asn Lys 180 Glu Leu Ile Glu Lys 185 Gly His Gly Ile Arg 190 Leu Leu	
gaa gca cag atc gca acc ggg ggg atc att gac cca aag gag agc cat	624
Glu Ala Gln 195 Ile Ala Thr Gly Gly 200 Ile Ile Asp Pro Lys 205 Glu Ser His	
cgt tta cca gtt gac ata gca tat aag agg ggc tat ttc aat gag gaa	672
Arg Leu 210 Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr 220 Phe Asn Glu Glu	
ctc agt gag att ctc tca gat cca agt gat gat acc aaa gga ttt ttt	720
Leu Ser Glu Ile Leu Ser 230 Asp Pro Ser Asp 235 Thr Lys Gly Phe Phe 240	
gac ccc aac act gaa gaa aat ctt acc tat ctg caa cta aaa gaa aga	768
Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr 250 Leu Gln Leu Lys Glu 255 Arg	
tgc att aag gat gag gaa aca ggg ctc tgt ctt ctg cct ctg aaa gaa	816
Cys Ile Lys Asp Glu Glu Thr Gly Leu 265 Cys Leu Leu Pro Leu 270 Lys Glu	
aag aag aaa cag gtg cag aca tca caa aag aat acc ctg agg aag cgt	864
Lys Lys Lys 275 Gln Val Gln Thr Ser 280 Gln Lys Asn Thr 285 Leu Arg Lys Arg	
aga gtg gtc ata gtt gac cca gaa acc aat aaa gaa atg tct gtt cag	912
Arg Val Val Ile Val Asp Pro 295 Glu Thr Asn Lys 300 Glu Met Ser Val Gln	
gag ggg gtc gac ctg cag cca agc tta att agc tga	948
Glu Gly Val Asp Leu Gln 310 Pro Ser Leu Ile Ser 315	

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 <211> 315  
 <212> PRT  
 <213> Homo sapiens  
 <400> 160

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Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met
20 25 30
Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp
35 40 45
Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln
50 55 60
Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly
65 70 75 80



Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
85 90 95

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
100 105 110

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
115 120 125

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
130 135 140

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
145 150 155 160

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
165 170 175

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
180 185 190

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
195 200 205

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
210 215 220

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
225 230 235 240

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
245 250 255

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
260 265 270

Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys Arg  
275 280 285

Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser Val Gln  
290 295 300

Glu Gly Val Asp Leu Gln Pro Ser Leu Ile Ser  
305 310 315

<210> 161  
<211> 2099  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (135)..(1628)

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actggccggc ccgcttcgtg cctgcgggaa gtcggggccgg gggactcttc ggaaactccg 120
agcctcagag aaat atg gcg ctc ccg acg ctg ccg tcc tac tgg tgc agc 170
Met Ala Leu Pro Thr Leu Pro Ser Tyr Trp Cys Ser
1 5 10
cag cag cgc ctg aat cag cag cta gca cga cag cga gag cag gag gcc 218
Gln Gln Arg Leu Asn Gln Gln Leu Ala Arg Gln Arg Glu Gln Glu Ala
15 20 25
cgg ctt cgg cag cag tgg gag cag aac agc cgt tac ttc agg atg tct 266
Arg Leu Arg Gln Gln Trp Glu Gln Asn Ser Arg Tyr Phe Arg Met Ser
30 35 40
gac atc tgc agc tcc aaa cag gca gaa tgg agc tct aaa acc tcc tac 314
Asp Ile Cys Ser Ser Lys Gln Ala Glu Trp Ser Ser Lys Thr Ser Tyr
45 50 55 60
cag cgg agc atg cat gcc tat cag cgg gag aag atg aag gag gag aag 362
Gln Arg Ser Met His Ala Tyr Gln Arg Glu Lys Met Lys Glu Glu Lys
65 70 75
agg agg agt ctg gag gcc cga cgg gaa aag ctc agg cag ctc atg cag 410
Arg Arg Ser Leu Glu Ala Arg Arg Glu Lys Leu Arg Gln Leu Met Gln
80 85 90
gag gag cag gac ctg ctg gcc aga gaa ctg gag gag ctg agg ctg agc 458
Glu Glu Gln Asp Leu Leu Ala Arg Glu Leu Glu Glu Leu Arg Leu Ser
95 100 105
atg aac ttg cag gaa aga aga atc cgg gag cag cac ggg aag ctg aaa 506
Met Asn Leu Gln Glu Arg Arg Ile Arg Glu Gln His Gly Lys Leu Lys
110 115 120
tca gcc aaa gaa gag cag agg aaa ctg att gct gaa caa ctt ttg tac 554
Ser Ala Lys Glu Glu Gln Arg Lys Leu Ile Ala Glu Gln Leu Leu Tyr
125 130 135 140
gaa cac tgg aaa aag aac aac ccg aaa ctt cga gag atg gag ctg gac 602
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Leu His Gln Lys His Val Val Asn Ser Trp Glu Met Gln Lys Glu Glu
160 165 170
aaa aaa cag caa gaa gcc acc gca gag caa gag aac aaa cgg tat gaa 698
Lys Lys Gln Gln Glu Ala Thr Ala Glu Gln Glu Asn Lys Arg Tyr Glu
175 180 185
aat gaa tat gaa agg gcc cga agg gag gcg cta gaa agg atg aaa gct 746
Asn Glu Tyr Glu Arg Ala Arg Glu Ala Leu Glu Arg Met Lys Ala
190 195 200
gaa gag gag agg agg cag ctg gag gac aag ctc cag gcc gag gca ctg 794
Glu Glu Glu Arg Arg Gln Leu Glu Asp Lys Leu Gln Ala Glu Ala Leu
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ctg caa cag atg gag gag ctg aag ctg aag gag gtg gag gcg acc aaa 842
Leu Gln Gln Met Glu Glu Leu Lys Leu Lys Glu Val Glu Ala Thr Lys
225 230 235
cta aag aag gag cag gag aat ctg ttg aag cag cgg tgg gag cta gag 890
Leu Lys Lys Glu Gln Glu Asn Leu Leu Lys Gln Arg Trp Glu Leu Glu
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cag	gcc	ctc	ctc	gag	aag	gag	gac	gag	agc	cag	cgc	ctc	cac	ctg	gcc	1082
Gln	Ala	Leu	Leu	Glu	Lys	Glu	Asp	Glu	Ser	Gln	Arg	Leu	His	Leu	Ala	
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Leu	Leu	Arg	Glu	Glu	Ala	Lys	Glu	Met	Trp	Glu	Lys	Arg	Glu	Ala	Glu	
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Trp	Ala	Arg	Glu	Arg	Ser	Ala	Arg	Asp	Arg	Leu	Met	Ser	Glu	Val	Leu	
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Thr	Gly	Arg	Gln	Gln	Gln	Ile	Gln	Glu	Lys	Ile	Glu	Gln	Asn	Arg	Arg	
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Glu	Glu	Val	Arg	Glu	Leu	Ala	Arg	Arg	Glu	Lys	Glu	Glu	Ser	Glu	Lys	
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Leu	Lys	Ser	Ala	Arg	Lys	Gln	Glu	Leu	Glu	Ala	Gln	Val	Ala	Glu	Arg	
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Glu	Ala	Arg	Arg	Val	Glu	Gln	Leu	Ser	Asp	Ala	Leu	Leu	Gln	Gln	Glu	
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Pro	Lys	Ile	Ala	Trp	Asn											
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cgtgtgggtt cctgttgtct cacctttaat tgtcaacctc cagtgttgac tctagaaata 2018
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Gln Trp Glu Gln Asn Ser Arg Tyr Phe Arg Met Ser Asp Ile Cys Ser  
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Ser Lys Gln Ala Glu Trp Ser Ser Lys Thr Ser Tyr Gln Arg Ser Met  
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His Ala Tyr Gln Arg Glu Lys Met Lys Glu Glu Lys Arg Arg Ser Leu  
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Glu Ala Arg Arg Glu Lys Leu Arg Gln Leu Met Gln Glu Glu Gln Asp  
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Leu Leu Ala Arg Glu Leu Glu Glu Leu Arg Leu Ser Met Asn Leu Gln  
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Glu Arg Arg Ile Arg Glu Gln His Gly Lys Leu Lys Ser Ala Lys Glu  
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Glu Gln Arg Lys Leu Ile Ala Glu Gln Leu Leu Tyr Glu His Trp Lys  
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Lys Asn Asn Pro Lys Leu Arg Glu Met Glu Leu Asp Leu His Gln Lys  
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His Val Val Asn Ser Trp Glu Met Gln Lys Glu Glu Lys Lys Gln Gln  
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Glu Ala Thr Ala Glu Gln Glu Asn Lys Arg Tyr Glu Asn Glu Tyr Glu  
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Arg Ala Arg Arg Glu Ala Leu Glu Arg Met Lys Ala Glu Glu Glu Arg  
 Seite 856

195

200

205

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Glu Glu Leu Lys Leu Lys Glu Val Glu Ala Thr Lys Leu Lys Lys Glu  
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Gln Glu Asn Leu Leu Lys Gln Arg Trp Glu Leu Glu Arg Leu Glu Glu  
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Glu Arg Lys Gln Met Glu Ala Phe Arg Gln Lys Ala Glu Leu Gly Arg  
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Phe Leu Arg His Gln Tyr Asn Ala Gln Leu Ser Arg Arg Thr Gln Gln  
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Ile Gln Glu Glu Leu Glu Ala Asp Arg Arg Ile Leu Gln Ala Leu Leu  
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Glu Lys Glu Asp Glu Ser Gln Arg Leu His Leu Ala Arg Arg Glu Gln  
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Glu Leu Ala Arg Arg Glu Lys Glu Glu Ser Glu Lys Leu Lys Ser Ala  
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Arg Lys Gln Glu Leu Glu Ala Gln Val Ala Glu Arg Arg Leu Gln Ala  
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Trp Glu Ala Asp Gln Gln Glu Glu Glu Glu Glu Glu Ala Arg Arg  
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Gly Gly Gly Gly Thr Ser Arg Met Tyr Tyr Ser Arg Arg Gly Val Ile  
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His Gln Asn Gln Asn Thr Ile Gln Glu Leu Leu Gln Asn Cys Ser Asp  
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Arg Gln Met Gly Gln Pro Cys Asp Ala Tyr Gln Lys Arg Leu Leu Gln  
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gtg Val	gac Asp 210	ctg Leu	gcc Ala	tca Ser	gtg Val	gag Glu 215	cag Gln	cac His	att Ile	aac Asn	agc Ser 220	cac His	cgg Arg	ggc Gly	atc Ile	672
cac His 225	aac Asn	tcc Ser	atc Ile	ggc Gly	gac Asp 230	tat Tyr	cgc Arg	tgg Trp	cag Gln	ctg Leu 235	gac Asp	aaa Lys	atc Ile	aaa Lys	gcc Ala 240	720
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aac Asn	ctg Leu	ctg Leu	aaa Lys 260	gcg Ala	tcc Ser	ttt Phe	gag Glu 265	agg Met	atg Met	gat Asp	cac His	ctg Leu	cga Arg 270	cag Gln	ctg Leu	816
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atc Ile 305	gct Ala	cag Gln	aaa Lys	cag Gln	gag Glu 310	gcc Ala	ttc Phe	tcc Ser	ata Ile	cgc Arg 315	atg Met	agt Ser	caa Gln	ctg Leu	gaa Glu 320	960
gtt Val	aaa Lys	gaa Glu	aaa Lys	gag Glu 325	ctc Leu	aat Asn	aag Lys	ctg Leu	aaa Lys 330	caa Gln	gaa Glu	agt Ser	gac Asp	caa Gln 335	ctt Leu	1008
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cct Pro	cct Pro	ccg Pro 515	aac Asn	cca Pro	ctg Leu	gcc Ala	gtg Val 520	gac Asp	ctc Leu	tct Ser	tgc Cys	aag Lys 525	att Ile	gag Glu	cag Gln	1584
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agg Arg	gcc Ala	atg Met	aca Thr	atc Ile 565	gcc Ala	aag Lys	ctg Leu	aaa Lys	aca Thr 570	atg Met	cgg Arg	cag Gln	gaa Glu	gat Asp 575	tac Tyr	1728
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act Thr	cat His	cat His	gga Gly	acc Thr 645	tgc Cys	caa Gln	gat Asp	gtc Val	aac Asn 650	cat His	aat Asn	aaa Lys	gta Val 655	att Ile 655	gaa Glu	1968
acc Thr	aac Asn	aga Arg	gaa Glu 660	aat Asn	gac Asp	aag Lys	caa Gln	gaa Glu 665	aca Thr	tgg Trp	atg Met	ctg Leu	atg Met 670	gag Glu	ctg Leu	2016
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Gln	Lys	Ala	Gln	Gln	Ile	His	Ser	Gln	Thr	Ser	Gln	Gln	Tyr	Pro	Leu	
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Tyr	Asp	Leu	Asp	Leu	Gly	Lys	Phe	Gly	Glu	Lys	Val	Thr	Gln	Leu	Thr	
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	945				950					955					960	
tat	gag	ctc	cag	ctg	gcc	tca	tac	acc	tca	gga	ctg	gaa	act	ctg	ctg	2928
Tyr	Glu	Leu	Gln	Leu	Ala	Ser	Tyr	Thr	Ser	Gly	Leu	Glu	Thr	Leu	Leu	
				965					970					975		
aac	ata	cct	atc	aag	agg	acc	atg	att	cag	tcc	cct	tct	ggg	gtg	att	2976
Asn	Ile	Pro	Ile	Lys	Arg	Thr	Met	Ile	Gln	Ser	Pro	Ser	Gly	Val	Ile	
			980					985					990			
ctg	caa	gag	gct	gca	gat	ggt	cat	gct	cgg	tac	att	gaa	cta	ctt	aca	3024
Leu	Gln	Glu	Ala	Ala	Asp	Val	His	Ala	Arg	Tyr	Ile	Glu	Leu	Leu	Thr	
		995					1000					1005				
aga	tct	gga	gac	tat	tac	agg	ttc	tta	agt	gag	atg	ctg	aag	agt		3069
Arg	Ser	Gly	Asp	Tyr	Tyr	Arg	Phe	Leu	Ser	Glu	Met	Leu	Lys	Ser		
	1010					1015					1020					

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ttg Leu	gaa Glu 1025	gat Asp	ctg Leu	aag Lys	ctg Leu	aaa Lys 1030	aat Asn	acc Thr	aag Lys	atc Ile	gaa Glu 1035	gtt Val	ttg Leu	gaa Glu	3114
gag Glu	gag Glu 1040	ctc Leu	aga Arg	ctg Leu	gcc Ala	cga Arg 1045	gat Asp	gcc Ala	aac Asn	tcg Ser	gaa Glu 1050	aac Asn	tgt Cys	aat Asn	3159
aag Lys	aac Asn 1055	aaa Lys	ttc Phe	ctg Leu	gat Asp	cag Gln 1060	aac Asn	ctg Leu	cag Gln	aaa Lys	tac Tyr 1065	cag Gln	gca Ala	gag Glu	3204
tgt Cys	tcc Ser 1070	cag Gln	ttc Phe	aaa Lys	gcg Ala	aag Lys 1075	ctt Leu	gcg Ala	agc Ser	ctg Leu	gag Glu 1080	gag Glu	ctg Leu	aag Lys	3249
aga Arg	cag Gln 1085	gct Ala	gag Glu	ctg Leu	gat Asp	ggg Gly 1090	aag Lys	tcg Ser	gct Ala	aag Lys	caa Gln 1095	aat Asn	cta Leu	gac Asp	3294
aag Lys	tgc Cys 1100	tac Tyr	ggc Gly	caa Gln	ata Ile	aaa Lys 1105	gaa Glu	ctc Leu	aat Asn	gag Glu	aag Lys 1110	atc Ile	acc Thr	cga Arg	3339
ctg Leu	act Thr 1115	tat Tyr	gag Glu	att Ile	gaa Glu	gat Asp 1120	gaa Glu	aag Lys	aga Arg	aga Arg	aga Arg 1125	aaa Lys	tct Ser	gtg Val	3384
gaa Glu	gac Asp 1130	aga Arg	ttt Phe	gac Asp	caa Gln	cag Gln 1135	aag Lys	aat Asn	gac Asp	tat Tyr	gac Asp 1140	caa Gln	ctg Leu	cag Gln	3429
aaa Lys	gca Ala 1145	agg Arg	caa Gln	tgt Cys	gaa Glu	aag Lys 1150	gag Glu	aac Asn	ctt Leu	ggt Gly	tgg Trp 1155	cag Gln	aaa Lys	tta Leu	3474
gag Glu	tct Ser 1160	gag Glu	aaa Lys	gcc Ala	atc Ile	aag Lys 1165	gag Glu	aag Lys	gag Glu	tac Tyr	gag Glu 1170	att Ile	gaa Glu	agg Arg	3519
ttg Leu	agg Arg 1175	gtt Val	cta Leu	ctg Leu	cag Gln	gaa Glu 1180	gaa Glu	ggc Gly	acc Thr	cgg Arg	aag Lys 1185	aga Arg	gaa Glu	tat Tyr	3564
gaa Glu	aat Asn 1190	gag Glu	ctg Leu	gca Ala	aag Lys	gta Val 1195	aga Arg	aac Asn	cac His	tat Tyr	aat Asn 1200	gag Glu	gag Glu	atg Met	3609
agt Ser	aat Asn 1205	tta Leu	agg Arg	aac Asn	aag Lys	tat Tyr 1210	gaa Glu	aca Thr	gag Glu	att Ile	aac Asn 1215	att Ile	acg Thr	aag Lys	3654
acc Thr	acc Thr 1220	atc Ile	aag Lys	gag Glu	ata Ile	tcc Ser 1225	atg Met	caa Gln	aaa Lys	gag Glu	gat Asp 1230	gat Asp	tcc Ser	aaa Lys	3699
aat Asn	ctt Leu 1235	aga Arg	aac Asn	cag Gln	ctt Leu	gat Asp 1240	aga Arg	ctt Leu	tca Ser	agg Arg	gaa Glu 1245	aat Asn	cga Arg	gat Asp	3744
ctg Leu	aag Lys 1250	gat Asp	gaa Glu	att Ile	gtc Val	agg Arg 1255	ctc Leu	aat Asn	gac Asp	agc Ser	atc Ile 1260	ttg Leu	cag Gln	gcc Ala	3789
act Thr	gag Glu 1265	cag Gln	cga Arg	agg Arg	cga Arg	gct Ala 1270	gaa Glu	gaa Glu	aac Asn	gcc Ala	ctt Leu 1275	cag Gln	caa Gln	aag Lys	3834

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gcc Ala	tgt Cys 1280	ggc Gly	tct Ser	gag Glu	ata Ile	atg Met 1285	cag Gln	aag Lys	aag Lys	cag Gln	cat His 1290	ctg Leu	gag Glu	ata Ile	3879
gaa Glu	ctg Leu 1295	aag Lys	cag Gln	gtc Val	atg Met	cag Gln 1300	cag Gln	cgc Arg	tct Ser	gag Glu	gac Asp 1305	aat Asn	gcc Ala	cgg Arg	3924
cac His	aag Lys 1310	cag Gln	tcc Ser	ctg Leu	gag Glu	gag Glu 1315	gct Ala	gcc Ala	aag Lys	acc Thr	att Ile 1320	cag Gln	gac Asp	aaa Lys	3969
aat Asn	aag Lys 1325	gag Glu	atc Ile	gag Glu	aga Arg	ctc Leu 1330	aaa Lys	gct Ala	gag Glu	ttt Phe	cag Gln 1335	gag Glu	gag Glu	gcc Ala	4014
aag Lys	cgc Arg 1340	cgc Arg	tgg Trp	gaa Glu	tat Tyr	gaa Glu 1345	aat Asn	gaa Glu	ctg Leu	agt Ser	aag Lys 1350	gta Val	aga Arg	aac Asn	4059
aat Asn	tat Tyr 1355	gat Asp	gag Glu	gag Glu	atc Ile	att Ile 1360	agc Ser	tta Leu	aaa Lys	aat Asn	cag Gln 1365	ttt Phe	gag Glu	acc Thr	4104
gag Glu	atc Ile 1370	aac Asn	atc Ile	acc Thr	aag Lys	acc Thr 1375	acc Thr	atc Ile	cac His	cag Gln	ctc Leu 1380	acc Thr	atg Met	cag Gln	4149
aag Lys	gaa Glu 1385	gag Glu	gat Asp	acc Thr	agt Ser	ggc Gly 1390	tac Tyr	cgg Arg	gct Ala	cag Gln	ata Ile 1395	gac Asp	aat Asn	ctc Leu	4194
acc Thr	cga Arg 1400	gaa Glu	aac Asn	agg Arg	agc Ser	tta Leu 1405	tct Ser	gaa Glu	gaa Glu	ata Ile	aag Lys 1410	agg Arg	ctg Leu	aag Lys	4239
aac Asn	act Thr 1415	cta Leu	acc Thr	cag Gln	acc Thr	aca Thr 1420	gag Glu	aat Asn	ctc Leu	agg Arg	agg Arg 1425	gtg Val	gaa Glu	gaa Glu	4284
gac Asp	atc Ile 1430	caa Gln	cag Gln	caa Gln	aag Lys	gcc Ala 1435	act Thr	ggc Gly	tct Ser	gag Glu	gtg Val 1440	tct Ser	cag Gln	agg Arg	4329
aaa Lys	cag Gln 1445	cag Gln	ctg Leu	gag Glu	gtt Val	gag Glu 1450	ctg Leu	aga Arg	caa Gln	gtc Val	act Thr 1455	cag Gln	atg Met	cga Arg	4374
aca Thr	gag Glu 1460	gag Glu	agc Ser	gta Val	aga Arg	tat Tyr 1465	aag Lys	caa Gln	tct Ser	ctt Leu	gat Asp 1470	gat Asp	gct Ala	gcc Ala	4419
aaa Lys	acc Thr 1475	atc Ile	cag Gln	gat Asp	aaa Lys	aac Asn 1480	aag Lys	gag Glu	ata Ile	gaa Glu	agg Arg 1485	tta Leu	aaa Lys	caa Gln	4464
ctg Leu	atc Ile 1490	gac Asp	aaa Lys	gaa Glu	aca Thr	aat Asn 1495	gac Asp	cgg Arg	aaa Lys	tgc Cys	ctg Leu 1500	gaa Glu	gat Asp	gaa Glu	4509
aac Asn	gcg Ala 1505	aga Arg	tta Leu	caa Gln	agg Arg	gtc Val 1510	cag Gln	tat Tyr	gac Asp	ctg Leu	cag Gln 1515	aaa Lys	gca Ala	aac Asn	4554
agt Ser	agt Ser 1520	gcg Ala	acg Thr	gag Glu	aca Thr	ata Ile 1525	aac Asn	aaa Lys	ctg Leu	aag Lys	gtt Val 1530	cag Gln	gag Glu	caa Gln	4599
gaa	ctg	aca	cgc	ctg	agg	atc	gac	tat	gaa	agg	gtt	tcc	cag	gag	4644

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Glu	Leu	Thr	Arg	Leu	Arg	Ile	Asp	Tyr	Glu	Arg	Val	Ser	Gln	Glu	
	1535					1540					1545				
agg	act	gtg	aag	gac	cag	gat	atc	acg	cgg	ttc	cag	aac	tct	ctg	4689
Arg	Thr	Val	Lys	Asp	Gln	Asp	Ile	Thr	Arg	Phe	Gln	Asn	Ser	Leu	
	1550					1555					1560				
aaa	gag	ctg	cag	ctg	cag	aag	cag	aag	gtg	gaa	gag	gag	ctg	aat	4734
Lys	Glu	Leu	Gln	Leu	Gln	Lys	Gln	Lys	Val	Glu	Glu	Glu	Leu	Asn	
	1565					1570					1575				
cgg	ctg	aag	agg	acc	gcg	tca	gaa	gac	tcc	tgc	aag	agg	aag	aag	4779
Arg	Leu	Lys	Arg	Thr	Ala	Ser	Glu	Asp	Ser	Cys	Lys	Arg	Lys	Lys	
	1580					1585					1590				
ctg	gag	gaa	gag	ctg	gaa	ggc	atg	agg	agg	tgc	ctg	aag	gag	caa	4824
Leu	Glu	Glu	Glu	Leu	Glu	Gly	Met	Arg	Arg	Ser	Leu	Lys	Glu	Gln	
	1595					1600					1605				
gcc	atc	aaa	atc	acc	aac	ctg	acc	cag	cag	ctg	gag	cag	gca	tcc	4869
Ala	Ile	Lys	Ile	Thr	Asn	Leu	Thr	Gln	Gln	Leu	Glu	Gln	Ala	Ser	
	1610					1615					1620				
att	gtt	aag	aag	agg	agt	gag	gat	gac	ctc	cgg	cag	cag	agg	gac	4914
Ile	Val	Lys	Lys	Arg	Ser	Glu	Asp	Asp	Leu	Arg	Gln	Gln	Arg	Asp	
	1625					1630					1635				
gtg	ctg	gat	ggc	cac	ctg	agg	gaa	aag	cag	agg	acc	cag	gaa	gag	4959
Val	Leu	Asp	Gly	His	Leu	Arg	Glu	Lys	Gln	Arg	Thr	Gln	Glu	Glu	
	1640					1645					1650				
ctg	agg	agg	ctc	tct	tct	gag	gtc	gag	gcc	ctg	agg	cgg	cag	tta	5004
Leu	Arg	Arg	Leu	Ser	Ser	Glu	Val	Glu	Ala	Leu	Arg	Arg	Gln	Leu	
	1655					1660					1665				
ctc	cag	gaa	cag	gaa	agt	gtc	aaa	caa	gct	cac	ttg	agg	aat	gag	5049
Leu	Gln	Glu	Gln	Glu	Ser	Val	Lys	Gln	Ala	His	Leu	Arg	Asn	Glu	
	1670					1675					1680				
cat	ttc	cag	aag	gcg	ata	gaa	gat	aaa	agc	aga	agc	tta	aat	gaa	5094
His	Phe	Gln	Lys	Ala	Ile	Glu	Asp	Lys	Ser	Arg	Ser	Leu	Asn	Glu	
	1685					1690					1695				
agc	aaa	ata	gaa	att	gag	agg	ctg	cag	tct	ctc	aca	gag	aac	ctg	5139
Ser	Lys	Ile	Glu	Ile	Glu	Arg	Leu	Gln	Ser	Leu	Thr	Glu	Asn	Leu	
	1700					1705					1710				
acc	aag	gag	cac	ttg	atg	tta	gaa	gaa	gaa	ctg	cgg	aac	ctg	agg	5184
Thr	Lys	Glu	His	Leu	Met	Leu	Glu	Glu	Glu	Leu	Arg	Asn	Leu	Arg	
	1715					1720					1725				
ctg	gag	tac	gat	gac	ctg	agg	aga	gga	cga	agc	gaa	gcg	gac	agt	5229
Leu	Glu	Tyr	Asp	Asp	Leu	Arg	Arg	Gly	Arg	Ser	Glu	Ala	Asp	Ser	
	1730					1735					1740				
gat	aaa	aat	gca	acc	atc	ttg	gaa	cta	agg	agc	cag	ctg	cag	atc	5274
Asp	Lys	Asn	Ala	Thr	Ile	Leu	Glu	Leu	Arg	Ser	Gln	Leu	Gln	Ile	
	1745					1750					1755				
agc	aac	aac	cgg	acc	ctg	gaa	ctg	cag	ggg	ctg	att	aat	gat	tta	5319
Ser	Asn	Asn	Arg	Thr	Leu	Glu	Leu	Gln	Gly	Leu	Ile	Asn	Asp	Leu	
	1760					1765					1770				
cag	aga	gag	agg	gaa	aat	ttg	aga	cag	gaa	att	gag	aaa	ttc	caa	5364
Gln	Arg	Glu	Arg	Glu	Asn	Leu	Arg	Gln	Glu	Ile	Glu	Lys	Phe	Gln	
	1775					1780					1785				
aag	cag	gct	tta	gag	gca	tct	aat	agg	att	cag	gaa	tca	aag	aat	5409
Lys	Gln	Ala	Leu	Glu	Ala	Ser	Asn	Arg	Ile	Gln	Glu	Ser	Lys	Asn	

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	1790						1795						1800						
	cag Gln	tgt Cys 1805	act Thr	cag Gln	gtg Val	gta Val	cag Gln 1810	gaa Glu	aga Arg	gag Glu	agc Ser	ctt Leu 1815	ctg Leu	gtg Val	aaa Lys	5454			
	atc Ile	aaa Lys 1820	gtc Val	ctg Leu	gag Glu	caa Gln	gac Asp 1825	aag Lys	gca Ala	agg Arg	ctg Leu	cag Gln 1830	agg Arg	ctg Leu	gag Glu	5499			
	gat Asp	gag Glu 1835	ctg Leu	aat Asn	cgt Arg	gca Ala	aaa Lys 1840	tca Ser	act Thr	cta Leu	gag Glu	gca Ala 1845	gaa Glu	acc Thr	agg Arg	5544			
	gtg Val	aaa Lys 1850	cag Gln	cgc Arg	ctg Leu	gag Glu	tgt Cys 1855	gag Glu	aaa Lys	cag Gln	caa Gln	att Ile 1860	cag Gln	aat Asn	gac Asp	5589			
	ctg Leu	aat Asn 1865	cag Gln	tgg Trp	aag Lys	act Thr	caa Gln 1870	tat Tyr	tcc Ser	cgc Arg	aag Lys	gag Glu 1875	gag Glu	gct Ala	att Ile	5634			
	agg Arg	aag Lys 1880	ata Ile	gaa Glu	tcg Ser	gaa Glu	aga Arg 1885	gaa Glu	aag Lys	agt Ser	gag Glu	aga Arg 1890	gag Glu	aag Lys	aac Asn	5679			
	agt Ser	ctt Leu 1895	agg Arg	agt Ser	gag Glu	atc Ile	gaa Glu 1900	aga Arg	ctc Leu	caa Gln	gca Ala	gag Glu 1905	atc Ile	aag Lys	aga Arg	5724			
	att Ile	gaa Glu 1910	gag Glu	agg Arg	tgc Cys	agg Arg	cgt Arg 1915	aag Lys	ctg Leu	gag Glu	gat Asp	tct Ser 1920	acc Thr	agg Arg	gag Glu	5769			
	aca Thr	cag Gln 1925	tca Ser	cag Gln	tta Leu	gaa Glu	aca Thr 1930	gaa Glu	cgc Arg	tcc Ser	cga Arg	tat Tyr 1935	cag Gln	agg Arg	gag Glu	5814			
	att Ile	gat Asp 1940	aaa Lys	ctc Leu	aga Arg	cag Gln	cgc Arg 1945	cca Pro	tat Tyr	ggg Gly	tcc Ser	cat His 1950	cga Arg	gag Glu	acc Thr	5859			
	cag Gln	act Thr 1955	gag Glu	tgt Cys	gag Glu	tgg Trp	acc Thr 1960	gtt Val	gac Asp	acc Thr	tcc Ser	aag Lys 1965	ctg Leu	gtg Val	ttt Phe	5904			
	gat Asp	ggg Gly 1970	ctg Leu	agg Arg	aag Lys	aag Lys	gtg Val 1975	aca Thr	gca Ala	atg Met	cag Gln	ctc Leu 1980	tat Tyr	gag Glu	tgt Cys	5949			
	cag Gln	ctg Leu 1985	atc Ile	gac Asp	aaa Lys	aca Thr	acc Thr 1990	ttg Leu	gac Asp	aaa Lys	cta Leu	ttg Leu 1995	aag Lys	ggg Gly	aag Lys	5994			
	aag Lys	tca Ser 2000	gtg Val	gaa Glu	gaa Glu	gtt Val	gct Ala 2005	tct Ser	gaa Glu	atc Ile	cag Gln	cca Pro 2010	ttc Phe	ctt Leu	cgg Arg	6039			
	ggc Gly	gca Ala 2015	gga Gly	tct Ser	atc Ile	gct Ala	gga Gly 2020	gca Ala	tct Ser	gct Ala	tct Ser	cct Pro 2025	aag Lys	gaa Glu	aaa Lys	6084			
	tac Tyr	tct Ser 2030	ttg Leu	gta Val	gag Glu	gcc Ala	aag Lys 2035	aga Arg	aag Lys	aaa Lys	tta Leu	atc Ile 2040	agc Ser	cca Pro	gaa Glu	6129			
	tcc Ser	aca Thr 2045	gtc Val	atg Met	ctt Leu	ctg Leu	gag Glu 2050	gcc Ala	cag Gln	gca Ala	gct Ala	aca Thr 2055	ggc Gly	ggc Gly	ata Ile	6174			

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att Ile	gat Asp 2060	ccc Pro	cat His	cgg Arg	aat Asn	gag Glu 2065	aag Lys	ctg Leu	act Thr	gtc Val	gac Asp 2070	agt Ser	gcc Ala	ata Ile	6219
gct Ala	cgg Arg 2075	gac Asp	ctc Leu	att Ile	gac Asp	ttc Phe 2080	gat Asp	gac Asp	cgt Arg	cag Gln	cag Gln 2085	ata Ile	tat Tyr	gca Ala	6264
gca Ala	gaa Glu 2090	aaa Lys	gct Ala	atc Ile	act Thr	ggt Gly 2095	ttt Phe	gat Asp	gat Asp	cca Pro	ttt Phe 2100	tca Ser	ggc Gly	aag Lys	6309
aca Thr	gta Val 2105	tct Ser	gtt Val	tca Ser	gaa Glu	gcc Ala 2110	atc Ile	aag Lys	aaa Lys	aat Asn	ttg Leu 2115	att Ile	gat Asp	aga Arg	6354
gaa Glu	acc Thr 2120	gga Gly	atg Met	cgc Arg	ctg Leu	ctg Leu 2125	gaa Glu	gcc Ala	cag Gln	att Ile	gct Ala 2130	tca Ser	ggg Gly	ggt Gly	6399
gta Val	gta Val 2135	gac Asp	cct Pro	gtg Val	aac Asn	agt Ser 2140	gtc Val	ttt Phe	ttg Leu	cca Pro	aaa Lys 2145	gat Asp	gtc Val	gcc Ala	6444
ttg Leu	gcc Ala 2150	cgg Arg	ggg Gly	ctg Leu	att Ile	gat Asp 2155	aga Arg	gat Asp	ttg Leu	tat Tyr	cga Arg 2160	tcc Ser	ctg Leu	aat Asn	6489
gat Asp	ccc Pro 2165	cga Arg	gat Asp	agt Ser	cag Gln	aaa Lys 2170	aac Asn	ttt Phe	gtg Val	gat Asp	cca Pro 2175	gtc Val	acc Thr	aaa Lys	6534
aag Lys	aag Lys 2180	gtc Val	agt Ser	tac Tyr	gtg Val	cag Gln 2185	ctg Leu	aag Lys	gaa Glu	cgg Arg	tgc Cys 2190	aga Arg	atc Ile	gaa Glu	6579
cca Pro	cat His 2195	act Thr	ggt Gly	ctg Leu	ctc Leu	ttg Leu 2200	ctt Leu	tca Ser	gta Val	cag Gln	aag Lys 2205	aga Arg	agc Ser	atg Met	6624
tcc Ser	ttc Phe 2210	caa Gln	gga Gly	atc Ile	aga Arg	caa Gln 2215	cct Pro	gtg Val	acc Thr	gtc Val	act Thr 2220	gag Glu	cta Leu	gta Val	6669
gat Asp	tct Ser 2225	ggt Gly	ata Ile	ttg Leu	aga Arg	ccg Pro 2230	tcc Ser	act Thr	gtc Val	aat Asn	gaa Glu 2235	ctg Leu	gaa Glu	tct Ser	6714
ggt Gly	cag Gln 2240	att Ile	tct Ser	tat Tyr	gac Asp	gag Glu 2245	gtt Val	ggt Gly	gag Glu	aga Arg	att Ile 2250	aag Lys	gac Asp	ttc Phe	6759
ctc Leu	cag Gln 2255	ggt Gly	tca Ser	agc Ser	tgc Cys	ata Ile 2260	gca Ala	ggc Gly	ata Ile	tac Tyr	aat Asn 2265	gag Glu	acc Thr	aca Thr	6804
aaa Lys	cag Gln 2270	aag Lys	ctt Leu	ggc Gly	att Ile	tat Tyr 2275	gag Glu	gcc Ala	atg Met	aaa Lys	att Ile 2280	ggc Gly	tta Leu	gtc Val	6849
cga Arg	cct Pro 2285	ggt Gly	act Thr	gct Ala	ctg Leu	gag Glu 2290	ttg Leu	ctg Leu	gaa Glu	gcc Ala	caa Gln 2295	gca Ala	gct Ala	act Thr	6894
ggc Gly	ttt Phe 2300	ata Ile	gtg Val	gat Asp	cct Pro	gtt Val 2305	agc Ser	aac Asn	ttg Leu	agg Arg	tta Leu 2310	cca Pro	gtg Val	gag Glu	6939

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gaa Glu	gcc Ala 2315	tac Tyr	aag Lys	aga Arg	ggg Gly	ctg Leu 2320	gtg Val	ggc Gly	att Ile	gag Glu	ttc Phe 2325	aaa Lys	gag Glu	aag Lys	6984
ctc Leu	ctg Leu 2330	tct Ser	gca Ala	gaa Glu	cga Arg	gct Ala 2335	gtc Val	act Thr	ggg Gly	tat Tyr	aat Asn 2340	gat Asp	cct Pro	gaa Glu	7029
aca Thr	gga Gly 2345	aac Asn	atc Ile	atc Ile	tct Ser	ttg Leu 2350	ttc Phe	caa Gln	gcc Ala	atg Met	aat Asn 2355	aag Lys	gaa Glu	ctc Leu	7074
atc Ile	gaa Glu 2360	aag Lys	ggc Gly	cac His	ggg Gly	att Ile 2365	cgc Arg	tta Leu	tta Leu	gaa Glu	gca Ala 2370	cag Gln	atc Ile	gca Ala	7119
acc Thr	ggg Gly 2375	ggg Gly	atc Ile	att Ile	gac Asp	cca Pro 2380	aag Lys	gag Glu	agc Ser	cat His	cgt Arg 2385	tta Leu	cca Pro	gtt Val	7164
gac Asp	ata Ile 2390	gca Ala	tat Tyr	aag Lys	agg Arg	ggc Gly 2395	tat Tyr	ttc Phe	aat Asn	gag Glu	gaa Glu 2400	ctc Leu	agt Ser	gag Glu	7209
att Ile	ctc Leu 2405	tca Ser	gat Asp	cca Pro	agt Ser	gat Asp 2410	gat Asp	acc Thr	aaa Lys	gga Gly	ttt Phe 2415	ttt Phe	gac Asp	ccc Pro	7254
aac Asn	act Thr 2420	gaa Glu	gaa Glu	aat Asn	ctt Leu	acc Thr 2425	tat Tyr	ctg Leu	caa Gln	cta Leu	aaa Lys 2430	gaa Glu	aga Arg	tgc Cys	7299
att Ile	aag Lys 2435	gat Asp	gag Glu	gaa Glu	aca Thr	ggg Gly 2440	ctc Leu	tgt Cys	ctt Leu	ctg Leu	cct Pro 2445	ctg Leu	aaa Lys	gaa Glu	7344
aag Lys	aag Lys 2450	aaa Lys	cag Gln	gtg Val	cag Gln	aca Thr 2455	tca Ser	caa Gln	aag Lys	aat Asn	acc Thr 2460	ctc Leu	agg Arg	aag Lys	7389
cgt Arg	aga Arg 2465	gtg Val	gtc Val	ata Ile	gtt Val	gac Asp 2470	cca Pro	gaa Glu	acc Thr	aat Asn	aaa Lys 2475	gaa Glu	atg Met	tct Ser	7434
gtt Val	cag Gln 2480	gag Glu	gcc Ala	tac Tyr	aag Lys	aag Lys 2485	ggc Gly	cta Leu	att Ile	gat Asp	tat Tyr 2490	gaa Glu	acc Thr	ttc Phe	7479
aaa Lys	gaa Glu 2495	ctg Leu	tgt Cys	gag Glu	cag Gln	gaa Glu 2500	tgt Cys	gaa Glu	tgg Trp	gaa Glu	gaa Glu 2505	ata Ile	acc Thr	atc Ile	7524
acg Thr	gga Gly 2510	tca Ser	gat Asp	ggc Gly	tcc Ser	acc Thr 2515	agg Arg	gtg Val	gtc Val	ctg Leu	gta Val 2520	gat Asp	aga Arg	aag Lys	7569
aca Thr	ggc Gly 2525	agt Ser	cag Gln	tat Tyr	gat Asp	att Ile 2530	caa Gln	gat Asp	gct Ala	att Ile	gac Asp 2535	aag Lys	ggc Gly	ctt Leu	7614
gtt Val	gac Asp 2540	agg Arg	aag Lys	ttc Phe	ttt Phe	gat Asp 2545	cag Gln	tac Tyr	cga Arg	tcc Ser	ggc Gly 2550	agc Ser	ctc Leu	agc Ser	7659
ctc Leu	act Thr 2555	caa Gln	ttt Phe	gct Ala	gac Asp	atg Met 2560	atc Ile	tcc Ser	ttg Leu	aaa Lys	aat Asn 2565	ggg Gly	gtc Val	ggc Gly	7704
acc Agc	agc Agc	agc Agc	atg Agc	ggc Agc	agt Agc	ggg Agc	gtc Agc	agc Agc	gat Agc	gat Agc	ggt Agc	gtt Agc	ttt Agc	agc Agc	7749

Thr	Ser	Ser	Ser	Met	Gly	Ser	Gly	Val	Ser	Asp	Asp	Val	Phe	Ser		
	2570					2575					2580					
agc	tcc	cga	cat	gaa	tca	gta	agt	aag	att	tcc	acc	ata	tcc	agc		7794
Ser	Ser	Arg	His	Glu	Ser	Val	Ser	Lys	Ile	Ser	Thr	Ile	Ser	Ser		
	2585					2590					2595					
gtc	agg	aat	tta	acc	ata	agg	agc	agc	tct	ttt	tca	gac	acc	ctg		7839
Val	Arg	Asn	Leu	Thr	Ile	Arg	Ser	Ser	Ser	Phe	Ser	Asp	Thr	Leu		
	2600					2605					2610					
gaa	gaa	tcg	agc	ccc	att	gca	gcc	atc	ttt	gac	aca	gaa	aac	ctg		7884
Glu	Glu	Ser	Ser	Pro	Ile	Ala	Ala	Ile	Phe	Asp	Thr	Glu	Asn	Leu		
	2615					2620					2625					
gag	aaa	atc	tcc	att	aca	gaa	ggc	ata	gag	cgg	ggc	atc	gtt	gac		7929
Glu	Lys	Ile	Ser	Ile	Thr	Glu	Gly	Ile	Glu	Arg	Gly	Ile	Val	Asp		
	2630					2635					2640					
agc	atc	acg	ggc	cag	agg	ctt	ctg	gag	gct	cag	gcc	tgc	aca	ggc		7974
Ser	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr	Gly		
	2645					2650					2655					
ggc	atc	atc	cac	cca	acc	acg	ggc	cag	aag	ctg	tca	ctt	cag	gac		8019
Gly	Ile	Ile	His	Pro	Thr	Thr	Gly	Gln	Lys	Leu	Ser	Leu	Gln	Asp		
	2660					2665					2670					
gca	gtc	tcc	cag	ggc	gtg	att	gac	caa	gac	atg	gcc	acc	agc	gtg		8064
Ala	Val	Ser	Gln	Gly	Val	Ile	Asp	Gln	Asp	Met	Ala	Thr	Ser	Val		
	2675					2680					2685					
aag	cct	gct	cag	aaa	gcc	ttc	ata	ggc	ttc	gag	ggc	gtg	aag	gga		8109
Lys	Pro	Ala	Gln	Lys	Ala	Phe	Ile	Gly	Phe	Glu	Gly	Val	Lys	Gly		
	2690					2695					2700					
aag	aag	aag	atg	tca	gca	gca	gag	gca	gtg	aaa	gaa	aaa	tgg	ctc		8154
Lys	Lys	Lys	Met	Ser	Ala	Ala	Glu	Ala	Val	Lys	Glu	Lys	Trp	Leu		
	2705					2710					2715					
ccg	tat	gag	gct	ggc	cag	cgc	ttc	ctg	gag	ttc	cag	tac	ctc	acg		8199
Pro	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Phe	Gln	Tyr	Leu	Thr		
	2720					2725					2730					
gga	ggc	ctt	gtt	gac	ccg	gaa	gtg	cat	ggg	agg	ata	agc	acc	gaa		8244
Gly	Gly	Leu	Val	Asp	Pro	Glu	Val	His	Gly	Arg	Ile	Ser	Thr	Glu		
	2735					2740					2745					
gaa	gcc	atc	cgg	aag	ggg	ttc	ata	gat	ggc	cgc	gcc	gca	cag	agg		8289
Glu	Ala	Ile	Arg	Lys	Gly	Phe	Ile	Asp	Gly	Arg	Ala	Ala	Gln	Arg		
	2750					2755					2760					
ctg	caa	gac	acc	agc	agc	tat	gcc	aaa	atc	ctg	acc	tgc	ccc	aaa		8334
Leu	Gln	Asp	Thr	Ser	Ser	Tyr	Ala	Lys	Ile	Leu	Thr	Cys	Pro	Lys		
	2765					2770					2775					
acc	aaa	tta	aaa	ata	tcc	tat	aag	gat	gcc	ata	aat	cgc	tcc	atg		8379
Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Ile	Asn	Arg	Ser	Met		
	2780					2785					2790					
gta	gaa	gat	atc	act	ggg	ctg	cgc	ctt	ctg	gaa	gcc	gcc	tcc	gtg		8424
Val	Glu	Asp	Ile	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala	Ala	Ser	Val		
	2795					2800					2805					
tcg	tcc	aag	ggc	tta	ccc	agc	cct	tac	aac	atg	tct	tcg	gct	ccg		8469
Ser	Ser	Lys	Gly	Leu	Pro	Ser	Pro	Tyr	Asn	Met	Ser	Ser	Ala	Pro		
	2810					2815					2820					
ggg	tcc	cgc	tcc	ggc	tcc	cgc	tcg	gga	tct	cgc	tcc	gga	tct	cgc		8514
Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg		



2825		2830		2835		
tcc ggg tcc cgc agt ggg tcc cgg aga gga agc ttt gac gcc aca						8559
Ser Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr						
2840		2845		2850		
ggg aat tct tcc tac tct tat tcc tac tca ttt agc agt agt tct						8604
Gly Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser Ser Ser						
2855		2860		2865		
att ggg cac tag						8616
Ile Gly His						
2870						

<210> 164  
 <211> 2871  
 <212> PRT  
 <213> Homo sapiens  
 <400> 164

Met Ser Cys Asn Gly Gly Ser His Pro Arg Ile Asn Thr Leu Gly Arg	
1 5 10 15	
Met Ile Arg Ala Glu Ser Gly Pro Asp Leu Arg Tyr Glu Val Thr Ser	
20 25 30	
Gly Gly Gly Gly Thr Ser Arg Met Tyr Tyr Ser Arg Arg Gly Val Ile	
35 40 45	
Thr Asp Gln Asn Ser Asp Gly Tyr Cys Gln Thr Gly Thr Met Ser Arg	
50 55 60	
His Gln Asn Gln Asn Thr Ile Gln Glu Leu Leu Gln Asn Cys Ser Asp	
65 70 75 80	
Cys Leu Met Arg Ala Glu Leu Ile Val Gln Pro Glu Leu Lys Tyr Gly	
85 90 95	
Asp Gly Ile Gln Leu Thr Arg Ser Arg Glu Leu Asp Glu Cys Phe Ala	
100 105 110	
Gln Ala Asn Asp Gln Met Glu Ile Leu Asp Ser Leu Ile Arg Glu Met	
115 120 125	
Arg Gln Met Gly Gln Pro Cys Asp Ala Tyr Gln Lys Arg Leu Leu Gln	
130 135 140	
Leu Gln Glu Gln Met Arg Ala Leu Tyr Lys Ala Ile Ser Val Pro Arg	
145 150 155 160	
Val Arg Arg Ala Ser Ser Lys Gly Gly Gly Tyr Thr Cys Gln Ser	
165 170 175	
Gly Ser Gly Trp Asp Glu Phe Thr Lys His Val Thr Ser Glu Cys Leu	
180 185 190	

Gly Trp Met Arg Gln Gln Arg Ala Glu Met Asp Met Val Ala Trp Gly  
195 200 205

Val Asp Leu Ala Ser Val Glu Gln His Ile Asn Ser His Arg Gly Ile  
210 215 220

His Asn Ser Ile Gly Asp Tyr Arg Trp Gln Leu Asp Lys Ile Lys Ala  
225 230 235 240

Asp Leu Arg Glu Lys Ser Ala Ile Tyr Gln Leu Glu Glu Glu Tyr Glu  
245 250 255

Asn Leu Leu Lys Ala Ser Phe Glu Arg Met Asp His Leu Arg Gln Leu  
260 265 270

Gln Asn Ile Ile Gln Ala Thr Ser Arg Glu Ile Met Trp Ile Asn Asp  
275 280 285

Cys Glu Glu Glu Glu Leu Leu Tyr Asp Trp Ser Asp Lys Asn Thr Asn  
290 295 300

Ile Ala Gln Lys Gln Glu Ala Phe Ser Ile Arg Met Ser Gln Leu Glu  
305 310 315 320

Val Lys Glu Lys Glu Leu Asn Lys Leu Lys Gln Glu Ser Asp Gln Leu  
325 330 335

Val Leu Asn Gln His Pro Ala Ser Asp Lys Ile Glu Ala Tyr Met Asp  
340 345 350

Thr Leu Gln Thr Gln Trp Ser Trp Ile Leu Gln Ile Thr Lys Cys Ile  
355 360 365

Asp Val His Leu Lys Glu Asn Ala Ala Tyr Phe Gln Phe Phe Glu Glu  
370 375 380

Ala Gln Ser Thr Glu Ala Tyr Leu Lys Gly Leu Gln Asp Ser Ile Arg  
385 390 395 400

Lys Lys Tyr Pro Cys Asp Lys Asn Met Pro Leu Gln His Leu Leu Glu  
405 410 415

Gln Ile Lys Glu Leu Glu Lys Glu Arg Glu Lys Ile Leu Glu Tyr Lys  
420 425 430

Arg Gln Val Gln Asn Leu Val Asn Lys Ser Lys Lys Ile Val Gln Leu  
435 440 445

Lys Pro Arg Asn Pro Asp Tyr Arg Ser Asn Lys Pro Ile Ile Leu Arg  
450 455 460

Ala Leu Cys Asp Tyr Lys Gln Asp Gln Lys Ile Val His Lys Gly Asp  
465 470 475 480

Glu Cys Ile Leu Lys Asp Asn Asn Glu Arg Ser Lys Trp Tyr Val Thr  
485 490 495

Gly Pro Gly Gly Val Asp Met Leu Val Pro Ser Val Gly Leu Ile Ile  
500 505 510

Pro Pro Pro Asn Pro Leu Ala Val Asp Leu Ser Cys Lys Ile Glu Gln  
515 520 525

Tyr Tyr Glu Ala Ile Leu Ala Leu Trp Asn Gln Leu Tyr Ile Asn Met  
530 535 540

Lys Ser Leu Val Ser Trp His Tyr Cys Met Ile Asp Ile Glu Lys Ile  
545 550 555 560

Arg Ala Met Thr Ile Ala Lys Leu Lys Thr Met Arg Gln Glu Asp Tyr  
565 570 575

Met Lys Thr Ile Ala Asp Leu Glu Leu His Tyr Gln Glu Phe Ile Arg  
580 585 590

Asn Ser Gln Gly Ser Glu Met Phe Gly Asp Asp Asp Lys Arg Lys Ile  
595 600 605

Gln Ser Gln Phe Thr Asp Ala Gln Lys His Tyr Gln Thr Leu Val Ile  
610 615 620

Gln Leu Pro Gly Tyr Pro Gln His Gln Thr Val Thr Thr Thr Glu Ile  
625 630 635 640

Thr His His Gly Thr Cys Gln Asp Val Asn His Asn Lys Val Ile Glu  
645 650 655

Thr Asn Arg Glu Asn Asp Lys Gln Glu Thr Trp Met Leu Met Glu Leu  
660 665 670

Gln Lys Ile Arg Arg Gln Ile Glu His Cys Glu Gly Arg Met Thr Leu  
675 680 685

Lys Asn Leu Pro Leu Ala Asp Gln Gly Ser Ser His His Ile Thr Val  
690 695 700

Lys Ile Asn Glu Leu Lys Ser Val Gln Asn Asp Ser Gln Ala Ile Ala  
705 710 715 720

Glu Val Leu Asn Gln Leu Lys Asp Met Leu Ala Asn Phe Arg Gly Ser  
725 730 735

Glu Lys Tyr Cys Tyr Leu Gln Asn Glu Val Phe Gly Leu Phe Gln Lys  
Seite 871

Leu Glu Asn Ile Asn Gly Val Thr Asp Gly Tyr Leu Asn Ser Leu Cys  
755 760 765

Thr Val Arg Ala Leu Leu Gln Ala Ile Leu Gln Thr Glu Asp Met Leu  
770 775 780

Lys Val Tyr Glu Ala Arg Leu Thr Glu Glu Glu Thr Val Cys Leu Asp  
785 790 795 800

Leu Asp Lys Val Glu Ala Tyr Arg Cys Gly Leu Lys Lys Ile Lys Asn  
805 810 815

Asp Leu Asn Leu Lys Lys Ser Leu Leu Ala Thr Met Lys Thr Glu Leu  
820 825 830

Gln Lys Ala Gln Gln Ile His Ser Gln Thr Ser Gln Gln Tyr Pro Leu  
835 840 845

Tyr Asp Leu Asp Leu Gly Lys Phe Gly Glu Lys Val Thr Gln Leu Thr  
850 855 860

Asp Arg Trp Gln Arg Ile Asp Lys Gln Ile Asp Phe Arg Leu Trp Asp  
865 870 875 880

Leu Glu Lys Gln Ile Lys Gln Leu Arg Asn Tyr Arg Asp Asn Tyr Gln  
885 890 895

Ala Phe Cys Lys Trp Leu Tyr Asp Arg Lys Arg Arg Gln Asp Ser Leu  
900 905 910

Glu Ser Met Lys Phe Gly Asp Ser Asn Thr Val Met Arg Phe Leu Asn  
915 920 925

Glu Gln Lys Asn Leu His Ser Glu Ile Ser Gly Lys Arg Asp Lys Ser  
930 935 940

Glu Glu Val Gln Lys Ile Ala Glu Leu Cys Ala Asn Ser Ile Lys Asp  
945 950 955 960

Tyr Glu Leu Gln Leu Ala Ser Tyr Thr Ser Gly Leu Glu Thr Leu Leu  
965 970 975

Asn Ile Pro Ile Lys Arg Thr Met Ile Gln Ser Pro Ser Gly Val Ile  
980 985 990

Leu Gln Glu Ala Ala Asp Val His Ala Arg Tyr Ile Glu Leu Leu Thr  
995 1000 1005

Arg Ser Gly Asp Tyr Tyr Arg Phe Leu Ser Glu Met Leu Lys Ser  
1010 1015 1020

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Leu Glu Asp Leu Lys Leu Lys Asn Thr Lys Ile Glu Val Leu Glu  
 1025 1030 1035  
 Glu Glu Leu Arg Leu Ala Arg Asp Ala Asn Ser Glu Asn Cys Asn  
 1040 1045 1050  
 Lys Asn Lys Phe Leu Asp Gln Asn Leu Gln Lys Tyr Gln Ala Glu  
 1055 1060 1065  
 Cys Ser Gln Phe Lys Ala Lys Leu Ala Ser Leu Glu Glu Leu Lys  
 1070 1075 1080  
 Arg Gln Ala Glu Leu Asp Gly Lys Ser Ala Lys Gln Asn Leu Asp  
 1085 1090 1095  
 Lys Cys Tyr Gly Gln Ile Lys Glu Leu Asn Glu Lys Ile Thr Arg  
 1100 1105 1110  
 Leu Thr Tyr Glu Ile Glu Asp Glu Lys Arg Arg Arg Lys Ser Val  
 1115 1120 1125  
 Glu Asp Arg Phe Asp Gln Gln Lys Asn Asp Tyr Asp Gln Leu Gln  
 1130 1135 1140  
 Lys Ala Arg Gln Cys Glu Lys Glu Asn Leu Gly Trp Gln Lys Leu  
 1145 1150 1155  
 Glu Ser Glu Lys Ala Ile Lys Glu Lys Glu Tyr Glu Ile Glu Arg  
 1160 1165 1170  
 Leu Arg Val Leu Leu Gln Glu Glu Gly Thr Arg Lys Arg Glu Tyr  
 1175 1180 1185  
 Glu Asn Glu Leu Ala Lys Val Arg Asn His Tyr Asn Glu Glu Met  
 1190 1195 1200  
 Ser Asn Leu Arg Asn Lys Tyr Glu Thr Glu Ile Asn Ile Thr Lys  
 1205 1210 1215  
 Thr Thr Ile Lys Glu Ile Ser Met Gln Lys Glu Asp Asp Ser Lys  
 1220 1225 1230  
 Asn Leu Arg Asn Gln Leu Asp Arg Leu Ser Arg Glu Asn Arg Asp  
 1235 1240 1245  
 Leu Lys Asp Glu Ile Val Arg Leu Asn Asp Ser Ile Leu Gln Ala  
 1250 1255 1260  
 Thr Glu Gln Arg Arg Arg Ala Glu Glu Asn Ala Leu Gln Gln Lys  
 1265 1270 1275

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Ala Cys Gly Ser Glu Ile Met Gln Lys Lys Gln His Leu Glu Ile  
1280 1285 1290

Glu Leu Lys Gln Val Met Gln Gln Arg Ser Glu Asp Asn Ala Arg  
1295 1300 1305

His Lys Gln Ser Leu Glu Glu Ala Ala Lys Thr Ile Gln Asp Lys  
1310 1315 1320

Asn Lys Glu Ile Glu Arg Leu Lys Ala Glu Phe Gln Glu Glu Ala  
1325 1330 1335

Lys Arg Arg Trp Glu Tyr Glu Asn Glu Leu Ser Lys Val Arg Asn  
1340 1345 1350

Asn Tyr Asp Glu Glu Ile Ile Ser Leu Lys Asn Gln Phe Glu Thr  
1355 1360 1365

Glu Ile Asn Ile Thr Lys Thr Thr Ile His Gln Leu Thr Met Gln  
1370 1375 1380

Lys Glu Glu Asp Thr Ser Gly Tyr Arg Ala Gln Ile Asp Asn Leu  
1385 1390 1395

Thr Arg Glu Asn Arg Ser Leu Ser Glu Glu Ile Lys Arg Leu Lys  
1400 1405 1410

Asn Thr Leu Thr Gln Thr Thr Glu Asn Leu Arg Arg Val Glu Glu  
1415 1420 1425

Asp Ile Gln Gln Gln Lys Ala Thr Gly Ser Glu Val Ser Gln Arg  
1430 1435 1440

Lys Gln Gln Leu Glu Val Glu Leu Arg Gln Val Thr Gln Met Arg  
1445 1450 1455

Thr Glu Glu Ser Val Arg Tyr Lys Gln Ser Leu Asp Asp Ala Ala  
1460 1465 1470

Lys Thr Ile Gln Asp Lys Asn Lys Glu Ile Glu Arg Leu Lys Gln  
1475 1480 1485

Leu Ile Asp Lys Glu Thr Asn Asp Arg Lys Cys Leu Glu Asp Glu  
1490 1495 1500

Asn Ala Arg Leu Gln Arg Val Gln Tyr Asp Leu Gln Lys Ala Asn  
1505 1510 1515

Ser Ser Ala Thr Glu Thr Ile Asn Lys Leu Lys Val Gln Glu Gln  
1520 1525 1530

Glu Leu Thr Arg Leu Arg Ile Asp Tyr Glu Arg Val Ser Gln Glu  
1535 1540 1545

Arg Thr Val Lys Asp Gln Asp Ile Thr Arg Phe Gln Asn Ser Leu  
1550 1555 1560

Lys Glu Leu Gln Leu Gln Lys Gln Lys Val Glu Glu Glu Leu Asn  
1565 1570 1575

Arg Leu Lys Arg Thr Ala Ser Glu Asp Ser Cys Lys Arg Lys Lys  
1580 1585 1590

Leu Glu Glu Glu Leu Glu Gly Met Arg Arg Ser Leu Lys Glu Gln  
1595 1600 1605

Ala Ile Lys Ile Thr Asn Leu Thr Gln Gln Leu Glu Gln Ala Ser  
1610 1615 1620

Ile Val Lys Lys Arg Ser Glu Asp Asp Leu Arg Gln Gln Arg Asp  
1625 1630 1635

Val Leu Asp Gly His Leu Arg Glu Lys Gln Arg Thr Gln Glu Glu  
1640 1645 1650

Leu Arg Arg Leu Ser Ser Glu Val Glu Ala Leu Arg Arg Gln Leu  
1655 1660 1665

Leu Gln Glu Gln Glu Ser Val Lys Gln Ala His Leu Arg Asn Glu  
1670 1675 1680

His Phe Gln Lys Ala Ile Glu Asp Lys Ser Arg Ser Leu Asn Glu  
1685 1690 1695

Ser Lys Ile Glu Ile Glu Arg Leu Gln Ser Leu Thr Glu Asn Leu  
1700 1705 1710

Thr Lys Glu His Leu Met Leu Glu Glu Glu Leu Arg Asn Leu Arg  
1715 1720 1725

Leu Glu Tyr Asp Asp Leu Arg Arg Gly Arg Ser Glu Ala Asp Ser  
1730 1735 1740

Asp Lys Asn Ala Thr Ile Leu Glu Leu Arg Ser Gln Leu Gln Ile  
1745 1750 1755

Ser Asn Asn Arg Thr Leu Glu Leu Gln Gly Leu Ile Asn Asp Leu  
1760 1765 1770

Gln Arg Glu Arg Glu Asn Leu Arg Gln Glu Ile Glu Lys Phe Gln  
1775 1780 1785

Lys Gln Ala Leu Glu Ala Ser Asn Arg Ile Gln Glu Ser Lys Asn





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Ile	Asp	Pro	His	Arg	Asn	Glu	Lys	Leu	Thr	Val	Asp	Ser	Ala	Ile
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Ala	Arg	Asp	Leu	Ile	Asp	Phe	Asp	Asp	Arg	Gln	Gln	Ile	Tyr	Ala
	2075					2080					2085			
Ala	Glu	Lys	Ala	Ile	Thr	Gly	Phe	Asp	Asp	Pro	Phe	Ser	Gly	Lys
	2090					2095					2100			
Thr	Val	Ser	Val	Ser	Glu	Ala	Ile	Lys	Lys	Asn	Leu	Ile	Asp	Arg
	2105					2110					2115			
Glu	Thr	Gly	Met	Arg	Leu	Leu	Glu	Ala	Gln	Ile	Ala	Ser	Gly	Gly
	2120					2125					2130			
Val	Val	Asp	Pro	Val	Asn	Ser	Val	Phe	Leu	Pro	Lys	Asp	Val	Ala
	2135					2140					2145			
Leu	Ala	Arg	Gly	Leu	Ile	Asp	Arg	Asp	Leu	Tyr	Arg	Ser	Leu	Asn
	2150					2155					2160			
Asp	Pro	Arg	Asp	Ser	Gln	Lys	Asn	Phe	Val	Asp	Pro	Val	Thr	Lys
	2165					2170					2175			
Lys	Lys	Val	Ser	Tyr	Val	Gln	Leu	Lys	Glu	Arg	Cys	Arg	Ile	Glu
	2180					2185					2190			
Pro	His	Thr	Gly	Leu	Leu	Leu	Leu	Ser	Val	Gln	Lys	Arg	Ser	Met
	2195					2200					2205			
Ser	Phe	Gln	Gly	Ile	Arg	Gln	Pro	Val	Thr	Val	Thr	Glu	Leu	Val
	2210					2215					2220			
Asp	Ser	Gly	Ile	Leu	Arg	Pro	Ser	Thr	Val	Asn	Glu	Leu	Glu	Ser
	2225					2230					2235			
Gly	Gln	Ile	Ser	Tyr	Asp	Glu	Val	Gly	Glu	Arg	Ile	Lys	Asp	Phe
	2240					2245					2250			
Leu	Gln	Gly	Ser	Ser	Cys	Ile	Ala	Gly	Ile	Tyr	Asn	Glu	Thr	Thr
	2255					2260					2265			
Lys	Gln	Lys	Leu	Gly	Ile	Tyr	Glu	Ala	Met	Lys	Ile	Gly	Leu	Val
	2270					2275					2280			
Arg	Pro	Gly	Thr	Ala	Leu	Glu	Leu	Leu	Glu	Ala	Gln	Ala	Ala	Thr
	2285					2290					2295			
Gly	Phe	Ile	Val	Asp	Pro	Val	Ser	Asn	Leu	Arg	Leu	Pro	Val	Glu
	2300					2305					2310			

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Glu Ala Tyr Lys Arg Gly Leu Val Gly Ile Glu Phe Lys Glu Lys  
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 Leu Leu Ser Ala Glu Arg Ala Val Thr Gly Tyr Asn Asp Pro Glu  
 2330 2335 2340  
 Thr Gly Asn Ile Ile Ser Leu Phe Gln Ala Met Asn Lys Glu Leu  
 2345 2350 2355  
 Ile Glu Lys Gly His Gly Ile Arg Leu Leu Glu Ala Gln Ile Ala  
 2360 2365 2370  
 Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His Arg Leu Pro Val  
 2375 2380 2385  
 Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu Leu Ser Glu  
 2390 2395 2400  
 Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe Asp Pro  
 2405 2410 2415  
 Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg Cys  
 2420 2425 2430  
 Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
 2435 2440 2445  
 Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys  
 2450 2455 2460  
 Arg Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser  
 2465 2470 2475  
 Val Gln Glu Ala Tyr Lys Lys Gly Leu Ile Asp Tyr Glu Thr Phe  
 2480 2485 2490  
 Lys Glu Leu Cys Glu Gln Glu Cys Glu Trp Glu Glu Ile Thr Ile  
 2495 2500 2505  
 Thr Gly Ser Asp Gly Ser Thr Arg Val Val Leu Val Asp Arg Lys  
 2510 2515 2520  
 Thr Gly Ser Gln Tyr Asp Ile Gln Asp Ala Ile Asp Lys Gly Leu  
 2525 2530 2535  
 Val Asp Arg Lys Phe Phe Asp Gln Tyr Arg Ser Gly Ser Leu Ser  
 2540 2545 2550  
 Leu Thr Gln Phe Ala Asp Met Ile Ser Leu Lys Asn Gly Val Gly  
 2555 2560 2565

Thr	Ser	Ser	Ser	Met	Gly	Ser	Gly	Val	Ser	Asp	Asp	Val	Phe	Ser
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Ser	Ser	Arg	His	Glu	Ser	Val	Ser	Lys	Ile	Ser	Thr	Ile	Ser	Ser
	2585					2590					2595			
Val	Arg	Asn	Leu	Thr	Ile	Arg	Ser	Ser	Ser	Phe	Ser	Asp	Thr	Leu
	2600					2605					2610			
Glu	Glu	Ser	Ser	Pro	Ile	Ala	Ala	Ile	Phe	Asp	Thr	Glu	Asn	Leu
	2615					2620					2625			
Glu	Lys	Ile	Ser	Ile	Thr	Glu	Gly	Ile	Glu	Arg	Gly	Ile	Val	Asp
	2630					2635					2640			
Ser	Ile	Thr	Gly	Gln	Arg	Leu	Leu	Glu	Ala	Gln	Ala	Cys	Thr	Gly
	2645					2650					2655			
Gly	Ile	Ile	His	Pro	Thr	Thr	Gly	Gln	Lys	Leu	Ser	Leu	Gln	Asp
	2660					2665					2670			
Ala	Val	Ser	Gln	Gly	Val	Ile	Asp	Gln	Asp	Met	Ala	Thr	Ser	Val
	2675					2680					2685			
Lys	Pro	Ala	Gln	Lys	Ala	Phe	Ile	Gly	Phe	Glu	Gly	Val	Lys	Gly
	2690					2695					2700			
Lys	Lys	Lys	Met	Ser	Ala	Ala	Glu	Ala	Val	Lys	Glu	Lys	Trp	Leu
	2705					2710					2715			
Pro	Tyr	Glu	Ala	Gly	Gln	Arg	Phe	Leu	Glu	Phe	Gln	Tyr	Leu	Thr
	2720					2725					2730			
Gly	Gly	Leu	Val	Asp	Pro	Glu	Val	His	Gly	Arg	Ile	Ser	Thr	Glu
	2735					2740					2745			
Glu	Ala	Ile	Arg	Lys	Gly	Phe	Ile	Asp	Gly	Arg	Ala	Ala	Gln	Arg
	2750					2755					2760			
Leu	Gln	Asp	Thr	Ser	Ser	Tyr	Ala	Lys	Ile	Leu	Thr	Cys	Pro	Lys
	2765					2770					2775			
Thr	Lys	Leu	Lys	Ile	Ser	Tyr	Lys	Asp	Ala	Ile	Asn	Arg	Ser	Met
	2780					2785					2790			
Val	Glu	Asp	Ile	Thr	Gly	Leu	Arg	Leu	Leu	Glu	Ala	Ala	Ser	Val
	2795					2800					2805			
Ser	Ser	Lys	Gly	Leu	Pro	Ser	Pro	Tyr	Asn	Met	Ser	Ser	Ala	Pro
	2810					2815					2820			
Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg	Ser	Gly	Ser	Arg

2825

2830

2835

Ser Gly Ser Arg Ser Gly Ser Arg Arg Gly Ser Phe Asp Ala Thr  
 2840 2845 2850

Gly Asn Ser Ser Tyr Ser Tyr Ser Tyr Ser Phe Ser Ser Ser  
 2855 2860 2865

Ile Gly His  
 2870

<210> 165  
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 <212> DNA  
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<220>  
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 gag cca cat act ggt ctg ctc ttg ctt tca gta cag aag aga agc atg 96  
 Glu Pro His Thr Gly Leu Leu Leu Leu Ser Val Gln Lys Arg Ser Met  
 20 25 30  
 tcc ttc caa gga atc aga caa cct gtg acc gtc act gag cta gta gat 144  
 Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp  
 35 40 45  
 tct ggt ata ttg aga ccg tcc act gtc aat gaa ctg gaa tct ggt cag 192  
 Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln  
 50 55 60  
 att tct tat gac gag gtt ggt gag aga att aag gac ttc ctc cag ggt 240  
 Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly  
 65 70 75 80  
 tca agc tgc ata gca ggc ata tac aat gag acc aca aaa cag aag ctt 288  
 Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu  
 85 90 95  
 ggc att tat gag gcc atg aaa att ggc tta gtc cga cct ggt act gct 336  
 Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
 100 105 110  
 ctg gag ttg ctg gaa gcc caa gca gct act ggc ttt ata gtg gat cct 384  
 Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
 115 120 125  
 gtt agc aac ttg agg tta cca gtg gag gaa gcc tac aag aga ggt ctg 432  
 Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
 130 135 140  
 gtg ggc att gag ttc aaa gag aag ctc ctg tct gca gaa cga gct gtc 480  
 Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
 145 150 155 160  
 act ggg tat aat gat cct gaa aca gga aac atc atc tct ttg ttc caa 528  
 Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
 165 170 175

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gcc atg aat aag gaa ctc atc gaa aag ggc cac ggt att cgc tta tta	576
Ala Met Asn Lys 180 Glu Leu Ile Glu Lys 185 Gly His Gly Ile Arg Leu Leu 190	
gaa gca cag atc gca acc ggg ggg atc att gac cca aag gag agc cat	624
Glu Ala Gln 195 Ile Ala Thr Gly Gly 200 Ile Ile Asp Pro Lys 205 Glu Ser His	
cgt tta cca gtt gac ata gca tat aag agg ggc tat ttc aat gag gaa	672
Arg Leu 210 Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr 220 Phe Asn Glu Glu	
ctc agt gag att ctc tca gat cca agt gat gat acc aaa gga ttt ttt	720
Leu Ser Glu Ile Leu Ser 230 Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe 240	
gac ccc aac act gaa gaa aat ctt acc tat ctg caa cta aaa gaa aga	768
Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr 250 Leu Gln Leu Lys Glu Arg 255	
tgc att aag gat gag gaa aca ggg ctc tgt ctt ctg cct ctg aaa gaa	816
Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu 270	
aag aag aaa cag gtg cag aca tca caa aag aat acc ctc agg aag cgt	864
Lys Lys Lys 275 Gln Val Gln Thr Ser 280 Gln Lys Asn Thr Leu Arg Lys Arg 285	
aga gtg gtc ata gtt gac cca gaa acc aat aaa gaa atg tct gtt cag	912
Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser Val Gln 300	
gag ggg gtc gac ctg cag cca agc tta att agc tga	948
Glu Gly Val Asp Leu Gln 310 Pro Ser Leu Ile Ser 315	

<210> 166  
 <211> 315  
 <212> PRT  
 <213> Homo sapiens  
 <400> 166

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Ser Phe Gln Gly Ile Arg Gln Pro Val Thr Val Thr Glu Leu Val Asp	
35 40 45	
Ser Gly Ile Leu Arg Pro Ser Thr Val Asn Glu Leu Glu Ser Gly Gln	
50 55 60	
Ile Ser Tyr Asp Glu Val Gly Glu Arg Ile Lys Asp Phe Leu Gln Gly	
65 70 75 80	
Ser Ser Cys Ile Ala Gly Ile Tyr Asn Glu Thr Thr Lys Gln Lys Leu	
85 90 95	

Gly Ile Tyr Glu Ala Met Lys Ile Gly Leu Val Arg Pro Gly Thr Ala  
100 105 110

Leu Glu Leu Leu Glu Ala Gln Ala Ala Thr Gly Phe Ile Val Asp Pro  
115 120 125

Val Ser Asn Leu Arg Leu Pro Val Glu Glu Ala Tyr Lys Arg Gly Leu  
130 135 140

Val Gly Ile Glu Phe Lys Glu Lys Leu Leu Ser Ala Glu Arg Ala Val  
145 150 155 160

Thr Gly Tyr Asn Asp Pro Glu Thr Gly Asn Ile Ile Ser Leu Phe Gln  
165 170 175

Ala Met Asn Lys Glu Leu Ile Glu Lys Gly His Gly Ile Arg Leu Leu  
180 185 190

Glu Ala Gln Ile Ala Thr Gly Gly Ile Ile Asp Pro Lys Glu Ser His  
195 200 205

Arg Leu Pro Val Asp Ile Ala Tyr Lys Arg Gly Tyr Phe Asn Glu Glu  
210 215 220

Leu Ser Glu Ile Leu Ser Asp Pro Ser Asp Asp Thr Lys Gly Phe Phe  
225 230 235 240

Asp Pro Asn Thr Glu Glu Asn Leu Thr Tyr Leu Gln Leu Lys Glu Arg  
245 250 255

Cys Ile Lys Asp Glu Glu Thr Gly Leu Cys Leu Leu Pro Leu Lys Glu  
260 265 270

Lys Lys Lys Gln Val Gln Thr Ser Gln Lys Asn Thr Leu Arg Lys Arg  
275 280 285

Arg Val Val Ile Val Asp Pro Glu Thr Asn Lys Glu Met Ser Val Gln  
290 295 300

Glu Gly Val Asp Leu Gln Pro Ser Leu Ile Ser  
305 310 315

<210> 167  
<211> 2232  
<212> DNA  
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<220>  
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<400> 167  
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Met Arg Gly Ser His His His His His His Gly Ser Ala Cys Glu Leu  
Seite 882

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ggt acc atg aac cac tcg ccg ctc aag acc gcc ttg gcg tac gaa tgc				96
Gly Thr Met Asn His Ser Pro Leu Lys Thr Ala Leu Ala Tyr Glu Cys	20	25	30	
ttc cag gac cag gac aac tcc acg ttg gct ttg ccg tcg gac caa aag				144
Phe Gln Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys	35	40	45	
atg aaa aca ggc acg tct ggc agg cag cgc gtg cag gag cag gtg atg				192
Met Lys Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met	50	55	60	
atg acc gtc aag cgg cag aag tcc aag tct tcc cag tcg tcc acc ctg				240
Met Thr Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu	65	70	75	80
agc cac tcc aat cga ggt tcc atg tat gat ggc ttg gct gac aat tac				288
Ser His Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr	85	90	95	
aac tat ggg acc acc agc agg agc agc tac tac tcc aag ttc cag gca				336
Asn Tyr Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala	100	105	110	
ggg aat ggc tca tgg gga tat ccg atc tac aat gga acc ctc aag cgg				384
Gly Asn Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg	115	120	125	
gag cct gac aac agg cgc ttc agc tcc tac agc cag atg gag aac tgg				432
Glu Pro Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp	130	135	140	
agc cgg cac tac ccc cgg ggc agc tgt aac acc acc ggc gca ggc agc				480
Ser Arg His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser	145	150	155	160
gac atc tgc ttc atg cag aaa atc aag gcg agc cgc agt gag ccc gac				528
Asp Ile Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp	165	170	175	
ctc tac tgt gac cca cgg ggc acc ctg cgc aag ggc acg ctg ggc agc				576
Leu Tyr Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser	180	185	190	
aag ggc cag aag acc acc cag aac cgc tac agc ttt tac agc acc tgc				624
Lys Gly Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys	195	200	205	
agt ggt cag aag gcc ata aag aag tgc cct gtg cgc ccg ccc tct tgt				672
Ser Gly Gln Lys Ala Ile Lys Lys Cys Pro Val Arg Pro Pro Ser Cys	210	215	220	
gcc tcc aag cag gac cct gtg tat atc ccg ccc atc tcc tgc aac aag				720
Ala Ser Lys Gln Asp Pro Val Tyr Ile Pro Pro Ile Ser Cys Asn Lys	225	230	235	240
gac ctg tcc ttt ggc cac tct agg gcc agc tcc aag atc tgc agt gag				768
Asp Leu Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu	245	250	255	
gac atc gag tgc agt ggg ctg acc atc ccc aag gct gtg cag tac ctg				816
Asp Ile Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu	260	265	270	
agc tcc cag gat gag aag tac cag gcc att ggg gcc tat tac atc cag				864
Ser Ser Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln	275	280	285	

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cat His	acc Thr 290	tgc Cys	ttc Phe	cag Gln	gat Asp	gaa Glu 295	tct Ser	gcc Ala	aag Lys	caa Gln	cag Gln 300	gtc Val	tat Tyr	cag Gln	ctg Leu	912
gga Gly 305	ggc Gly	atc Ile	tgc Cys	aag Lys	ctg Leu 310	gtg Val	gac Asp	ctc Leu	ctc Leu	cgc Arg 315	agc Ser	ccc Pro	aac Asn	cag Gln	aac Asn 320	960
gtc Val	cag Gln	cag Gln	gcc Ala	gcg Ala 325	gca Ala	ggg Gly	gcc Ala	ctg Leu	cgc Arg 330	aac Asn	ctg Leu	gtg Val	ttc Phe	agg Arg 335	agc Ser	1008
acc Thr	acc Thr	aac Asn	aag Lys 340	ctg Leu	gag Glu	acc Thr	cgg Arg	agg Arg 345	cag Gln	aat Asn	ggg Gly	atc Ile	cgc Arg 350	gag Glu	gca Ala	1056
gtc Val	agc Ser	ctc Leu 355	ctg Leu	agg Arg	aga Arg	acc Thr	ggg Gly 360	aac Asn	gcc Ala	gag Glu	atc Ile	cag Gln 365	aag Lys	cag Gln	ctg Leu	1104
act Thr	ggg Gly 370	ctg Leu	ctc Leu	tgg Trp	aac Asn	ctg Leu 375	tct Ser	tcc Ser	act Thr	gac Asp	gag Glu 380	ctg Leu	aag Lys	gag Glu	gaa Glu	1152
ctc Leu 385	att Ile	gcc Ala	gac Asp	gcc Ala	ctg Leu 390	cct Pro	gtt Val	ctg Leu	gcc Ala	gac Asp 395	cgc Arg	gtc Val	atc Ile	att Ile	ccc Pro 400	1200
ttc Phe	tct Ser	ggc Gly	tgg Trp	tgc Cys 405	gat Asp	ggc Gly	aat Asn	agc Ser	aac Asn 410	atg Met	tcc Ser	cgg Arg	gaa Glu	gtg Val 415	gtg Val	1248
gac Asp	cct Pro	gag Glu	gtc Val 420	ttc Phe	ttc Phe	aat Asn	gcc Ala	aca Thr 425	ggc Gly	tgc Cys	ttg Leu	agg Arg	aac Asn 430	ctg Leu	agc Ser	1296
tcg Ser	gcc Ala	gat Asp 435	gca Ala	ggc Gly	cgc Arg	cag Gln	acc Thr 440	atg Met	cgt Arg	aac Asn	tac Tyr	tca Ser 445	ggg Gly	ctc Leu	att Ile	1344
gat Asp	tcc Ser 450	ctc Leu	atg Met	gcc Ala	tat Tyr	gtc Val 455	cag Gln	aac Asn	tgt Cys	gta Val	gcg Ala 460	gcc Ala	agc Ser	cgc Arg	tgt Cys	1392
gac Asp 465	gac Asp	aag Lys	tct Ser	gtg Val	gaa Glu 470	aac Asn	tgc Cys	atg Met	tgt Cys	gtt Val 475	ctg Leu	cac His	aac Asn	ctc Leu	tcc Ser 480	1440
tac Tyr	cgc Arg	ctg Leu	gac Asp	gcc Ala 485	gag Glu	gtg Val	ccc Pro	acc Thr	cgc Arg 490	tac Tyr	cgc Arg	cag Gln	ctg Leu	gag Glu 495	tat Tyr	1488
aac Asn	gcc Ala	cgc Arg	aac Asn 500	gcc Ala	tac Tyr	acc Thr	gag Glu	aag Lys 505	tcc Ser	tcc Ser	act Thr	ggc Gly	tgc Cys 510	ttc Phe	agc Ser	1536
aac Asn	aag Lys 515	agc Ser	gac Asp	aag Lys	atg Met	atg Met	aac Asn 520	aac Asn	aac Asn	tat Tyr	gac Asp	tgc Cys 525	ccc Pro	ctg Leu	cct Pro	1584
gag Glu	gaa Glu 530	gag Glu	acc Thr	aac Asn	ccc Pro	aag Lys 535	ggc Gly	agc Ser	ggc Gly	tgg Trp	ttg Leu 540	tac Tyr	cat His	tca Ser	gat Asp	1632
gcc Ala 545	atc Ile	cgc Arg	acc Thr	tac Tyr	ctg Leu 550	aac Asn	ctc Leu	atg Met	ggc Gly	aag Lys 555	agc Ser	aag Lys	aaa Lys	gat Asp	gct Ala 560	1680



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acc	ctg	gag	gcc	tgt	gct	ggt	gcc	ctg	cag	aac	ctg	aca	gcc	agc	aag	1728
Thr	Leu	Glu	Ala	Cys	Ala	Gly	Ala	Leu	Gln	Asn	Leu	Thr	Ala	Ser	Lys	
				565					570					575		
ggg	ctg	atg	tcc	agt	ggc	atg	agc	cag	tgt	att	ggg	ctg	aag	gaa	aag	1776
Gly	Leu	Met	Ser	Ser	Gly	Met	Ser	Gln	Leu	Ile	Gly	Leu	Lys	Glu	Lys	
			580					585					590			
ggc	ctg	cca	caa	att	gcc	cgc	ctc	ctg	caa	tct	ggc	aac	tct	gat	gtg	1824
Gly	Leu	Pro	Gln	Ile	Ala	Arg	Leu	Leu	Gln	Ser	Gly	Asn	Ser	Asp	Val	
		595					600					605				
gtg	cgg	tcc	gga	gcc	tcc	ctc	ctg	agc	aac	atg	tcc	cgc	cac	cct	ctg	1872
Val	Arg	Ser	Gly	Ala	Ser	Leu	Leu	Ser	Asn	Met	Ser	Arg	His	Pro	Leu	
	610					615					620					
ctg	cac	aga	gtg	atg	ggg	aac	cag	gtg	ttc	ccg	gag	gtg	acc	agg	ctc	1920
Leu	His	Arg	Val	Met	Gly	Asn	Gln	Val	Phe	Pro	Glu	Val	Thr	Arg	Leu	
	625				630				635						640	
ctc	acc	agc	cac	act	ggc	aat	acc	agc	aac	tcc	gaa	gac	atc	ttg	tcc	1968
Leu	Thr	Ser	His	Thr	Gly	Asn	Thr	Ser	Asn	Ser	Glu	Asp	Ile	Leu	Ser	
				645					650					655		
tcg	gcc	tgc	tac	act	gtg	agg	aac	ctg	atg	gcc	tcg	cag	cca	caa	ctg	2016
Ser	Ala	Cys	Tyr	Thr	Val	Arg	Asn	Leu	Met	Ala	Ser	Gln	Pro	Gln	Leu	
			660					665					670			
gcc	aag	cag	tac	ttc	tcc	agc	agc	atg	ctc	aac	aac	atc	atc	aac	ctg	2064
Ala	Lys	Gln	Tyr	Phe	Ser	Ser	Ser	Met	Leu	Asn	Asn	Ile	Ile	Asn	Leu	
		675					680					685				
tgc	cga	agc	agt	gcc	tca	ccc	aag	gcc	gca	gaa	gct	gcc	cgg	ctt	ctc	2112
Cys	Arg	Ser	Ser	Ala	Ser	Pro	Lys	Ala	Ala	Glu	Ala	Ala	Arg	Leu	Leu	
	690					695					700					
ctg	tct	gac	atg	tgg	tcc	agc	aag	gaa	ctg	cag	ggg	gtc	ctc	aga	cag	2160
Leu	Ser	Asp	Met	Trp	Ser	Ser	Lys	Glu	Leu	Gln	Gly	Val	Leu	Arg	Gln	
	705				710					715					720	
caa	ggt	ttc	gat	agg	aac	atg	ctg	gga	acc	tta	gct	ggg	gcc	aac	agc	2208
Gln	Gly	Phe	Asp	Arg	Asn	Met	Leu	Gly	Thr	Leu	Ala	Gly	Ala	Asn	Ser	
				725					730					735		
ctc	agg	aac	ttc	acc	tcc	cga	ttc									2232
Leu	Arg	Asn	Phe	Thr	Ser	Arg	Phe									
			740													

<210> 168  
 <211> 744  
 <212> PRT  
 <213> Homo sapiens  
 <400> 168

Met	Arg	Gly	Ser	His	His	His	His	His	His	Gly	Ser	Ala	Cys	Glu	Leu
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Gly	Thr	Met	Asn	His	Ser	Pro	Leu	Lys	Thr	Ala	Leu	Ala	Tyr	Glu	Cys
			20					25					30		
Phe	Gln	Asp	Gln	Asp	Asn	Ser	Thr	Leu	Ala	Leu	Pro	Ser	Asp	Gln	Lys
		35					40					45			
Met	Lys	Thr	Gly	Thr	Ser	Gly	Arg	Gln	Arg	Val	Gln	Glu	Gln	Val	Met

50

55

60

Met Thr Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu  
65 70 75 80

Ser His Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr  
85 90 95

Asn Tyr Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala  
100 105 110

Gly Asn Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg  
115 120 125

Glu Pro Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp  
130 135 140

Ser Arg His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser  
145 150 155 160

Asp Ile Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp  
165 170 175

Leu Tyr Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser  
180 185 190

Lys Gly Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys  
195 200 205

Ser Gly Gln Lys Ala Ile Lys Lys Cys Pro Val Arg Pro Pro Ser Cys  
210 215 220

Ala Ser Lys Gln Asp Pro Val Tyr Ile Pro Pro Ile Ser Cys Asn Lys  
225 230 235 240

Asp Leu Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu  
245 250 255

Asp Ile Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu  
260 265 270

Ser Ser Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln  
275 280 285

His Thr Cys Phe Gln Asp Glu Ser Ala Lys Gln Gln Val Tyr Gln Leu  
290 295 300

Gly Gly Ile Cys Lys Leu Val Asp Leu Leu Arg Ser Pro Asn Gln Asn  
305 310 315 320

Val Gln Gln Ala Ala Ala Gly Ala Leu Arg Asn Leu Val Phe Arg Ser  
325 330 335

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Thr Thr Asn Lys Leu Glu Thr Arg Arg Gln Asn Gly Ile Arg Glu Ala  
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 355 360 365  
 Thr Gly Leu Leu Trp Asn Leu Ser Ser Thr Asp Glu Leu Lys Glu Glu  
 370 375 380  
 Leu Ile Ala Asp Ala Leu Pro Val Leu Ala Asp Arg Val Ile Ile Pro  
 385 390 395 400  
 Phe Ser Gly Trp Cys Asp Gly Asn Ser Asn Met Ser Arg Glu Val Val  
 405 410 415  
 Asp Pro Glu Val Phe Phe Asn Ala Thr Gly Cys Leu Arg Asn Leu Ser  
 420 425 430  
 Ser Ala Asp Ala Gly Arg Gln Thr Met Arg Asn Tyr Ser Gly Leu Ile  
 435 440 445  
 Asp Ser Leu Met Ala Tyr Val Gln Asn Cys Val Ala Ala Ser Arg Cys  
 450 455 460  
 Asp Asp Lys Ser Val Glu Asn Cys Met Cys Val Leu His Asn Leu Ser  
 465 470 475 480  
 Tyr Arg Leu Asp Ala Glu Val Pro Thr Arg Tyr Arg Gln Leu Glu Tyr  
 485 490 495  
 Asn Ala Arg Asn Ala Tyr Thr Glu Lys Ser Ser Thr Gly Cys Phe Ser  
 500 505 510  
 Asn Lys Ser Asp Lys Met Met Asn Asn Asn Tyr Asp Cys Pro Leu Pro  
 515 520 525  
 Glu Glu Glu Thr Asn Pro Lys Gly Ser Gly Trp Leu Tyr His Ser Asp  
 530 535 540  
 Ala Ile Arg Thr Tyr Leu Asn Leu Met Gly Lys Ser Lys Lys Asp Ala  
 545 550 555 560  
 Thr Leu Glu Ala Cys Ala Gly Ala Leu Gln Asn Leu Thr Ala Ser Lys  
 565 570 575  
 Gly Leu Met Ser Ser Gly Met Ser Gln Leu Ile Gly Leu Lys Glu Lys  
 580 585 590  
 Gly Leu Pro Gln Ile Ala Arg Leu Leu Gln Ser Gly Asn Ser Asp Val  
 595 600 605

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Val Arg Ser Gly Ala Ser Leu Leu Ser Asn Met Ser Arg His Pro Leu  
610 615 620

Leu His Arg Val Met Gly Asn Gln Val Phe Pro Glu Val Thr Arg Leu  
625 630 635 640

Leu Thr Ser His Thr Gly Asn Thr Ser Asn Ser Glu Asp Ile Leu Ser  
645 650 655

Ser Ala Cys Tyr Thr Val Arg Asn Leu Met Ala Ser Gln Pro Gln Leu  
660 665 670

Ala Lys Gln Tyr Phe Ser Ser Ser Met Leu Asn Asn Ile Ile Asn Leu  
675 680 685

Cys Arg Ser Ser Ala Ser Pro Lys Ala Ala Glu Ala Ala Arg Leu Leu  
690 695 700

Leu Ser Asp Met Trp Ser Ser Lys Glu Leu Gln Gly Val Leu Arg Gln  
705 710 715 720

Gln Gly Phe Asp Arg Asn Met Leu Gly Thr Leu Ala Gly Ala Asn Ser  
725 730 735

Leu Arg Asn Phe Thr Ser Arg Phe  
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<211> 846  
<212> DNA  
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<220>  
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gac cag gac aac tcc acg ttg gct ttg ccg tcg gac caa aag atg aaa	96
Asp Gln Asp Asn Ser Thr Leu Ala Leu Pro Ser Asp Gln Lys Met Lys	
20 25 30	
aca ggc acg tct ggc agg cag cgc gtg cag gag cag gtg atg atg acc	144
Thr Gly Thr Ser Gly Arg Gln Arg Val Gln Glu Gln Val Met Met Thr	
35 40 45	
gtc aag cgg cag aag tcc aag tct tcc cag tcg tcc acc ctg agc cac	192
Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Thr Thr Leu Ser His	
50 55 60	
tcc aat cga ggt tcc atg tat gat ggc ttg gct gac aat tac aac tat	240
Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Tyr	
65 70 75 80	
ggg acc acc agc agg agc agc tac tac tcc aag ttc cag gca ggg aat	288

Gly	Thr	Thr	Ser	Arg	Ser	Ser	Tyr	Tyr	Ser	Lys	Phe	Gln	Ala	Gly	Asn		
				85					90					95			
ggc	tca	tgg	gga	tat	ccg	atc	tac	aat	gga	acc	ctc	aag	cgg	gag	cct		336
Gly	Ser	Trp	Gly	Tyr	Pro	Ile	Tyr	Asn	Gly	Thr	Leu	Lys	Arg	Glu	Pro		
			100					105					110				
gac	aac	agg	cgc	ttc	agc	tcc	tac	agc	cag	atg	gag	aac	tgg	agc	cgg		384
Asp	Asn	Arg	Arg	Phe	Ser	Ser	Tyr	Ser	Gln	Met	Glu	Asn	Trp	Ser	Arg		
		115					120					125					
cac	tac	ccc	cgg	ggc	agc	tgt	aac	acc	acc	ggc	gca	ggc	agc	gac	atc		432
His	Tyr	Pro	Arg	Gly	Ser	Cys	Asn	Thr	Thr	Gly	Ala	Gly	Ser	Asp	Ile		
	130					135					140						
tgc	ttc	atg	cag	aaa	atc	aag	gcg	agc	cgc	agt	gag	ccc	gac	ctc	tac		480
Cys	Phe	Met	Gln	Lys	Ile	Lys	Ala	Ser	Arg	Ser	Glu	Pro	Asp	Leu	Tyr		
145					150					155					160		
tgt	gac	cca	cgg	ggc	acc	ctg	cgc	aag	ggc	acg	ctg	ggc	agc	aag	ggc		528
Cys	Asp	Pro	Arg	Gly	Thr	Leu	Arg	Lys	Gly	Thr	Leu	Gly	Ser	Lys	Gly		
			165						170					175			
cag	aag	acc	acc	cag	aac	cgc	tac	agc	ttt	tac	agc	acc	tgc	agt	ggt		576
Gln	Lys	Thr	Thr	Gln	Asn	Arg	Tyr	Ser	Phe	Tyr	Ser	Thr	Cys	Ser	Gly		
			180					185					190				
cag	aag	gcc	ata	aag	aag	tgc	cct	gtg	cgc	ccg	ccc	tct	tgt	gcc	tcc		624
Gln	Lys	Ala	Ile	Lys	Lys	Cys	Pro	Val	Arg	Pro	Pro	Ser	Cys	Ala	Ser		
		195					200					205					
aag	cag	gac	cct	gtg	tat	atc	ccg	ccc	atc	tcc	tgc	aac	aag	gac	ctg		672
Lys	Gln	Asp	Pro	Val	Tyr	Ile	Pro	Pro	Ile	Ser	Cys	Asn	Lys	Asp	Leu		
	210					215					220						
tcc	ttt	ggc	cac	tct	agg	gcc	agc	tcc	aag	atc	tgc	agt	gag	gac	atc		720
Ser	Phe	Gly	His	Ser	Arg	Ala	Ser	Ser	Lys	Ile	Cys	Ser	Glu	Asp	Ile		
225					230					235					240		
gag	tgc	agt	ggg	ctg	acc	atc	ccc	aag	gct	gtg	cag	tac	ctg	agc	tcc		768
Glu	Cys	Ser	Gly	Leu	Thr	Ile	Pro	Lys	Ala	Val	Gln	Tyr	Leu	Ser	Ser		
			245						250					255			
cag	gat	gag	aag	tac	cag	gcc	att	ggg	gcc	tat	tac	atc	cag	cat	acc		816
Gln	Asp	Glu	Lys	Tyr	Gln	Ala	Ile	Gly	Ala	Tyr	Tyr	Ile	Gln	His	Thr		
			260					265					270				
gga	tcc	aga	tct	cat	cac	cat	cac	cat	cac								846
Gly	Ser	Arg	Ser	His	His	His	His	His	His								
		275					280										

<210> 170  
 <211> 282  
 <212> PRT  
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<400> 170

Met	Asn	His	Ser	Pro	Leu	Lys	Thr	Ala	Leu	Ala	Tyr	Glu	Cys	Phe	Gln		
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Asp	Gln	Asp	Asn	Ser	Thr	Leu	Ala	Leu	Pro	Ser	Asp	Gln	Lys	Met	Lys		
			20					25					30				

Thr	Gly	Thr	Ser	Gly	Arg	Gln	Arg	Val	Gln	Glu	Gln	Val	Met	Met	Thr		
	35					40						45					

Val Lys Arg Gln Lys Ser Lys Ser Ser Gln Ser Ser Thr Leu Ser His  
 50 55 60  
 Ser Asn Arg Gly Ser Met Tyr Asp Gly Leu Ala Asp Asn Tyr Asn Tyr  
 65 70 75 80  
 Gly Thr Thr Ser Arg Ser Ser Tyr Tyr Ser Lys Phe Gln Ala Gly Asn  
 85 90 95  
 Gly Ser Trp Gly Tyr Pro Ile Tyr Asn Gly Thr Leu Lys Arg Glu Pro  
 100 105 110  
 Asp Asn Arg Arg Phe Ser Ser Tyr Ser Gln Met Glu Asn Trp Ser Arg  
 115 120 125  
 His Tyr Pro Arg Gly Ser Cys Asn Thr Thr Gly Ala Gly Ser Asp Ile  
 130 135 140  
 Cys Phe Met Gln Lys Ile Lys Ala Ser Arg Ser Glu Pro Asp Leu Tyr  
 145 150 155 160  
 Cys Asp Pro Arg Gly Thr Leu Arg Lys Gly Thr Leu Gly Ser Lys Gly  
 165 170 175  
 Gln Lys Thr Thr Gln Asn Arg Tyr Ser Phe Tyr Ser Thr Cys Ser Gly  
 180 185 190  
 Gln Lys Ala Ile Lys Lys Cys Pro Val Arg Pro Pro Ser Cys Ala Ser  
 195 200 205  
 Lys Gln Asp Pro Val Tyr Ile Pro Pro Ile Ser Cys Asn Lys Asp Leu  
 210 215 220  
 Ser Phe Gly His Ser Arg Ala Ser Ser Lys Ile Cys Ser Glu Asp Ile  
 225 230 235 240  
 Glu Cys Ser Gly Leu Thr Ile Pro Lys Ala Val Gln Tyr Leu Ser Ser  
 245 250 255  
 Gln Asp Glu Lys Tyr Gln Ala Ile Gly Ala Tyr Tyr Ile Gln His Thr  
 260 265 270  
 Gly Ser Arg Ser His His His His His His  
 275 280