

1
SEQUENCE LISTING

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DUPUIS, Julien

<120> HYBRID PROTEINS COMPRISING MEMBRANE RECEPTOR AND ION CHANNEL, AND
THEIR USE AS BIOSENSORS

<130> WOB 08 AE UJF RCPG

<150> EP 08 290 547.2
<151> 2008-06-12

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<170> PatentIn version 3.5

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 Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu
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 Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala
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 His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr
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 Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu
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 Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met
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 Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro
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Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala
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gac ctc aaa tgg cca cac act ctg ctc att ttc acc atg tcc ttc ctg	240
Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu	
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Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala	
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Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe	

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1206

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Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu
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Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala
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His Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala
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 Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
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 Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 325 330 335
 Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
 340 345 350
 Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp
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 Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val
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 Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu
 385 390 395 400
 Ser

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ctg gca gag gac cct gca gag ccc agg tac cgt act cga gag agg agg	96
Leu Ala Glu Asp Pro Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg	
20 25 30	
gcc cgc ttc gtg tcc aag aaa ggc aac tgc aac gtc gcc cac aag aac	144
Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn	

35				40				11				45				
att Ile	cga Arg 50	gag Glu	cag Gln	ggc Gly	cgc Arg	ttc Phe 55	ctg Leu	cag Gln	gat Asp	gtg Val	ttc Phe 60	acc Thr	acg Thr	ctg Leu	gtg Val	192
gac Asp 65	ctc Leu	aaa Lys	tgg Trp	cca Pro	cac His 70	act Thr	ctg Leu	ctc Leu	att Ile	ttc Phe 75	acc Thr	atg Met	tcc Ser	ttc Phe	ctg Leu 80	240
tgc Cys	agc Ser	tgg Trp	ctg Leu	ctc Leu 85	ttt Phe	gcc Ala	atg Met	gtc Val	tgg Trp 90	tgg Trp	ctc Leu	atc Ile	gcc Ala	ttc Phe 95	gcc Ala	288
cac His	ggt Gly	gat Asp	ctc Leu 100	tat Tyr	gct Ala	tac Tyr	atg Met	gag Glu 105	aaa Lys	ggc Gly	atc Ile	acg Thr	gac Asp 110	ctg Leu	gcc Ala	336
ccc Pro	gga Gly	gag Glu 115	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 120	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 125	cac His	tcc Ser	ttt Phe	384
tca Ser	tct Ser 130	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 135	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 140	acc Thr	att Ile	ggt Gly	ttc Phe	432
ggc Gly 145	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 150	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 155	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 160	480
att Ile	gtg Val	cag Gln	aat Asn	atc Ile 165	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 170	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 175	ggc Gly	528
tgc Cys	atc Ile	ttc Phe	atg Met 180	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 185	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 190	acc Thr	ctc Leu	576
atc Ile	ttc Phe	agc Ser 195	aag Lys	cat His	gct Ala	gtg Val	atc Ile 200	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 205	cgc Arg	ctg Leu	tgc Cys	624
ttc Phe	atg Met 210	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 215	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 220	atc Ile	att Ile	agc Ser	gcc Ala	672
acc Thr 225	atc Ile	cac His	atg Met	cag Gln	gtg Val 230	gtg Val	cgc Arg	aag Lys	acc Thr 235	acc Thr 235	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 240	720
gtt Val	gtg Val	cct Pro	ctc Leu	cac His 245	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 250	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 255	ggt Gly	768
ggt Gly	aac Asn	ggc Gly	atc Ile 260	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 265	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 270	gtc Val	atc Ile	816
gac Asp	tcc Ser	aac Asn 275	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 280	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 285	ctg Leu	cac His	cac His	864
cac His	cag Gln 290	gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 295	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 300	gtg Val	gta Val	gaa Glu	acc Thr	912
acg Thr 305	ggc Gly	atc Ile	acc Thr	acc Thr	cag Gln 310	gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 315	cta Leu	gct Ala	gac Asp	gag Glu	att Ile 320	960

cta tgg ggg cag cgc ttt gtc ccc att gtg gcc gag gag gac ggc cgc 1008
Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
325 330 335

tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca		1056
Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr		
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Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
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Leu Ala Glu Asp Pro Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg
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Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn
35 40 45

Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val
50 55 60

Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu
65 70 75 80

Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala
85 90 95

His Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala
100 105 110

Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
115 120 125

Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
130 135 140

Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
145 150 155 160

Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
165 170 175

Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
180 185 190

13

Ile Phe Ser₁₉₅ Lys His Ala Val Ile Thr₂₀₀ Leu Arg¹³ His Gly₂₀₅ Arg Leu Cys

Phe Met₂₁₀ Leu Arg Val Gly Asp₂₁₅ Leu Arg Lys Ser Met₂₂₀ Ile Ile Ser Ala

Thr₂₂₅ Ile His Met Gln Val₂₃₀ Val Arg Lys Thr Thr₂₃₅ Ser Pro Glu Gly Glu₂₄₀

Val Val Pro Leu His₂₄₅ Gln Val Asp Ile Pro₂₅₀ Met Glu Asn Gly Val₂₅₅ Gly

Gly Asn Gly Ile₂₆₀ Phe Leu Val Ala Pro₂₆₅ Leu Ile Ile Tyr His₂₇₀ Val Ile

Asp Ser Asn₂₇₅ Ser Pro Leu Tyr Asp₂₈₀ Leu Ala Pro Ser Asp₂₈₅ Leu His His

His Gln₂₉₀ Asp Leu Glu Ile Ile₂₉₅ Val Ile Leu Glu Gly₃₀₀ Val Val Glu Thr

Thr Gly Ile Thr Thr Gln₃₁₀ Ala Arg Thr Ser Tyr₃₁₅ Leu Ala Asp Glu Ile₃₂₀

Leu Trp Gly Gln Arg₃₂₅ Phe Val Pro Ile Val₃₃₀ Ala Glu Glu Asp Gly₃₃₅ Arg

Tyr Ser Val Asp₃₄₀ Tyr Ser Lys Phe Gly₃₄₅ Asn Thr Ile Lys Val₃₅₀ Pro Thr

Pro Leu Cys₃₅₅ Thr Ala Arg Gln Leu₃₆₀ Asp Glu Asp Arg Ser₃₆₅

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cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc	96
Pro Tyr Lys Thr ₂₀ Phe Glu Val Val ₂₅ Phe Ile Val Leu Val ₃₀ Ala Gly Ser	
ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att	144
Leu Ser Leu ₃₅ Val Thr Ile Ile Gly ₄₀ Asn Ile Leu Val ₄₅ Met Val Ser Ile	
aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc	192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser	

50					55					14					60					
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240				
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288				
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	ggt Val	atg Met	336				
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384				
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432				
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480				
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528				
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576				
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624				
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672				
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720				
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768				
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816				
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864				
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912				
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960				
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008				

tgt	acc	cca	act	aat	acc	acc	gtg	gag	gta	gtg	ggg	tct	tca	ggt	cag	1056
Cys	Thr	Pro	Thr	Asn	Thr	Thr	Val	Glu	Val	Val	Gly	Ser	Ser	Gly	Gln	
			340					345					350			
aat	gga	gat	gaa	aag	cag	aat	att	gta	gcc	cgc	aag	att	gtg	aag	atg	1104
Asn	Gly	Asp	Glu	Lys	Gln	Asn	Ile	Val	Ala	Arg	Lys	Ile	Val	Lys	Met	
		355					360					365				
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152
Thr	Lys	Gln	Pro	Ala	Lys	Lys	Lys	Pro	Pro	Pro	Ser	Arg	Glu	Lys	Lys	
	370					375					380					
gtc	acc	agg	aca	atc	ttg	gct	att	ctg	ttg	gct	ttc	atc	atc	act	tgg	1200
Val	Thr	Arg	Thr	Ile	Leu	Ala	Ile	Leu	Leu	Ala	Phe	Ile	Ile	Thr	Trp	
	385				390					395					400	
gcc	cca	tac	aat	gtc	atg	gtg	ctc	att	aac	acc	ttt	tgt	gca	cct	tgc	1248
Ala	Pro	Tyr	Asn	Val	Met	Val	Leu	Ile	Asn	Thr	Phe	Cys	Ala	Pro	Cys	
				405					410					415		
atc	ccc	aac	act	gtg	tgg	aca	att	ggg	tac	tgg	ctt	tgt	tac	atc	aac	1296
Ile	Pro	Asn	Thr	Val	Trp	Thr	Ile	Gly	Tyr	Trp	Leu	Cys	Tyr	Ile	Asn	
			420					425					430			
agc	act	atc	aac	cct	gcc	tgc	tat	gca	ctt	tgc	aat	gcc	acc	ttc	aag	1344
Ser	Thr	Ile	Asn	Pro	Ala	Cys	Tyr	Ala	Leu	Cys	Asn	Ala	Thr	Phe	Lys	
		435					440					445				
aag	acc	ttt	aaa	cac	ctt	ctc	atg	tgt	cat	tat	aag	aac	ata	ggc	gct	1392
Lys	Thr	Phe	Lys	His	Leu	Leu	Met	Cys	His	Tyr	Lys	Asn	Ile	Gly	Ala	
	450					455					460					
aca	agg	taa														1401
Thr	Arg															
465																

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 <211> 466
 <212> PRT
 <213> Homo sapiens

<400> 10

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Pro	Tyr	Lys	Thr	Phe	Glu	Val	Val	Phe	Ile	Val	Leu	Val	Ala	Gly	Ser	
			20					25					30			
Leu	Ser	Leu	Val	Thr	Ile	Ile	Gly	Asn	Ile	Leu	Val	Met	Val	Ser	Ile	
		35					40					45				
Lys	Val	Asn	Arg	His	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	Leu	Phe	Ser	
	50					55					60					
Leu	Ala	Cys	Ala	Asp	Leu	Ile	Ile	Gly	Val	Phe	Ser	Met	Asn	Leu	Tyr	
65					70				75						80	
Thr	Leu	Tyr	Thr	Val	Ile	Gly	Tyr	Trp	Pro	Leu	Gly	Pro	Val	Val	Cys	
				85					90					95		

Asp Leu Trp Leu₁₀₀ Ala Leu Asp Tyr Val₁₀₅ Val¹⁶ Ser Asn Ala Ser Val Met
 Asn Leu Leu₁₁₅ Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val₁₂₅ Thr Lys Pro
 Leu Thr₁₃₀ Tyr Pro Val Lys Arg₁₃₅ Thr Thr Lys Met Ala₁₄₀ Gly Met Met Ile
 Ala₁₄₅ Ala Ala Trp Val Leu₁₅₀ Ser Phe Ile Leu Trp₁₅₅ Ala Pro Ala Ile Leu₁₆₀
 Phe Trp Gln Phe Ile₁₆₅ Val Gly Val Arg Thr₁₇₀ Val Glu Asp Gly Glu₁₇₅ Cys
 Tyr Ile Gln Phe₁₈₀ Phe Ser Asn Ala Ala₁₈₅ Val Thr Phe Gly Thr₁₉₀ Ala Ile
 Ala Ala Phe₁₉₅ Tyr Leu Pro Val Ile₂₀₀ Ile Met Thr Val Leu₂₀₅ Tyr Trp His
 Ile Ser₂₁₀ Arg Ala Ser Lys Ser₂₁₅ Arg Ile Lys Lys Asp₂₂₀ Lys Lys Glu Pro
 Val₂₂₅ Ala Asn Gln Asp Pro₂₃₀ Val Ser Pro Ser Leu₂₃₅ Val Gln Gly Arg Ile₂₄₀
 Val Lys Pro Asn₂₄₅ Asn Asn Met Pro Ser₂₅₀ Ser Asp Asp Gly Leu₂₅₅ Glu
 His Asn Lys Ile₂₆₀ Gln Asn Gly Lys Ala₂₆₅ Pro Arg Asp Pro Val₂₇₀ Thr Glu
 Asn Cys Val₂₇₅ Gln Gly Glu Glu Lys₂₈₀ Glu Ser Ser Asn Asp₂₈₅ Ser Thr Ser
 Val₂₉₀ Ser Ala Val Ala Ser Asn₂₉₅ Met Arg Asp Asp Glu₃₀₀ Ile Thr Gln Asp
 Glu₃₀₅ Asn Thr Val Ser Thr₃₁₀ Ser Leu Gly His Ser₃₁₅ Lys Asp Glu Asn Ser₃₂₀
 Lys Gln Thr Cys Ile₃₂₅ Arg Ile Gly Thr Lys₃₃₀ Thr Pro Lys Ser Asp₃₃₅ Ser
 Cys Thr Pro Thr₃₄₀ Asn Thr Thr Val Glu₃₄₅ Val Val Gly Ser Ser₃₅₀ Gly Gln
 Asn Gly Asp₃₅₅ Glu Lys Gln Asn Ile₃₆₀ Val Ala Arg Lys Ile₃₆₅ Val Lys Met
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys

370

375

380

Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400

Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415

Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430

Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445

Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460

Thr Arg
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 <213> Homo sapiens

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 agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg 96
 Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30
 gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg 144
 Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 ttt ggc aat gtg ctg gtc atc aca gcc att gcc aag ttc gag cgt ctg 192
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 cag acg gtc acc aac tac ttc atc act tca ctg gcc tgt gct gat ctg 240
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 gtc atg ggc ctg gca gtg gtg ccc ttt ggg gcc gcc cat att ctt atg 288
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 aaa atg tgg act ttt ggc aac ttc tgg tgc gag ttt tgg act tcc att 336
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 gat gtg ctg tgc gtc acg gcc agc att gag acc ctg tgc gtg atc gca 384
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125

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ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
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acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320	960
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cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	ggg Gly	aat Asn	1056
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gaa Glu 370	cag Gln	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr	1152
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggt Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400	1200

tca caa ggg agg aat tgt agt aca aat ¹⁹gac tca ctg ctg taa
 Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu
 405 410

1242

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 <213> Homo sapiens

<400> 12

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Arg
 1 5 10 15

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45

Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60

Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95

Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110

Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125

Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140

Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160

Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175

Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190

Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205

Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220

Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe

225	230								20 235				240			
His	Val	Gln	Asn	Leu 245	Ser	Gln	Val	Glu	Gln 250	Asp	Gly	Arg	Thr	Gly 255	His	
Gly	Leu	Arg	Arg 260	Ser	Ser	Lys	Phe	Cys 265	Leu	Lys	Glu	His	Lys 270	Ala	Leu	
Lys	Thr	Leu 275	Gly	Ile	Ile	Met	Gly 280	Thr	Phe	Thr	Leu	Cys 285	Trp	Leu	Pro	
Phe	Phe 290	Ile	Val	Asn	Ile	Val 295	His	Val	Ile	Gln	Asp 300	Asn	Leu	Ile	Arg	
Lys 305	Glu	Val	Tyr	Ile	Leu 310	Leu	Asn	Trp	Ile	Gly 315	Tyr	Val	Asn	Ser	Gly 320	
Phe	Asn	Pro	Leu	Ile 325	Tyr	Cys	Arg	Ser	Pro 330	Asp	Phe	Arg	Ile	Ala 335	Phe	
Gln	Glu	Leu	Leu 340	Cys	Leu	Arg	Arg	Ser 345	Ser	Leu	Lys	Ala	Tyr 350	Gly	Asn	
Gly	Tyr	Ser 355	Ser	Asn	Gly	Asn	Thr 360	Gly	Glu	Gln	Ser	Gly 365	Tyr	His	Val	
Glu	Gln 370	Glu	Lys	Glu	Asn	Lys 375	Leu	Leu	Cys	Glu	Asp 380	Leu	Pro	Gly	Thr	
Glu 385	Asp	Phe	Val	Gly	His 390	Gln	Gly	Thr	Val	Pro 395	Ser	Asp	Asn	Ile	Asp 400	
Ser	Gln	Gly	Arg	Asn 405	Cys	Ser	Thr	Asn	Asp 410	Ser	Leu	Leu				

gtc Val 50	ttc Phe	ggc Gly	aac Asn	gtg Val	ctg Leu	gtg Val 55	tgc Cys	atg Met	gct Ala	gtg Val	tcc Ser 60	cgc Arg	gag Glu	aag Lys	gcg Ala	192
ctg Leu 65	cag Gln	acc Thr	acc Thr	acc Thr	aac Asn 70	tac Tyr	ctg Leu	atc Ile	gtc Val	agc Ser 75	ctc Leu	gca Ala	gtg Val	gcc Ala	gac Asp 80	240
ctc Leu	ctc Leu	gtc Val	gcc Ala	aca Thr 85	ctg Leu	gtc Val	atg Met	cca Pro	tgg Trp 90	gtt Val	gtc Val	tac Tyr	ctg Leu	gag Glu 95	gtg Val	288
gta Val	ggg Gly	gag Glu	tgg Trp 100	aaa Lys	ttc Phe	agc Ser	agg Arg	att Ile 105	cac His	tgt Cys	gac Asp	atc Ile	ttc Phe 110	gtc Val	act Thr	336
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	tgg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cac His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	cct Pro	gac Asp 320	960

22

agc	ccc	gcc	aaa	cca	gag	aag	aat	ggg	cat	gcc	aaa	gac	cac	ccc	aag	1008
Ser	Pro	Ala	Lys	Pro	Glu	Lys	Asn	Gly	His	Ala	Lys	Asp	His	Pro	Lys	
				325					330					335		
att	gcc	aag	atc	ttt	gag	atc	cag	acc	atg	ccc	aat	ggc	aaa	acc	cgg	1056
Ile	Ala	Lys	Ile	Phe	Glu	Ile	Gln	Thr	Met	Pro	Asn	Gly	Lys	Thr	Arg	
			340					345					350			
acc	tcc	ctc	aag	acc	atg	agc	cgt	aga	aag	ctc	tcc	cag	cag	aag	gag	1104
Thr	Ser	Leu	Lys	Thr	Met	Ser	Arg	Arg	Lys	Leu	Ser	Gln	Gln	Lys	Glu	
		355					360					365				
aag	aaa	gcc	act	cag	atg	ctc	gcc	att	gtt	ctc	ggc	gtg	ttc	atc	atc	1152
Lys	Lys	Ala	Thr	Gln	Met	Leu	Ala	Ile	Val	Leu	Gly	Val	Phe	Ile	Ile	
	370					375					380					
tgc	tgg	ctg	ccc	ttc	ttc	atc	aca	cac	atc	ctg	aac	ata	cac	tgt	gac	1200
Cys	Trp	Leu	Pro	Phe	Phe	Ile	Thr	His	Ile	Leu	Asn	Ile	His	Cys	Asp	
385					390					395					400	
tgc	aac	atc	ccg	cct	gtc	ctg	tac	agc	gcc	ttc	acg	tgg	ctg	ggc	tat	1248
Cys	Asn	Ile	Pro	Pro	Val	Leu	Tyr	Ser	Ala	Phe	Thr	Trp	Leu	Gly	Tyr	
				405					410					415		
gtc	aac	agc	gcc	gtg	aac	ccc	atc	atc	tac	acc	acc	ttc	aac	att	gag	1296
Val	Asn	Ser	Ala	Val	Asn	Pro	Ile	Ile	Tyr	Thr	Thr	Phe	Asn	Ile	Glu	
			420					425					430			
ttc	cgc	aag	gcc	ttc	ctg	aag	atc	ctt	cac	tgc	tga					1332
Phe	Arg	Lys	Ala	Phe	Leu	Lys	Ile	Leu	His	Cys						
		435					440									

<210> 14
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 <212> PRT
 <213> Homo sapiens
 <400> 14

Met	Asp	Pro	Leu	Asn	Leu	Ser	Trp	Tyr	Asp	Asp	Asp	Leu	Glu	Arg	Gln	
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Asn	Trp	Ser	Arg	Pro	Phe	Asn	Gly	Ser	Asp	Gly	Lys	Ala	Asp	Arg	Pro	
			20					25					30			
His	Tyr	Asn	Tyr	Tyr	Ala	Thr	Leu	Leu	Thr	Leu	Leu	Ile	Ala	Val	Ile	
		35					40					45				
Val	Phe	Gly	Asn	Val	Leu	Val	Cys	Met	Ala	Val	Ser	Arg	Glu	Lys	Ala	
	50					55					60					
Leu	Gln	Thr	Thr	Thr	Asn	Tyr	Leu	Ile	Val	Ser	Leu	Ala	Val	Ala	Asp	
65					70					75					80	
Leu	Leu	Val	Ala	Thr	Leu	Val	Met	Pro	Trp	Val	Val	Tyr	Leu	Glu	Val	
				85					90					95		
Val	Gly	Glu	Trp	Lys	Phe	Ser	Arg	Ile	His	Cys	Asp	Ile	Phe	Val	Thr	
			100					105					110			
Leu	Asp	Val	Met	Met	Cys	Thr	Ala	Ser	Ile	Leu	Asn	Leu	Cys	Ala	Ile	

115 120 23 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320
 Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335
 Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 350
 Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360 365
 Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380
 Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400

Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415

Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430

Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys
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 <213> Homo sapiens

<220>
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 gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc 96
 Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
 20 25 30
 gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc 144
 Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
 35 40 45
 tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag 192
 Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
 50 55 60
 cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc 240
 Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
 65 70 75 80
 acc gac ctc atg gtg tcg gtg ttg gtg ctg ccc atg gcc gcg ctg tat 288
 Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
 85 90 95
 cag gtg ctc aac aag tgg aca ctg ggc cag gta acc tgc gac ctg ttc 336
 Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
 100 105 110
 atc gcc ctc gac gtg ctg tgc tgc acc tca tcc atc ttg cac ctg tgc 384
 Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
 115 120 125
 gcc atc gcg ctg gac agg tac tgg gcc atc acg gac ccc atc gac tac 432
 Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140
 gtg aac aag agg acg ccc cgg ccg cgt gcg ctc atc tcg ctc act tgg 480
 Val Asn Lys Arg Thr Pro Arg Pro Arg Ala Leu Ile Ser Leu Thr Trp
 145 150 155 160
 ctt att ggc ttc ctc atc tct atc ccg ccc atc ctg ggc tgg cgc acc 528
 Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Ile Leu Gly Trp Arg Thr
 165 170 175

ccg gaa gac cgc tcg gac ccc gac gca tgc acc att agc aag gat cat	576
Pro Glu Asp Arg 180 Ser Asp Pro Asp Ala 185 Cys Thr Ile Ser Lys 190 Asp His	
ggc tac act atc tat tcc acc ttt gga gct ttc tac atc ccg ctg ctg	624
Gly Tyr Thr 195 Ile Tyr Ser Thr Phe 200 Gly Ala Phe Tyr Ile 205 Pro Leu Leu	
ctc atg ctg gtt ctc tat ggg cgc ata ttc cga gct gcg cgc ttc cgc	672
Leu Met 210 Leu Val Leu Tyr Gly 215 Arg Ile Phe Arg Ala 220 Ala Arg Phe Arg	
atc cgc aag acg gtc aaa aag gtg gag aag acc gga gcg gac acc cgc	720
Ile Arg Lys Thr Val Lys 230 Lys Val Glu Lys Thr 235 Gly Ala Asp Thr Arg 240	
cat gga gca tct ccc gcc ccg cag ccc aag aag agt gtg aat gga gag	768
His Gly Ala Ser Pro 245 Ala Pro Gln Pro Lys 250 Lys Ser Val Asn Gly 255 Glu	
tcg ggg agc agg aac tgg agg ctg ggc gtg gag agc aag gct ggg ggt	816
Ser Gly Ser Arg 260 Asn Trp Arg Leu Gly 265 Val Glu Ser Lys Ala 270 Gly Gly	
gct ctg tgc gcc aat ggc gcg gtg agg caa ggt gac gat ggc gcc gcc	864
Ala Leu Cys 275 Ala Asn Gly Ala Val 280 Arg Gln Gly Asp Asp 285 Gly Ala Ala	
ctg gag gtg atc gag gtg cac cga gtg ggc aac tcc aaa gag cac ttg	912
Leu Glu Val Ile Glu Val His 295 Arg Val Gly Asn Ser 300 Lys Glu His Leu	
cct ctg ccc agc gag gct ggt cct acc cct tgt gcc ccc gcc tct ttc	960
Pro Leu Pro Ser Glu Ala 310 Gly Pro Thr Pro Cys 315 Ala Pro Ala Ser Phe 320	
gag agg aaa aat gag cgc aac gcc gag gcg aag cgc aag atg gcc ctg	1008
Glu Arg Lys Asn Glu 325 Arg Asn Ala Glu Ala 330 Lys Arg Lys Met Ala 335 Leu	
gcc cga gag agg aag aca gtg aag acg ctg ggc atc atc atg ggc acc	1056
Ala Arg Glu Arg 340 Lys Thr Val Lys Thr 345 Leu Gly Ile Ile Met 350 Gly Thr	
ttc atc ctc tgc tgg ctg ccc ttc ttc atc gtg gct ctt gtt ctg ccc	1104
Phe Ile Leu 355 Cys Trp Leu Pro Phe 360 Phe Ile Val Ala Leu 365 Val Leu Pro	
ttc tgc gag agc agc tgc cac atg ccc acc ctg ttg ggc gcc ata atc	1152
Phe Cys 370 Glu Ser Ser Cys His 375 Met Pro Thr Leu Leu 380 Gly Ala Ile Ile	
aat tgg ctg ggc tac tcc aac tct ctg ctt aac ccc gtc att tac gca	1200
Asn Trp Leu Gly Tyr Ser 390 Asn Ser Leu Leu Asn 395 Pro Val Ile Tyr Ala 400	
tac ttc aac aag gac ttt caa aac gcg ttt aag aag atc att aag tgt	1248
Tyr Phe Asn Lys Asp 405 Phe Gln Asn Ala Phe 410 Lys Lys Ile Ile Lys 415 Cys	
aac ttc tgc cgc cag tga	1266
Asn Phe Cys Arg 420 Gln	

<210> 16
 <211> 421
 <212> PRT
 <213> Homo sapiens

<400> 16

Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
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 Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
 20 25 30
 Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
 35 40 45
 Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
 50 55 60
 Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
 65 70 75 80
 Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
 85 90 95
 Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
 100 105 110
 Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
 115 120 125
 Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140
 Val Asn Lys Arg Thr Pro Arg Pro Arg Ala Leu Ile Ser Leu Thr Trp
 145 150 155 160
 Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Ile Leu Gly Trp Arg Thr
 165 170 175
 Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp His
 180 185 190
 Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu Leu
 195 200 205
 Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe Arg
 210 215 220
 Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr Arg
 225 230 235 240
 His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly Glu
 245 250 255
 Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly Gly
 260 265 270

Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala Ala
 275 280 285

Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His Leu
 290 295 300

Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser Phe
 305 310 315 320

Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala Leu
 325 330 335

Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly Thr
 340 345 350

Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu Pro
 355 360 365

Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile Ile
 370 375 380

Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr Ala
 385 390 395 400

Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys Cys
 405 410 415

Asn Phe Cys Arg Gln
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<210> 17
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<220>
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ggc tca ggg gac tat gac tcc atg aag gaa ccc tgt ttc cgt gaa gaa	96
Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu	
20 25 30	
aat gct aat ttc aat aaa atc ttc ctg ccc acc atc tac tcc atc atc	144
Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile	
35 40 45	
ttc tta act ggc att gtg ggc aat gga ttg gtc atc ctg gtc atg ggt	192
Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly	
50 55 60	

28																
tac Tyr 65	cag Gln	aag Lys	aaa Lys	ctg Leu	aga Arg 70	agc Ser	atg Met	acg Thr	gac Asp	aag Lys 75	tac Tyr	agg Arg	ctg Leu	cac His	ctg Leu 80	240
tca Ser	gtg Val	gcc Ala	gac Asp	ctc Leu 85	ctc Leu	ttt Phe	gtc Val	atc Ile	acg Thr 90	ctt Leu	ccc Pro	ttc Phe	tgg Trp	gca Ala 95	gtt Val	288
gat Asp	gcc Ala	gtg Val	gca Ala 100	aac Asn	tgg Trp	tac Tyr	ttt Phe	ggg Gly 105	aac Asn	ttc Phe	cta Leu	tgc Cys	aag Lys 110	gca Ala	gtc Val	336
cat His	gtc Val	atc Ile 115	tac Tyr	aca Thr	gtc Val	aac Asn	ctc Leu 120	tac Tyr	agc Ser	agt Ser	gtc Val	ctc Leu 125	atc Ile	ctg Leu	gcc Ala	384
ttc Phe	atc Ile 130	agt Ser	ctg Leu	gac Asp	cgc Arg	tac Tyr 135	ctg Leu	gcc Ala	atc Ile	gtc Val	cac His 140	gcc Ala	acc Thr	aac Asn	agt Ser	432
cag Gln 145	agg Arg	cca Pro	agg Arg	aag Lys	ctg Leu 150	ttg Leu	gct Ala	gaa Glu	aag Lys	gtg Val 155	gtc Val	tat Tyr	gtt Val	ggc Gly	gtc Val 160	480
tgg Trp	atc Ile	cct Pro	gcc Ala	ctc Leu 165	ctg Leu	ctg Leu	act Thr	att Ile	ccc Pro 170	gac Asp	ttc Phe	atc Ile	ttt Phe	gcc Ala 175	aac Asn	528
gtc Val	agt Ser	gag Glu	gca Ala 180	gat Asp	gac Asp	aga Arg	tat Tyr	atc Ile 185	tgt Cys	gac Asp	cgc Arg	ttc Phe	tac Tyr 190	ccc Pro	aat Asn	576
gac Asp	ttg Leu	tgg Trp 195	gtg Val	gtt Val	gtg Val	ttc Phe	cag Gln 200	ttt Phe	cag Gln	cac His	atc Ile	atg Met 205	gtt Val	ggc Gly	ctt Leu	624
atc Ile	ctg Leu 210	cct Pro	ggg Gly	att Ile	gtc Val	atc Ile 215	ctg Leu	tcc Ser	tgc Cys	tat Tyr	tgc Cys 220	att Ile	atc Ile	atc Ile	tcc Ser	672
aag Lys 225	ctg Leu	tca Ser	cac His	tcc Ser	aag Lys 230	ggc Gly	cac His	cag Gln	aag Lys	cgc Arg 235	aag Lys	gcc Ala	ctc Leu	aag Lys	acc Thr 240	720
aca Thr	gtc Val	atc Ile	ctc Leu	atc Ile 245	ctg Leu	gct Ala	ttc Phe	ttc Phe	gcc Ala 250	tgt Cys	tgg Trp	ctg Leu	cct Pro	tac Tyr 255	tac Tyr	768
att Ile	ggg Gly	atc Ile	agc Ser 260	atc Ile	gac Asp	tcc Ser	ttc Phe	atc Ile 265	ctc Leu	ctg Leu	gaa Glu	atc Ile	atc Ile 270	aag Lys	caa Gln	816
ggg Gly	tgt Cys	gag Glu 275	ttt Phe	gag Glu	aac Asn	act Thr	gtg Val 280	cac His	aag Lys	tgg Trp	att Ile	tcc Ser 285	atc Ile	acc Thr	gag Glu	864
gcc Ala	cta Leu 290	gct Ala	ttc Phe	ttc Phe	cac His	tgt Cys 295	tgt Cys	ctg Leu	aac Asn	ccc Pro	atc Ile 300	ctc Leu	tat Tyr	gct Ala	ttc Phe	912
ctt Leu 305	gga Gly	gcc Ala	aaa Lys	ttt Phe	aaa Lys 310	acc Thr	tct Ser	gcc Ala	cag Gln	cac His 315	gca Ala	ctc Leu	acc Thr	tct Ser	gtg Val 320	960
agc Ser	aga Arg	ggg Gly	tcc Ser	agc Ser 325	ctc Leu	aag Lys	atc Ile	ctc Leu	tcc Ser 330	aaa Lys	gga Gly	aag Lys	cga Arg	ggg Gly 335	gga Gly	1008
cat	tca	tct	gtt	tcc	act	gag	tct	gag	tct	tca	agt	ttt	cac	tcc	agc	1056

His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
 340 345 350 29

taa

1059

<210> 18
 <211> 352
 <212> PRT
 <213> Homo sapiens

<400> 18

Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
 1 5 10 15

Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
 20 25 30

Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
 35 40 45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
 50 55 60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
 65 70 75 80

Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
 85 90 95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
 100 105 110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
 115 120 125

Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
 130 135 140

Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
 145 150 155 160

Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
 165 170 175

Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
 180 185 190

Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
 195 200 205

Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
 210 215 220

Lys Leu Ser His Ser Lys Gly His Gln Lys³⁰ Arg Lys Ala Leu Lys Thr
 225 230 235 240
 Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
 245 250 255
 Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
 260 265 270
 Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
 275 280 285
 Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
 290 295 300
 Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
 305 310 315 320
 Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly
 325 330 335
 His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
 340 345 350

<210> 19
 <211> 1059
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(1059)

<400> 19 atg gat tat caa gtg tca agt cca atc tat gac atc aat tat tat aca Met Asp Tyr Gln Val Ser Ser Pro Ile Tyr Asp Ile Asn Tyr Tyr Thr 1 5 10 15	48
tcg gag ccc tgc caa aaa atc aat gtg aag caa atc gca gcc cgc ctc Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu 20 25 30	96
ctg cct ccg ctc tac tca ctg gtg ttc atc ttt ggt ttt gtg ggc aac Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn 35 40 45	144
atg ctg gtc atc ctc atc ctg ata aac tgc aaa agg ctg aag agc atg Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met 50 55 60	192
act gac atc tac ctg ctc aac ctg gcc atc tct gac ctg ttt ttc ctt Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu 65 70 75 80	240
ctt act gtc ccc ttc tgg gct cac tat gct gcc gcc cag tgg gac ttt Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe 85 90 95	288
gga aat aca atg tgt caa ctc ttg aca ggg ctc tat ttt ata ggc ttc Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe 336	336

															31															
100										105					110															
tct	tct	gga	atc	tct	tct	atc	atc	ctc	ctg	aca	atc	gat	agg	tac	ctg	384														
Phe	Ser	Gly	Ile	Phe	Phe	Ile	Ile	Leu	Leu	Thr	Ile	Asp	Arg	Tyr	Leu															
															115	120	125													
gct	gtc	gtc	cat	gct	gtg	ttt	gct	tta	aaa	gcc	agg	acg	gtc	acc	ttt	432														
Ala	Val	Val	His	Ala	Val	Phe	Ala	Leu	Lys	Ala	Arg	Thr	Val	Thr	Phe															
															130	135	140													
ggg	gtg	gtg	aca	agt	gtg	atc	act	tgg	gtg	gtg	gct	gtg	ttt	gcg	tct	480														
Gly	Val	Val	Thr	Ser	Val	Ile	Thr	Trp	Val	Val	Ala	Val	Phe	Ala	Ser															
															145	150	155													
ctc	cca	gga	atc	atc	ttt	acc	aga	tct	caa	aaa	gaa	ggt	ctt	cat	tac	528														
Leu	Pro	Gly	Ile	Ile	Phe	Thr	Arg	Ser	Gln	Lys	Glu	Gly	Leu	His	Tyr															
															165	170														
acc	tgc	agc	tct	cat	ttt	cca	tac	agt	cag	tat	caa	ttc	tgg	aag	aat	576														
Thr	Cys	Ser	Ser	His	Phe	Pro	Tyr	Ser	Gln	Tyr	Gln	Phe	Trp	Lys	Asn															
															180	185	190													
tct	cag	aca	tta	aag	ata	gtc	atc	tgg	ggg	ctg	gtc	ctg	ccg	ctg	ctt	624														
Phe	Gln	Thr	Leu	Lys	Ile	Val	Ile	Leu	Gly	Leu	Val	Leu	Pro	Leu	Leu															
															195	200	205													
gtc	atg	gtc	atc	tgc	tac	tgc	gga	atc	cta	aaa	act	ctg	ctt	cgg	tgt	672														
Val	Met	Val	Ile	Cys	Tyr	Ser	Gly	Ile	Leu	Lys	Thr	Leu	Leu	Arg	Cys															
															210	215	220													
cga	aat	gag	aag	aag	agg	cac	agg	gct	gtg	agg	ctt	atc	ttc	acc	atc	720														
Arg	Asn	Glu	Lys	Lys	Arg	His	Arg	Ala	Val	Arg	Leu	Ile	Phe	Thr	Ile															
															225	230	235													
atg	att	gtt	tat	ttt	ctc	ttc	tgg	gct	ccc	tac	aac	att	gtc	ctt	ctc	768														
Met	Ile	Val	Tyr	Phe	Leu	Phe	Trp	Ala	Pro	Tyr	Asn	Ile	Val	Leu	Leu															
															245	250	255													
ctg	aac	acc	ttc	cag	gaa	ttc	ttt	ggc	ctg	aat	aat	tgc	agt	agc	tct	816														
Leu	Asn	Thr	Phe	Gln	Glu	Phe	Phe	Gly	Leu	Asn	Asn	Cys	Ser	Ser	Ser															
															260	265	270													
aac	agg	tgt	gac	caa	gct	atg	cag	gtg	aca	gag	act	ctt	ggg	atg	acg	864														
Asn	Arg	Leu	Asp	Gln	Ala	Met	Gln	Val	Thr	Glu	Thr	Leu	Gly	Met	Thr															
															275	280	285													
cac	tgc	tgc	atc	aac	ccc	atc	atc	tat	gcc	ttt	gtc	ggg	gag	aag	ttc	912														
His	Cys	Cys	Ile	Asn	Pro	Ile	Ile	Tyr	Ala	Phe	Val	Gly	Glu	Lys	Phe															
															290	295	300													
aga	aac	tac	ctc	tta	gtc	ttc	ttc	caa	aag	cac	att	gcc	aaa	cgc	ttc	960														
Arg	Asn	Tyr	Leu	Leu	Val	Phe	Phe	Gln	Lys	His	Ile	Ala	Lys	Arg	Phe															
															305	310	315													
tgc	aaa	tgc	tgt	tct	att	ttc	cag	caa	gag	gct	ccc	gag	cga	gca	agc	1008														
Cys	Lys	Cys	Cys	Ser	Ile	Phe	Gln	Gln	Glu	Ala	Pro	Glu	Arg	Ala	Ser															
															325	330	335													
tca	gtt	tac	acc	cga	tcc	act	ggg	gag	cag	gaa	ata	tct	gtg	ggc	ttg	1056														
Ser	Val	Tyr	Thr	Arg	Ser	Thr	Gly	Glu	Gln	Glu	Ile	Ser	Val	Gly	Leu															
															340	345	350													
tga															1059															

<210> 20
 <211> 352
 <212> PRT
 <213> Homo sapiens

<400> 20

Met Asp Tyr Gln Val Ser Ser Pro Ile Tyr Asp Ile Asn Tyr Tyr Thr
 1 5 10 15
 Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu
 20 25 30
 Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn
 35 40 45
 Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met
 50 55 60
 Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu
 65 70 75 80
 Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe
 85 90 95
 Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe
 100 105 110
 Phe Ser Gly Ile Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu
 115 120 125
 Ala Val Val His Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe
 130 135 140
 Gly Val Val Thr Ser Val Ile Thr Trp Val Val Ala Val Phe Ala Ser
 145 150 155 160
 Leu Pro Gly Ile Ile Phe Thr Arg Ser Gln Lys Glu Gly Leu His Tyr
 165 170 175
 Thr Cys Ser Ser His Phe Pro Tyr Ser Gln Tyr Gln Phe Trp Lys Asn
 180 185 190
 Phe Gln Thr Leu Lys Ile Val Ile Leu Gly Leu Val Leu Pro Leu Leu
 195 200 205
 Val Met Val Ile Cys Tyr Ser Gly Ile Leu Lys Thr Leu Leu Arg Cys
 210 215 220
 Arg Asn Glu Lys Lys Arg His Arg Ala Val Arg Leu Ile Phe Thr Ile
 225 230 235 240
 Met Ile Val Tyr Phe Leu Phe Trp Ala Pro Tyr Asn Ile Val Leu Leu
 245 250 255
 Leu Asn Thr Phe Gln Glu Phe Phe Gly Leu Asn Asn Cys Ser Ser Ser
 260 265 270

Asn Arg Leu Asp Gln Ala Met Gln Val Thr Glu Thr Leu Gly Met Thr
275 280 285

His Cys Cys Ile Asn Pro Ile Ile Tyr Ala Phe Val Gly Glu Lys Phe
290 295 300

Arg Asn Tyr Leu Leu Val Phe Phe Gln Lys His Ile Ala Lys Arg Phe
305 310 315 320

Cys Lys Cys Cys Ser Ile Phe Gln Gln Glu Ala Pro Glu Arg Ala Ser
325 330 335

Ser Val Tyr Thr Arg Ser Thr Gly Glu Gln Glu Ile Ser Val Gly Leu
340 345 350

<210> 21
<211> 2538
<212> DNA
<213> Artificial Sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2538)

<400> 21	
atg aat aac tca aca aac tcc tct aac aat agc ctg gct ctt aca agt	48
Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser	
1 5 10 15	
cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc	96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser	
20 25 30	
ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att	144
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile	
35 40 45	
aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc	192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser	
50 55 60	
ttg gcc tgt gct gac ctt atc ata ggt gtt ttc tcc atg aac ttg tac	240
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr	
65 70 75 80	
acc ctc tac act gtg att ggt tac tgg cct ttg gga cct gtg gtg tgt	288
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys	
85 90 95	
gac ctt tgg cta gcc ctg gac tat gtg gtc agc aat gcc tca gtt atg	336
Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met	
100 105 110	
aat ctg ctc atc atc agc ttt gac agg tac ttc tgt gtc aca aaa cct	384
Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro	
115 120 125	
ctg acc tac cca gtc aag cgg acc aca aaa atg gca ggt atg atg att	432

Leu	Thr	Tyr	Pro	Val	Lys	Arg	Thr	Thr	Lys	Met	Ala	Gly	Met	Met	Ile	
	130					135					140					
gca	gct	gcc	tgg	gtc	ctc	tct	ttc	atc	ctc	tgg	gct	cca	gcc	att	ctc	480
Ala	Ala	Ala	Trp	Val	Leu	Ser	Phe	Ile	Leu	Trp	Ala	Pro	Ala	Ile	Leu	160
145					150					155						
ttc	tgg	cag	ttc	att	gta	ggg	gtg	aga	act	gtg	gag	gat	ggg	gag	tgc	528
Phe	Trp	Gln	Phe	Ile	Val	Gly	Val	Arg	Thr	Val	Glu	Asp	Gly	Glu	Cys	
				165					170					175		
tac	att	cag	ttt	ttt	tcc	aat	gct	gct	gtc	acc	ttt	ggt	acg	gct	att	576
Tyr	Ile	Gln	Phe	Phe	Ser	Asn	Ala	Ala	Val	Thr	Phe	Gly	Thr	Ala	Ile	
			180					185					190			
gca	gcc	ttc	tat	ttg	cca	gtg	atc	atc	atg	act	gtg	cta	tat	tgg	cac	624
Ala	Ala	Phe	Tyr	Leu	Pro	Val	Ile	Ile	Met	Thr	Val	Leu	Tyr	Trp	His	
		195					200					205				
ata	tcc	cga	gcc	agc	aag	agc	agg	ata	aag	aag	gac	aag	aag	gag	cct	672
Ile	Ser	Arg	Ala	Ser	Lys	Ser	Arg	Ile	Lys	Lys	Asp	Lys	Lys	Glu	Pro	
	210					215					220					
gtt	gcc	aac	caa	gac	ccc	gtt	tct	cca	agt	ctg	gta	caa	gga	agg	ata	720
Val	Ala	Asn	Gln	Asp	Pro	Val	Ser	Pro	Ser	Leu	Val	Gln	Gly	Arg	Ile	240
225					230					235						
gtg	aag	cca	aac	aat	aac	aac	atg	ccc	agc	agt	gac	gat	ggc	ctg	gag	768
Val	Lys	Pro	Asn	Asn	Asn	Asn	Met	Pro	Ser	Ser	Asp	Asp	Gly	Leu	Glu	
				245					250					255		
cac	aac	aaa	atc	cag	aat	ggc	aaa	gcc	ccc	agg	gat	cct	gtg	act	gaa	816
His	Asn	Lys	Ile	Gln	Asn	Gly	Lys	Ala	Pro	Arg	Asp	Pro	Val	Thr	Glu	
			260					265					270			
aac	tgt	gtt	cag	gga	gag	gag	aag	gag	agc	tcc	aat	gac	tcc	acc	tca	864
Asn	Cys	Val	Gln	Gly	Glu	Glu	Lys	Glu	Ser	Ser	Asn	Asp	Ser	Thr	Ser	
		275					280					285				
gtc	agt	gct	gtt	gcc	tct	aat	atg	aga	gat	gat	gaa	ata	acc	cag	gat	912
Val	Ser	Ala	Val	Ala	Ser	Asn	Met	Arg	Asp	Asp	Glu	Ile	Thr	Gln	Asp	
	290					295					300					
gaa	aac	aca	gtt	tcc	act	tcc	ctg	ggc	cat	tcc	aaa	gat	gag	aac	tct	960
Glu	Asn	Thr	Val	Ser	Thr	Ser	Leu	Gly	His	Ser	Lys	Asp	Glu	Asn	Ser	320
305					310					315						
aag	caa	aca	tgc	atc	aga	att	ggc	acc	aag	acc	cca	aaa	agt	gac	tca	1008
Lys	Gln	Thr	Cys	Ile	Arg	Ile	Gly	Thr	Lys	Thr	Pro	Lys	Ser	Asp	Ser	
				325					330					335		
tgt	acc	cca	act	aat	acc	acc	gtg	gag	gta	gtg	ggg	tct	tca	ggt	cag	1056
Cys	Thr	Pro	Thr	Asn	Thr	Thr	Val	Glu	Val	Val	Gly	Ser	Ser	Gly	Gln	
			340					345					350			
aat	gga	gat	gaa	aag	cag	aat	att	gta	gcc	cgc	aag	att	gtg	aag	atg	1104
Asn	Gly	Asp	Glu	Lys	Gln	Asn	Ile	Val	Ala	Arg	Lys	Ile	Val	Lys	Met	
		355					360					365				
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152
Thr	Lys	Gln	Pro	Ala	Lys	Lys	Lys	Pro	Pro	Pro	Ser	Arg	Glu	Lys	Lys	
	370					375					380					
gtc	acc	agg	aca	atc	ttg	gct	att	ctg	ttg	gct	ttc	atc	atc	act	tgg	1200
Val	Thr	Arg	Thr	Ile	Leu	Ala	Ile	Leu	Leu	Ala	Phe	Ile	Ile	Thr	Trp	400
385					390					395						
gcc	cca	tac	aat	gtc	atg	gtg	ctc	att	aac	acc	ttt	tgt	gca	cct	tgc	1248
Ala	Pro	Tyr	Asn	Val	Met	Val	Leu	Ile	Asn	Thr	Phe	Cys	Ala	Pro	Cys	

405				35 410								415					
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296	
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344	
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392	
aca Thr 465	agg Arg	gga Gly	ggg Gly	gga Gly	ggg Gly 470	gga Gly	ggc Gly	atg Met	ctg Leu	tcc Ser 475	cga Arg	aag Lys	ggc Gly	att Ile	atc Ile 480	1440	
cct Pro	gag Glu	gaa Glu	tat Tyr	gtg Val 485	ctg Leu	acc Thr	cgg Arg	ctg Leu	gca Ala 490	gag Glu	gac Asp	cct Pro	gca Ala	gag Glu 495	ccc Pro	1488	
agg Arg	tac Tyr	cgt Arg	act Thr 500	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 505	cgc Arg	ttc Phe	gtg Val	tcc Ser 510	aag Lys 510	aaa Lys	ggc Gly	1536	
aac Asn	tgc Cys	aac Asn 515	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 520	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 525	cgc Arg	ttc Phe	ctg Leu	1584	
cag Gln	gat Asp 530	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 535	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 540	cca Pro	cac His	act Thr	ctg Leu	1632	
ctc Leu 545	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 550	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 555	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 560	1680	
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 565	gcc Ala	ttc Phe	gcc Ala	cac His	ggg Gly 570	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 575	atg Met	1728	
gag Glu	aaa Lys	ggc Gly	atc Ile 580	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 585	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 590	cca Pro	gat Asp	1776	
tac Tyr	gcc Ala	gga Gly 595	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 600	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 605	atc Ile	cac His	tcc Ser	1824	
ttt Phe	tca Ser 610	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 615	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 620	gtg Val	acc Thr	att Ile	ggg Gly	1872	
ttc Phe 625	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 630	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 635	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 640	1920	
ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 645	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 650	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 655	ctg Leu	1968	
ggc Gly	tgc Cys	atc Ile 660	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 665	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 670	gaa Glu	acc Thr	2016	
ctc Leu	atc Ile	ttc Phe 675	agc Ser	aag Lys	cat His	gct Ala	gtg Val 680	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 685	ggc Gly	cgc Arg	ctg Leu	2064	

tgc	ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	2112
Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	
	690					695					700					
gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	2160
Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	
	705				710					715					720	
gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	2208
Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	
				725					730					735		
ggg	ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	2256
Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	
			740					745					750			
atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	2304
Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	
		755					760					765				
cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	2352
His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	
	770					775					780					
acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	2400
Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	
	785				790					795					800	
att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	2448
Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	
			805						810					815		
cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	2496
Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	
			820					825					830			
aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt			2538
Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser			
		835					840					845				

<210> 22
 <211> 846
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 22

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
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Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr

65										37						80
					70					75						
Thr	Leu	Tyr	Thr	Val ₈₅	Ile	Gly	Tyr	Trp	Pro ₉₀	Leu	Gly	Pro	Val	Val ₉₅	Cys	
Asp	Leu	Trp	Leu ₁₀₀	Ala	Leu	Asp	Tyr	Val ₁₀₅	Val	Ser	Asn	Ala	Ser ₁₁₀	Val	Met	
Asn	Leu	Leu ₁₁₅	Ile	Ile	Ser	Phe	Asp ₁₂₀	Arg	Tyr	Phe	Cys	Val ₁₂₅	Thr	Lys	Pro	
Leu	Thr ₁₃₀	Tyr	Pro	Val	Lys	Arg ₁₃₅	Thr	Thr	Lys	Met	Ala ₁₄₀	Gly	Met	Met	Ile	
Ala ₁₄₅	Ala	Ala	Trp	Val	Leu ₁₅₀	Ser	Phe	Ile	Leu	Trp ₁₅₅	Ala	Pro	Ala	Ile	Leu ₁₆₀	
Phe	Trp	Gln	Phe	Ile ₁₆₅	Val	Gly	Val	Arg	Thr ₁₇₀	Val	Glu	Asp	Gly	Glu ₁₇₅	Cys	
Tyr	Ile	Gln	Phe ₁₈₀	Phe	Ser	Asn	Ala	Ala ₁₈₅	Val	Thr	Phe	Gly	Thr ₁₉₀	Ala	Ile	
Ala	Ala	Phe ₁₉₅	Tyr	Leu	Pro	Val	Ile ₂₀₀	Ile	Met	Thr	Val	Leu ₂₀₅	Tyr	Trp	His	
Ile	Ser ₂₁₀	Arg	Ala	Ser	Lys	Ser ₂₁₅	Arg	Ile	Lys	Lys	Asp ₂₂₀	Lys	Lys	Glu	Pro	
Val ₂₂₅	Ala	Asn	Gln	Asp	Pro ₂₃₀	Val	Ser	Pro	Ser	Leu ₂₃₅	Val	Gln	Gly	Arg	Ile ₂₄₀	
Val	Lys	Pro	Asn	Asn ₂₄₅	Asn	Asn	Met	Pro	Ser ₂₅₀	Ser	Asp	Asp	Gly	Leu ₂₅₅	Glu	
His	Asn	Lys	Ile ₂₆₀	Gln	Asn	Gly	Lys	Ala ₂₆₅	Pro	Arg	Asp	Pro	Val ₂₇₀	Thr	Glu	
Asn	Cys	Val ₂₇₅	Gln	Gly	Glu	Glu	Lys ₂₈₀	Glu	Ser	Ser	Asn	Asp ₂₈₅	Ser	Thr	Ser	
Val	Ser ₂₉₀	Ala	Val	Ala	Ser	Asn ₂₉₅	Met	Arg	Asp	Asp	Glu ₃₀₀	Ile	Thr	Gln	Asp	
Glu ₃₀₅	Asn	Thr	Val	Ser	Thr ₃₁₀	Ser	Leu	Gly	His	Ser ₃₁₅	Lys	Asp	Glu	Asn	Ser ₃₂₀	
Lys	Gln	Thr	Cys	Ile ₃₂₅	Arg	Ile	Gly	Thr	Lys ₃₃₀	Thr	Pro	Lys	Ser	Asp ₃₃₅	Ser	
Cys	Thr	Pro	Thr ₃₄₀	Asn	Thr	Thr	Val	Glu ₃₄₅	Val	Val	Gly	Ser	Ser ₃₅₀	Gly	Gln	

Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460
 Thr Arg Gly Gly Gly Gly Gly Gly Met Leu Ser Arg Lys Gly Ile Ile
 465 470 475 480
 Pro Glu Glu Tyr Val Leu Thr Arg Leu Ala Glu Asp Pro Ala Glu Pro
 485 490 495
 Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 500 505 510
 Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 515 520 525
 Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 530 535 540
 Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 545 550 555 560
 Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met
 565 570 575
 Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp
 580 585 590
 Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser
 595 600 605
 Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly
 610 615 620

Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile
625 630 635 640

Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu
645 650 655

Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr
660 665 670

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

Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser
690 695 700

Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly
705 710 715 720

Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val
725 730 735

Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val
740 745 750

Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His
755 760 765

His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu
770 775 780

Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu
785 790 795 800

Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly
805 810 815

Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro
820 825 830

Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
835 840 845

<210> 23
<211> 2646
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2646)

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cct Pro	tat Tyr	aag Lys	aca Thr 20	ttt Phe	gaa Glu	gtg Val	gtg Val	ttt Phe 25	att Ile	gtc Val	ctg Leu	gtg Val	gct Ala 30	gga Gly	tcc Ser	96
ctc Leu	agt Ser	ttg Leu 35	gtg Val	acc Thr	att Ile	atc Ile	ggg Gly 40	aac Asn	atc Ile	cta Leu	gtc Val	atg Met 45	gtt Val	tcc Ser	att Ile	144
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser	192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816

aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	gga Gly	ggg Gly	gga Gly	ggg Gly 470	gga Gly	ggc Gly	atg Met	ctg Leu	tcc Ser 475	cga Arg	aag Lys	ggc Gly	att Ile	atc Ile 480	1440
cct Pro	gag Glu	gaa Glu	tat Tyr	gtg Val 485	ctg Leu	acc Thr	cgg Arg	ctg Leu	gca Ala 490	gag Glu	gac Asp	cct Pro	gca Ala	gag Glu 495	ccc Pro	1488
agg Arg	tac Tyr	cgt Arg	act Thr 500	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 505	cgc Arg	ttc Phe	gtg Val	tcc Ser 510	aag Lys	aaa Lys	ggc Gly	1536
aac Asn	tgc Cys	aac Asn 515	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 520	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 525	cgc Arg	ttc Phe	ctg Leu	1584
cag Gln	gat Asp 530	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 535	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 540	cca Pro	cac His	act Thr	ctg Leu	1632

42																
ctc Leu 545	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 550	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 555	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 560	1680
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 565	gcc Ala	ttc Phe	gcc Ala	cac His	ggc Gly 570	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 575	atg Met	1728
gag Glu	aaa Lys	ggc Gly	atc Ile 580	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 585	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 590	cca Pro	gat Asp	1776
tac Tyr	gcc Ala	gga Gly 595	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 600	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 605	atc Ile	cac His	tcc Ser	1824
ttt Phe	tca Ser 610	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 615	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 620	gtg Val	acc Thr	att Ile	ggc Gly	1872
ttc Phe 625	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 630	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 635	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 640	1920
ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 645	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 650	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 655	ctg Leu	1968
ggc Gly	tgc Cys	atc Ile	ttc Phe 660	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 665	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 670	gaa Glu	acc Thr	2016
ctc Leu	atc Ile	ttc Phe 675	agc Ser	aag Lys	cat His	gct Ala	gtg Val 680	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 685	ggc Gly	cgc Arg	ctg Leu	2064
tgc Cys	ttc Phe 690	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 695	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 700	atg Met	atc Ile	att Ile	agc Ser	2112
gcc Ala 705	acc Thr	atc Ile	cac His	atg Met	cag Gln 710	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 715	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 720	2160
gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 725	cac His	cag Gln	gta Val	gac Asp	atc Ile 730	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 735	gtg Val	2208
ggc Gly	ggc Gly	aac Asn	ggc Gly 740	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 745	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 750	cac His	gtc Val	2256
atc Ile	gac Asp	tcc Ser 755	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr 760	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser 765	gac Asp	ctg Leu	cac His	2304
cac His 770	cac His	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile 775	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu 780	ggc Gly	gtg Val	gta Val	gaa Glu	2352
acc Thr 785	acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr 790	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 795	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu 800	2400
att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln 805	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile 810	gtg Val	gcc Ala	gag Glu	gag Glu	gac Asp 815	ggc Gly	2448
cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggc	aac	acc	att	aaa	gtg	ccc	2496

Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro		
			820					825		43			830				
aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg		2544
Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu		
			835				840					845					
gat	gcc	ctg	acc	ctc	gcc	tgc	tgc	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt		2592
Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser		
						855					860						
gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc		2640
Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser		
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ttg	tcc																2646
Leu	Ser																

<210> 24
 <211> 882
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> Synthetic Construct
 <400> 24

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

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175
 Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190
 Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205
 Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220
 Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240
 Val Lys Pro Asn Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255
 His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270
 Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285
 Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300
 Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430

Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445

Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460

Thr Arg Gly Gly Gly Gly Gly Gly Met Leu Ser Arg Lys Gly Ile Ile
 465 470 475 480

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

Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 500 505 510

Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 515 520 525

Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 530 535 540

Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 545 550 555 560

Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met
 565 570 575

Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp
 580 585 590

Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser
 595 600 605

Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly
 610 615 620

Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile
 625 630 635 640

Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu
 645 650 655

Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr
 660 665 670

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

Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser
 690 695 700

Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly

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<211>	2586
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<220>	
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<222> (1)..(2586)

<400> 25
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1 5 10 15

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc 96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

ctc	agt	ttg	gtg	acc	att	atc	ggg	aac	atc	cta	gtc	atg	ggt	tcc	att	144
Leu	Ser	Leu	Val	Thr	Ile	Ile	Gly	Asn	Ile	Leu	Val	Met	Val	Ser	Ile	
		35					40					45				
aaa	gtc	aac	cgc	cac	ctc	cag	acc	gtc	aac	aat	tac	ttt	tta	ttc	agc	192
Lys	Val	Asn	Arg	His	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	Leu	Phe	Ser	
	50					55					60					
ttg	gcc	tgt	gct	gac	ctt	atc	ata	ggg	ggt	ttc	tcc	atg	aac	ttg	tac	240
Leu	Ala	Cys	Ala	Asp	Leu	Ile	Ile	Gly	Val	Phe	Ser	Met	Asn	Leu	Tyr	
65					70					75					80	
acc	ctc	tac	act	gtg	att	ggg	tac	tgg	cct	ttg	gga	cct	gtg	gtg	tgt	288
Thr	Leu	Tyr	Thr	Val	Ile	Gly	Tyr	Trp	Pro	Leu	Gly	Pro	Val	Val	Cys	
				85					90					95		
gac	ctt	tgg	cta	gcc	ctg	gac	tat	gtg	gtc	agc	aat	gcc	tca	ggt	atg	336
Asp	Leu	Trp	Leu	Ala	Leu	Asp	Tyr	Val	Val	Ser	Asn	Ala	Ser	Val	Met	
			100					105					110			
aat	ctg	ctc	atc	atc	agc	ttt	gac	agg	tac	ttc	tgt	gtc	aca	aaa	cct	384
Asn	Leu	Leu	Ile	Ile	Ser	Phe	Asp	Arg	Tyr	Phe	Cys	Val	Thr	Lys	Pro	
		115					120					125				
ctg	acc	tac	cca	gtc	aag	cgg	acc	aca	aaa	atg	gca	ggg	atg	atg	att	432
Leu	Thr	Tyr	Pro	Val	Lys	Arg	Thr	Thr	Lys	Met	Ala	Gly	Met	Met	Ile	
	130					135					140					
gca	gct	gcc	tgg	gtc	ctc	tct	ttc	atc	ctc	tgg	gct	cca	gcc	att	ctc	480
Ala	Ala	Ala	Trp	Val	Leu	Ser	Phe	Ile	Leu	Trp	Ala	Pro	Ala	Ile	Leu	
145					150					155					160	
ttc	tgg	cag	ttc	att	gta	ggg	gtg	aga	act	gtg	gag	gat	ggg	gag	tgc	528
Phe	Trp	Gln	Phe	Ile	Val	Gly	Val	Arg	Thr	Val	Glu	Asp	Gly	Glu	Cys	
				165					170					175		
tac	att	cag	ttt	ttt	tcc	aat	gct	gct	gtc	acc	ttt	ggg	acg	gct	att	576
Tyr	Ile	Gln	Phe	Phe	Ser	Asn	Ala	Ala	Val	Thr	Phe	Gly	Thr	Ala	Ile	
			180					185					190			
gca	gcc	ttc	tat	ttg	cca	gtg	atc	atc	atg	act	gtg	cta	tat	tgg	cac	624
Ala	Ala	Phe	Tyr	Leu	Pro	Val	Ile	Ile	Met	Thr	Val	Leu	Tyr	Trp	His	
		195					200					205				
ata	tcc	cga	gcc	agc	aag	agc	agg	ata	aag	aag	gac	aag	aag	gag	cct	672
Ile	Ser	Arg	Ala	Ser	Lys	Ser	Arg	Ile	Lys	Lys	Asp	Lys	Lys	Glu	Pro	
	210					215					220					
gtt	gcc	aac	caa	gac	ccc	gtt	tct	cca	agt	ctg	gta	caa	gga	agg	ata	720
Val	Ala	Asn	Gln	Asp	Pro	Val	Ser	Pro	Ser	Leu	Val	Gln	Gly	Arg	Ile	
225					230					235					240	
gtg	aag	cca	aac	aat	aac	aac	atg	ccc	agc	agt	gac	gat	ggc	ctg	gag	768
Val	Lys	Pro	Asn	Asn	Asn	Asn	Met	Pro	Ser	Ser	Asp	Asp	Gly	Leu	Glu	
				245				250					255			
cac	aac	aaa	atc	cag	aat	ggc	aaa	gcc	ccc	agg	gat	cct	gtg	act	gaa	816
His	Asn	Lys	Ile	Gln	Asn	Gly	Lys	Ala	Pro	Arg	Asp	Pro	Val	Thr	Glu	
			260					265					270			
aac	tgt	gtt	cag	gga	gag	gag	aag	gag	agc	tcc	aat	gac	tcc	acc	tca	864
Asn	Cys	Val	Gln	Gly	Glu	Glu	Lys	Glu	Ser	Ser	Asn	Asp	Ser	Thr	Ser	
		275					280					285				
gtc	agt	gct	gtt	gcc	tct	aat	atg	aga	gat	gat	gaa	ata	acc	cag	gat	912
Val	Ser	Ala	Val	Ala	Ser	Asn	Met	Arg	Asp	Asp	Glu	Ile	Thr	Gln	Asp	
	290					295					300					
gaa	aac	aca	gtt	tcc	act	tcc	ctg	ggc	cat	tcc	aaa	gat	gag	aac	tct	960

Glu 305	Asn	Thr	Val	Ser	Thr 310	Ser	Leu	Gly	His 48	Ser 315	Lys	Asp	Glu	Asn	Ser 320	
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	tgt Leu 390	gct Ala	att Ile	ctg Leu	tgt Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	gga Gly	ggg Gly	gga Gly	ggg Gly 470	gga Gly	ggc Gly	atg Met	ctg Leu	tcc Ser 475	cga Arg	aag Lys	ggc Gly	att Ile	atc Ile 480	1440
cct Pro	gag Glu	gaa Glu	tat Tyr	gtg Val 485	ctg Leu	acc Thr	cgg Arg	ctg Leu	gca Ala 490	gag Glu	gac Asp	cct Pro	gca Ala	gag Glu 495	ccc Pro	1488
agg Arg	tac Tyr	cgt Arg	act Thr 500	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 505	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 510	aaa Lys	ggc Gly	1536
aac Asn	tgc Cys	aac Asn 515	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 520	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 525	cgc Arg	ttc Phe	ctg Leu	1584
cag Gln	gat Asp 530	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 535	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 540	cca Pro	cac His	act Thr	ctg Leu	1632
ctc Leu 545	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 550	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 555	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 560	1680
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 565	gcc Ala	ttc Phe	gcc Ala	cac His	ggg Gly 570	gac Asp	ctg Leu	gcc Ala	ccc Pro	gga Gly 575	gag Glu	1728
ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser	gcc Ala	1776

580					585					590						
ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggg	ttc	ggc	ggg	cgc	1824
Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	
		595					600					605				
atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	1872
Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	
	610					615					620					
aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	1920
Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	
625					630					635					640	
atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	1968
Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	
				645					650					655		
aag	cat	gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	2016
Lys	His	Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	
			660					665					670			
cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	2064
Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	
		675					680					685				
atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	ggt	gtg	cct	2112
Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	
	690					695					700					
ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc	2160
Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	
705					710					715					720	
atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	2208
Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	
				725					730					735		
agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	2256
Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	
			740					745					750			
ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	2304
Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	
		755					760					765				
acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	2352
Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	
	770					775					780					
cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	2400
Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	
785					790					795					800	
gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	2448
Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	
				805					810					815		
aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	2496
Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	
			820				825						830			
ctc	gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	2544
Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	
		835					840					845				
aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc			2586
Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser			
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 <211> 862
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 26

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
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Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
 20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
 35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
 50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
 65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
 85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
 100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile

225										51							240
					230					235							
Val	Lys	Pro	Asn	Asn 245	Asn	Asn	Met	Pro	Ser 250	Ser	Asp	Asp	Gly	Leu 255	Glu		
His	Asn	Lys	Ile 260	Gln	Asn	Gly	Lys	Ala 265	Pro	Arg	Asp	Pro	Val 270	Thr	Glu		
Asn	Cys	Val 275	Gln	Gly	Glu	Glu	Lys 280	Glu	Ser	Ser	Asn	Asp 285	Ser	Thr	Ser		
Val	Ser 290	Ala	Val	Ala	Ser	Asn 295	Met	Arg	Asp	Asp	Glu 300	Ile	Thr	Gln	Asp		
Glu 305	Asn	Thr	Val	Ser	Thr 310	Ser	Leu	Gly	His	Ser 315	Lys	Asp	Glu	Asn	Ser 320		
Lys	Gln	Thr	Cys	Ile 325	Arg	Ile	Gly	Thr	Lys 330	Thr	Pro	Lys	Ser	Asp 335	Ser		
Cys	Thr	Pro	Thr 340	Asn	Thr	Thr	Val	Glu 345	Val	Val	Gly	Ser	Ser 350	Gly	Gln		
Asn	Gly	Asp 355	Glu	Lys	Gln	Asn	Ile 360	Val	Ala	Arg	Lys	Ile 365	Val	Lys	Met		
Thr	Lys 370	Gln	Pro	Ala	Lys	Lys 375	Lys	Pro	Pro	Pro	Ser 380	Arg	Glu	Lys	Lys		
Val 385	Thr	Arg	Thr	Ile	Leu 390	Ala	Ile	Leu	Leu	Ala 395	Phe	Ile	Ile	Thr	Trp 400		
Ala	Pro	Tyr	Asn	Val 405	Met	Val	Leu	Ile	Asn 410	Thr	Phe	Cys	Ala	Pro 415	Cys		
Ile	Pro	Asn	Thr 420	Val	Trp	Thr	Ile	Gly 425	Tyr	Trp	Leu	Cys	Tyr 430	Ile	Asn		
Ser	Thr	Ile 435	Asn	Pro	Ala	Cys	Tyr 440	Ala	Leu	Cys	Asn	Ala 445	Thr	Phe	Lys		
Lys	Thr 450	Phe	Lys	His	Leu	Leu 455	Met	Cys	His	Tyr	Lys 460	Asn	Ile	Gly	Ala		
Thr 465	Arg	Gly	Gly	Gly	Gly 470	Gly	Gly	Met	Leu	Ser 475	Arg	Lys	Gly	Ile	Ile 480		
Pro	Glu	Glu	Tyr	Val 485	Leu	Thr	Arg	Leu	Ala 490	Glu	Asp	Pro	Ala	Glu 495	Pro		
Arg	Tyr	Arg	Thr 500	Arg	Glu	Arg	Arg	Ala 505	Arg	Phe	Val	Ser	Lys 510	Lys	Gly		

Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 515 520 525
 Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 530 535 540
 Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 545 550 555 560
 Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu
 565 570 575
 Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala
 580 585 590
 Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg
 595 600 605
 Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln
 610 615 620
 Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe
 625 630 635 640
 Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser
 645 650 655
 Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu
 660 665 670
 Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His
 675 680 685
 Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
 690 695 700
 Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
 705 710 715 720
 Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
 725 730 735
 Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
 740 745 750
 Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
 755 760 765
 Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
 770 775 780

Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
785 790 795 800

Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
805 810 815

Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr
820 825 830

Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala
835 840 845

Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
850 855 860

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<212> DNA
<213> Artificial sequence

<220>
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<220>
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<222> (1)..(2478)

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1 5 10 15	
cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc	96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser	
20 25 30	
ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att	144
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile	
35 40 45	
aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc	192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser	
50 55 60	
ttg gcc tgt gct gac ctt atc ata ggt gtt ttc tcc atg aac ttg tac	240
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr	
65 70 75 80	
acc ctc tac act gtg att ggt tac tgg cct ttg gga cct gtg gtg tgt	288
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys	
85 90 95	
gac ctt tgg cta gcc ctg gac tat gtg gtc agc aat gcc tca gtt atg	336
Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met	
100 105 110	
aat ctg ctc atc atc agc ttt gac agg tac ttc tgt gtc aca aaa cct	384
Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro	
115 120 125	
ctg acc tac cca gtc aag cgg acc aca aaa atg gca ggt atg atg att	432
Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile	

130				135				54				140				
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
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act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248

atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggc Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	gga Gly	ggc Gly	gga Gly	ggc Gly 470	ggc Gly	atg Met	ctg Leu	tcc Ser 475	cga Arg	aag Lys	ggc Gly	att Ile	atc Ile 480		1440
cct Pro	gag Glu	gaa Glu	tat Tyr	gtg Val 485	ctg Leu	acc Thr	cgg Arg	ctg Leu	gca Ala 490	gag Glu	gac Asp	cct Pro	gca Ala	gag Glu 495	ccc Pro	1488
agg Arg	tac Tyr	cgt Arg	act Thr 500	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 505	cgc Arg	ttc Phe	gtg Val	tcc Ser 510	aag Lys	aaa Lys	ggc Gly	1536
aac Asn	tgc Cys	aac Asn 515	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 520	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 525	cgc Arg	ttc Phe	ctg Leu	1584
cag Gln	gat Asp 530	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 535	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 540	cca Pro	cac His	act Thr	ctg Leu	1632
ctc Leu 545	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 550	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 555	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 560	1680
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ggc Gly	acc Thr	aat Asn	gtg Val 580	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 585	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 590	tct Ser	gcc Ala	1776
ttc Phe	ctt Leu	ttc Phe 595	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 600	gtg Val	acc Thr	att Ile	ggc Gly	ttc Phe 605	ggc Gly	ggg Gly	cgc Arg	1824
atg Met	gtg Val 610	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 615	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 620	ctc Leu	att Ile	gtg Val	cag Gln	1872
aat Asn 625	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 630	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 635	ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 640	1920
atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 645	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 650	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 655	agc Ser	1968
aag Lys	cat His	gct Ala	gtg Val 660	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 665	ggc Gly	cgc Arg	ctg Leu	tgc Cys	ttc Phe 670	atg Met	ctg Leu	2016
cgc Arg	gta Val	ggg Gly 675	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 680	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 685	acc Thr	atc Ile	cac His	2064

atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	ggt	gtg	cct	2112
Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	
	690					695					700					
ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc	2160
Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	
	705				710					715					720	
atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	2208
Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	
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agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	2256
Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	
			740					745					750			
ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	2304
Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	
		755					760					765				
acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	2352
Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	
	770					775					780					
cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	2400
Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	
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gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	2448
Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	
			805						810					815		
aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt							2478
Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser							
			820					825								

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 <211> 826
 <212> PRT
 <213> Artificial sequence

<220>
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<400> 28

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Pro	Tyr	Lys	Thr	Phe	Glu	Val	Val	Phe	Ile	Val	Leu	Val	Ala	Gly	Ser
			20					25					30		
Leu	Ser	Leu	Val	Thr	Ile	Ile	Gly	Asn	Ile	Leu	Val	Met	Val	Ser	Ile
		35					40					45			
Lys	Val	Asn	Arg	His	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	Leu	Phe	Ser
	50					55					60				
Leu	Ala	Cys	Ala	Asp	Leu	Ile	Ile	Gly	Val	Phe	Ser	Met	Asn	Leu	Tyr
65					70				75					80	
Thr	Leu	Tyr	Thr	Val	Ile	Gly	Tyr	Trp	Pro	Leu	Gly	Pro	Val	Val	Cys
				85					90					95	

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
 100 105 110
 Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 125
 Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140
 Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160
 Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175
 Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190
 Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205
 Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220
 Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240
 Val Lys Pro Asn Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255
 His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270
 Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285
 Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300
 Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365

Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460
 Thr Arg Gly Gly Gly Gly Gly Gly Met Leu Ser Arg Lys Gly Ile Ile
 465 470 475 480
 Pro Glu Glu Tyr Val Leu Thr Arg Leu Ala Glu Asp Pro Ala Glu Pro
 485 490 495
 Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 500 505 510
 Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 515 520 525
 Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 530 535 540
 Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 545 550 555 560
 Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu
 565 570 575
 Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala
 580 585 590
 Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg
 595 600 605
 Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln
 610 615 620
 Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe
 625 630 635 640

Met Lys Thr Ala Gln Ala His Arg Arg Ala⁵⁹ Glu Thr Leu Ile Phe Ser
 645 650 655
 Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu
 660 665 670
 Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His
 675 680 685
 Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
 690 695 700
 Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
 705 710 715 720
 Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
 725 730 735
 Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
 740 745 750
 Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
 755 760 765
 Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
 770 775 780
 Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
 785 790 795 800
 Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
 805 810 815
 Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
 820 825

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<220>
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<220>
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 1 5 10 15

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc 96
 Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
 20 25 30

ctc Leu	agt Ser	ttg Leu 35	gtg Val	acc Thr	att Ile	atc Ile	ggg Gly 40	aac Asn	atc Ile	cta Leu	gtc Val	atg Met 45	gtt Val	tcc Ser	att Ile	144
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser	192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
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tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
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cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
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gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912

61																960
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	
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gat Asp 545	ctc Leu	tat Tyr	gct Ala	tac Tyr	atg Met 550	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 555	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 560	1680
cca Pro	tac Tyr	gat Asp	gta Val	cca Pro 565	gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 570	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 575	tgc Cys	1728
gtc Val	aca Thr	agc Arg	atc Ile	cac His	tcc Ser	ttt Phe	tca Val	tct Leu	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser	atc Ile	gag Glu	1776

Val	Thr	Ser	Ile 580	His	Ser	Phe	Ser	Ser 585	Ala	⁶² Phe	Leu	Phe	Ser 590	Ile	Glu		
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ccc Pro	ctg Leu 610	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 615	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 620	gtc Val	ggg Gly	ctg Leu	atg Met	1872	
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cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 645	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 650	aag Lys	cat His	gct Ala	gtg Val	atc Ile 655	acc Thr	1968	
ctg Leu	cgc Arg	cat His	ggc Gly 660	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 665	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 670	ctc Leu	cga Arg	2016	
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acc Thr	acc Thr 690	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 695	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 700	cag Gln	gta Val	gac Asp	atc Ile	2112	
ccc Pro 705	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 710	ggg Gly	ggg Gly	aac Asn	ggc Gly	atc Ile 715	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 720	2160	
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tcc Ser	tac Tyr 770	cta Leu	gct Ala	gac Asp	gag Glu	att Ile 775	cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg 780	ttt Phe	gtc Val	ccc Pro	att Ile	2352	
gtg Val 785	gcc Ala	gag Glu	gag Glu	gac Asp	ggc Gly 790	cgc Arg	tat Tyr	tct Ser	gtg Val	gac Asp 795	tac Tyr	tcc Ser	aaa Lys	ttt Phe	ggg Gly 800	2400	
aac Asn	acc Thr	att Ile	aaa Lys	gtg Val 805	ccc Pro	aca Thr	cca Pro	ctc Leu	tgc Cys 810	aca Thr	gcc Ala	cgc Arg	cag Gln	ctt Leu 815	gat Asp	2448	
gag Glu	gac Asp	cgc Arg	agt Ser 820													2460	

<210> 30
 <211> 820
 <212> PRT
 <213> Artificial sequence

<220>

<223> Synthetic Construct

<400> 30

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
225 230 235 240

Val Lys Pro Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
245 250 255

His Asn Lys Ile Gln Asn Gly Lys Ala⁶⁴ Pro Arg Asp Pro Val Thr Glu
 260 265 270

Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285

Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300

Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320

Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335

Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350

Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365

Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380

Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400

Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415

Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430

Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445

Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460

Thr Arg Pro Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg
 465 470 475 480

Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg
 485 490 495

Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu
 500 505 510

Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser
 515 520 525

Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly

530 535 65 540
 Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr
 545 550 555 560
 Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys
 565 570 575
 Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu
 580 585 590
 Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys
 595 600 605
 Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met
 610 615 620
 Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala
 625 630 635 640
 His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr
 645 650 655
 Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg
 660 665 670
 Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys
 675 680 685
 Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile
 690 695 700
 Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro
 705 710 715 720
 Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu
 725 730 735
 Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile
 740 745 750
 Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr
 755 760 765
 Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile
 770 775 780
 Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly
 785 790 795 800
 Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp
 805 810 815

Glu Asp Arg Ser
820

<210> 31
<211> 2568
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2568)

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

Ala	Ala	Phe 195	Tyr	Leu	Pro	Val	Ile 200	Ile	Met	67 Thr	Val	Leu 205	Tyr	Trp	His	
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly 255	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr	agg Arg	cct Pro	gca Ala	gag Glu	ccc Pro	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg	1440

465					470					68 475					480	
ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 485	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 490	gcc Ala	cac His	aag Lys	aac Asn	att Ile 495	cga Arg	1488
gag Glu	cag Gln	ggc Gly	cgc Arg 500	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 505	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 510	gac Asp	ctc Leu	1536
aaa Lys	tgg Trp	cca Pro 515	cac His	act Thr	ctg Leu	ctc Leu	att Ile 520	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 525	ctg Leu	tgc Cys	agc Ser	1584
tgg Trp	ctg Leu 530	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 535	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 540	ttc Phe	gcc Ala	cac His	ggc Gly	1632
gat Asp 545	ctc Leu	tat Tyr	gct Ala	tac Tyr	atg Met 550	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 555	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 560	1680
cca Pro	tac Tyr	gat Asp	gta Val	cca Pro 565	gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 570	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 575	tgc Cys	1728
gtc Val	aca Thr	agc Ser	atc Ile 580	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 585	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 590	atc Ile	gag Glu	1776
gtc Val	cag Gln	gtg Val 595	acc Thr	att Ile	ggc Gly	ttc Phe	ggc Gly 600	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 605	gag Glu	gaa Glu	tgt Cys	1824
ccc Pro 610	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 615	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 620	gtc Val	ggg Gly	ctg Leu	atg Met	1872
atc Ile 625	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 630	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 635	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 640	1920
cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 645	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 650	aag Lys	cat His	gct Ala	gtg Val	atc Ile 655	acc Thr	1968
ctg Leu	cgc Arg	cat His	ggc Gly 660	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 665	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 670	ctc Leu	cga Arg	2016
aag Lys	agc Ser	atg Met 675	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 680	atc Ile	cac His	atg Met	cag Gln	gtg Val 685	gtg Val	cgc Arg	aag Lys	2064
acc Thr 690	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 695	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 700	cag Gln	gta Val	gac Asp	atc Ile	2112
ccc Pro 705	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 710	ggc Gly	ggc Gly	aac Asn	ggc Gly 715	atc Ile 715	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 720	2160
ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 725	gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn 730	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 735	ctg Leu	2208
gct Ala	cct Pro	agt Ser	gac Asp 740	ctg Leu	cac His	cac His	cac His	cag Gln 745	gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 750	gtc Val	atc Ile	2256

ttg gaa ggc gtg gta gaa acc acg ggc atc acc acc cag gcc cgc acc	2304
Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr	
755	
tcc tac cta gct gac gag att cta tgg ggg cag cgc ttt gtc ccc att	2352
Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile	
770	
775	
780	
gtg gcc gag gag gac ggc cgc tat tct gtg gac tac tcc aaa ttt ggt	2400
Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly	
785	
790	
795	
800	
aac acc att aaa gtg ccc aca cca ctc tgc aca gcc cgc cag ctt gat	2448
Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp	
805	
810	
815	
gag gac cgc agt ctg ctg gat gcc ctg acc ctc gcc tcg tcg cgg ggg	2496
Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly	
820	
825	
830	
ccc ctg cgc aag cgc agt gtg gct gtg gcg aag gcc aag ccc aag ttt	2544
Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe	
835	
840	
845	
agc atc tct cca gat tcc ttg tcc	2568
Ser Ile Ser Pro Asp Ser Leu Ser	
850	
855	

<210> 32
 <211> 856
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> Synthetic Construct
 <400> 32

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser	
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Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser	
20 25 30	
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile	
35 40 45	
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser	
50 55 60	
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr	
65 70 75 80	
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys	
85 90 95	
Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met	
100 105 110	
Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro	

	115					120				70		125				
Leu	Thr 130	Tyr	Pro	Val	Lys	Arg 135	Thr	Thr	Lys	Met	Ala 140	Gly	Met	Met	Ile	
Ala 145	Ala	Ala	Trp	Val	Leu 150	Ser	Phe	Ile	Leu	Trp 155	Ala	Pro	Ala	Ile	Leu 160	
Phe	Trp	Gln	Phe	Ile 165	Val	Gly	Val	Arg	Thr 170	Val	Glu	Asp	Gly	Glu 175	Cys	
Tyr	Ile	Gln	Phe 180	Phe	Ser	Asn	Ala	Ala 185	Val	Thr	Phe	Gly	Thr 190	Ala	Ile	
Ala	Ala	Phe 195	Tyr	Leu	Pro	Val	Ile 200	Ile	Met	Thr	Val	Leu 205	Tyr	Trp	His	
Ile	Ser 210	Arg	Ala	Ser	Lys	Ser 215	Arg	Ile	Lys	Lys	Asp 220	Lys	Lys	Glu	Pro	
Val 225	Ala	Asn	Gln	Asp	Pro 230	Val	Ser	Pro	Ser	Leu 235	Val	Gln	Gly	Arg	Ile 240	
Val	Lys	Pro	Asn	Asn 245	Asn	Asn	Met	Pro	Ser 250	Ser	Asp	Asp	Gly	Leu 255	Glu	
His	Asn	Lys	Ile 260	Gln	Asn	Gly	Lys	Ala 265	Pro	Arg	Asp	Pro	Val 270	Thr	Glu	
Asn	Cys	Val 275	Gln	Gly	Glu	Glu	Lys 280	Glu	Ser	Ser	Asn	Asp 285	Ser	Thr	Ser	
Val	Ser 290	Ala	Val	Ala	Ser	Asn 295	Met	Arg	Asp	Asp	Glu 300	Ile	Thr	Gln	Asp	
Glu 305	Asn	Thr	Val	Ser	Thr 310	Ser	Leu	Gly	His	Ser 315	Lys	Asp	Glu	Asn	Ser 320	
Lys	Gln	Thr	Cys	Ile 325	Arg	Ile	Gly	Thr	Lys 330	Thr	Pro	Lys	Ser	Asp 335	Ser	
Cys	Thr	Pro	Thr 340	Asn	Thr	Thr	Val	Glu 345	Val	Val	Gly	Ser	Ser 350	Gly	Gln	
Asn	Gly	Asp 355	Glu	Lys	Gln	Asn	Ile 360	Val	Ala	Arg	Lys	Ile 365	Val	Lys	Met	
Thr	Lys 370	Gln	Pro	Ala	Lys	Lys 375	Lys	Pro	Pro	Pro	Ser 380	Arg	Glu	Lys	Lys	
Val 385	Thr	Arg	Thr	Ile	Leu 390	Ala	Ile	Leu	Leu	Ala 395	Phe	Ile	Ile	Thr	Trp 400	

Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460
 Thr Arg Pro Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg
 465 470 475 480
 Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg
 485 490 495
 Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu
 500 505 510
 Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser
 515 520 525
 Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly
 530 535 540
 Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr
 545 550 555 560
 Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys
 565 570 575
 Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu
 580 585 590
 Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys
 595 600 605
 Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met
 610 615 620
 Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala
 625 630 635 640
 His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr
 645 650 655
 Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg
 660 665 670

Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys
 675 680 685

Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile
 690 695 700

Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro
 705 710 715 720

Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu
 725 730 735

Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile
 740 745 750

Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr
 755 760 765

Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile
 770 775 780

Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly
 785 790 795 800

Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp
 805 810 815

Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly
 820 825 830

Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe
 835 840 845

Ser Ile Ser Pro Asp Ser Leu Ser
 850 855

<210> 33
 <211> 2508
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2508)

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 Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
 1 5 10 15 48

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc
 Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser 96

73																
20				25				30								
ctc	agt	ttg	gtg	acc	att	atc	ggg	aac	atc	cta	gtc	atg	ggt	tcc	att	144
Leu	Ser	Leu	Val	Thr	Ile	Ile	Gly	Asn	Ile	Leu	Val	Met	Val	Ser	Ile	
		35					40					45				
aaa	gtc	aac	cgc	cac	ctc	cag	acc	gtc	aac	aat	tac	ttt	tta	ttc	agc	192
Lys	Val	Asn	Arg	His	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	Leu	Phe	Ser	
	50					55					60					
ttg	gcc	tgt	gct	gac	ctt	atc	ata	ggt	ggt	ttc	tcc	atg	aac	ttg	tac	240
Leu	Ala	Cys	Ala	Asp	Leu	Ile	Ile	Gly	Val	Phe	Ser	Met	Asn	Leu	Tyr	
65					70					75					80	
acc	ctc	tac	act	gtg	att	ggt	tac	tgg	cct	ttg	gga	cct	gtg	gtg	tgt	288
Thr	Leu	Tyr	Thr	Val	Ile	Gly	Tyr	Trp	Pro	Leu	Gly	Pro	Val	Val	Cys	
				85					90					95		
gac	ctt	tgg	cta	gcc	ctg	gac	tat	gtg	gtc	agc	aat	gcc	tca	ggt	atg	336
Asp	Leu	Trp	Leu	Ala	Leu	Asp	Tyr	Val	Val	Ser	Asn	Ala	Ser	Val	Met	
			100					105					110			
aat	ctg	ctc	atc	atc	agc	ttt	gac	agg	tac	ttc	tgt	gtc	aca	aaa	cct	384
Asn	Leu	Leu	Ile	Ile	Ser	Phe	Asp	Arg	Tyr	Phe	Cys	Val	Thr	Lys	Pro	
		115					120					125				
ctg	acc	tac	cca	gtc	aag	cgg	acc	aca	aaa	atg	gca	ggt	atg	atg	att	432
Leu	Thr	Tyr	Pro	Val	Lys	Arg	Thr	Thr	Lys	Met	Ala	Gly	Met	Met	Ile	
	130					135					140					
gca	gct	gcc	tgg	gtc	ctc	tct	ttc	atc	ctc	tgg	gct	cca	gcc	att	ctc	480
Ala	Ala	Ala	Trp	Val	Leu	Ser	Phe	Ile	Leu	Trp	Ala	Pro	Ala	Ile	Leu	
145				150						155					160	
ttc	tgg	cag	ttc	att	gta	ggg	gtg	aga	act	gtg	gag	gat	ggg	gag	tgc	528
Phe	Trp	Gln	Phe	Ile	Val	Gly	Val	Arg	Thr	Val	Glu	Asp	Gly	Glu	Cys	
				165					170					175		
tac	att	cag	ttt	ttt	tcc	aat	gct	gct	gtc	acc	ttt	ggt	acg	gct	att	576
Tyr	Ile	Gln	Phe	Phe	Ser	Asn	Ala	Ala	Val	Thr	Phe	Gly	Thr	Ala	Ile	
			180					185					190			
gca	gcc	ttc	tat	ttg	cca	gtg	atc	atc	atg	act	gtg	cta	tat	tgg	cac	624
Ala	Ala	Phe	Tyr	Leu	Pro	Val	Ile	Ile	Met	Thr	Val	Leu	Tyr	Trp	His	
		195					200					205				
ata	tcc	cga	gcc	agc	aag	agc	agg	ata	aag	aag	gac	aag	aag	gag	cct	672
Ile	Ser	Arg	Ala	Ser	Lys	Ser	Arg	Ile	Lys	Lys	Asp	Lys	Lys	Glu	Pro	
	210					215					220					
gtt	gcc	aac	caa	gac	ccc	gtt	tct	cca	agt	ctg	gta	caa	gga	agg	ata	720
Val	Ala	Asn	Gln	Asp	Pro	Val	Ser	Pro	Ser	Leu	Val	Gln	Gly	Arg	Ile	
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gtg	aag	cca	aac	aat	aac	aac	atg	ccc	agc	agt	gac	gat	ggc	ctg	gag	768
Val	Lys	Pro	Asn	Asn	Asn	Asn	Met	Pro	Ser	Ser	Asp	Asp	Gly	Leu	Glu	
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cac	aac	aaa	atc	cag	aat	ggc	aaa	gcc	ccc	agg	gat	cct	gtg	act	gaa	816
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aac	tgt	gtt	cag	gga	gag	gag	aag	gag	agc	tcc	aat	gac	tcc	acc	tca	864
Asn	Cys	Val	Gln	Gly	Glu	Glu	Lys	Glu	Ser	Ser	Asn	Asp	Ser	Thr	Ser	
		275					280					285				
gtc	agt	gct	gtt	gcc	tct	aat	atg	aga	gat	gat	gaa	ata	acc	cag	gat	912
Val	Ser	Ala	Val	Ala	Ser	Asn	Met	Arg	Asp	Asp	Glu	Ile	Thr	Gln	Asp	
	290					295					300					

gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	cct Pro	gca Ala	gag Glu	ccc Pro 470	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 475	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 480	1440
ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 485	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 490	gcc Ala	cac His	aag Lys	aac Asn	att Ile 495	cga Arg	1488
gag Glu	cag Gln	ggc Gly	cgc Arg 500	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 505	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 510	gac Asp	ctc Leu	1536
aaa Lys	tgg Trp	cca Pro 515	cac His	act Thr	ctg Leu	ctc Leu	att Ile 520	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 525	ctg Leu	tgc Cys	agc Ser	1584
tgg Trp	ctg Leu 530	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 535	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 540	ttc Phe	gcc Ala	cac His	ggg Gly	1632
gac Asp 545	ctg Leu	gcc Ala	ccc Pro	gga Gly	gag Glu 550	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 555	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 560	1680
cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 565	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 570	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 575	acc Thr	1728

[illegible]

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 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 34

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Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
 35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
 50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
 65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
 85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
 100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240

Val Lys Pro Asn Asn₂₄₅ Asn Asn Met Pro Ser₂₅₀ Ser Asp Asp Gly Leu₂₅₅ Glu
 His Asn Lys Ile₂₆₀ Gln Asn Gly Lys Ala₂₆₅ Pro Arg Asp Pro Val₂₇₀ Thr Glu
 Asn Cys Val₂₇₅ Gln Gly Glu Glu Lys₂₈₀ Glu Ser Ser Asn Asp₂₈₅ Ser Thr Ser
 Val Ser₂₉₀ Ala Val Ala Ser Asn₂₉₅ Met Arg Asp Asp Glu₃₀₀ Ile Thr Gln Asp
 Glu₃₀₅ Asn Thr Val Ser Thr₃₁₀ Ser Leu Gly His Ser₃₁₅ Lys Asp Glu Asn Ser₃₂₀
 Lys Gln Thr Cys Ile₃₂₅ Arg Ile Gly Thr Lys₃₃₀ Thr Pro Lys Ser Asp₃₃₅ Ser
 Cys Thr Pro Thr₃₄₀ Asn Thr Thr Val Glu₃₄₅ Val Val Gly Ser Ser₃₅₀ Gly Gln
 Asn Gly Asp₃₅₅ Glu Lys Gln Asn Ile₃₆₀ Val Ala Arg Lys Ile₃₆₅ Val Lys Met
 Thr Lys₃₇₀ Gln Pro Ala Lys Lys₃₇₅ Lys Pro Pro Pro Ser₃₈₀ Arg Glu Lys Lys
 Val₃₈₅ Thr Arg Thr Ile Leu₃₉₀ Ala Ile Leu Leu Ala₃₉₅ Phe Ile Ile Thr Trp₄₀₀
 Ala Pro Tyr Asn Val₄₀₅ Met Val Leu Ile Asn₄₁₀ Thr Phe Cys Ala Pro₄₁₅ Cys
 Ile Pro Asn Thr₄₂₀ Val Trp Thr Ile Gly₄₂₅ Tyr Trp Leu Cys Tyr₄₃₀ Ile Asn
 Ser Thr Ile₄₃₅ Asn Pro Ala Cys Tyr₄₄₀ Ala Leu Cys Asn Ala₄₄₅ Thr Phe Lys
 Lys Thr₄₅₀ Phe Lys His Leu Leu₄₅₅ Met Cys His Tyr Lys₄₆₀ Asn Ile Gly Ala
 Thr₄₆₅ Arg Pro Ala Glu Pro₄₇₀ Arg Tyr Arg Thr Arg₄₇₅ Glu Arg Arg Ala Arg₄₈₀
 Phe Val Ser Lys Lys₄₈₅ Gly Asn Cys Asn Val₄₉₀ Ala His Lys Asn Ile₄₉₅ Arg
 Glu Gln Gly Arg₅₀₀ Phe Leu Gln Asp Val₅₀₅ Phe Thr Thr Leu Val₅₁₀ Asp Leu

Lys Trp Pro⁵¹⁵ His Thr Leu Leu Ile⁵²⁰ Phe Thr⁷⁸ Met Ser Phe⁵²⁵ Leu Cys Ser
 Trp Leu⁵³⁰ Leu Phe Ala Met Val⁵³⁵ Trp Trp Leu Ile Ala⁵⁴⁰ Phe Ala His Gly
 Asp⁵⁴⁵ Leu Ala Pro Gly Glu⁵⁵⁰ Gly Thr Asn Val⁵⁵⁵ Pro Cys Val Thr Ser Ile⁵⁶⁰
 His Ser Phe Ser Ser⁵⁶⁵ Ala Phe Leu Phe Ser⁵⁷⁰ Ile Glu Val Gln Val⁵⁷⁵ Thr
 Ile Gly Phe Gly⁵⁸⁰ Gly Arg Met Val Thr⁵⁸⁵ Glu Glu Cys Pro Leu⁵⁹⁰ Ala Ile
 Leu Ile Leu⁵⁹⁵ Ile Val Gln Asn Ile⁶⁰⁰ Val Gly Leu Met Ile⁶⁰⁵ Asn Ala Ile
 Met Leu⁶¹⁰ Gly Cys Ile Phe Met⁶¹⁵ Lys Thr Ala Gln Ala⁶²⁰ His Arg Arg Ala
 Glu Thr Leu Ile Phe Ser⁶³⁰ Lys His Ala Val Ile⁶³⁵ Thr Leu Arg His Gly⁶⁴⁰
 Arg Leu Cys Phe Met⁶⁴⁵ Leu Arg Val Gly Asp⁶⁵⁰ Leu Arg Lys Ser Met⁶⁵⁵ Ile
 Ile Ser Ala Thr⁶⁶⁰ Ile His Met Gln Val⁶⁶⁵ Val Arg Lys Thr Thr⁶⁷⁰ Ser Pro
 Glu Gly Glu⁶⁷⁵ Val Val Pro Leu His⁶⁸⁰ Gln Val Asp Ile Pro⁶⁸⁵ Met Glu Asn
 Gly Val⁶⁹⁰ Gly Gly Asn Gly Ile⁶⁹⁵ Phe Leu Val Ala Pro⁷⁰⁰ Leu Ile Ile Tyr
 His Val Ile Asp Ser Asn⁷¹⁰ Ser Pro Leu Tyr Asp⁷¹⁵ Leu Ala Pro Ser Asp⁷²⁰
 Leu His His His Gln⁷²⁵ Asp Leu Glu Ile Ile⁷³⁰ Val Ile Leu Glu Gly⁷³⁵ Val
 Val Glu Thr Thr⁷⁴⁰ Gly Ile Thr Thr Gln⁷⁴⁵ Ala Arg Thr Ser Tyr⁷⁵⁰ Leu Ala
 Asp Glu Ile⁷⁵⁵ Leu Trp Gly Gln Arg⁷⁶⁰ Phe Val Pro Ile Val⁷⁶⁵ Ala Glu Glu
 Asp Gly⁷⁷⁰ Arg Tyr Ser Val Asp⁷⁷⁵ Tyr Ser Lys Phe Gly⁷⁸⁰ Asn Thr Ile Lys
 Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser

785 790 795 800

Leu Leu Asp Ala Leu₈₀₅ Thr Leu Ala Ser Ser₈₁₀ Arg Gly Pro Leu Arg₈₁₅ Lys

Arg Ser Val Ala₈₂₀ Val Ala Lys Ala Lys₈₂₅ Pro Lys Phe Ser Ile₈₃₀ Ser Pro

Asp Ser Leu₈₃₅ Ser

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cct Pro	tat Tyr	aag Lys	aca Thr 20	ttt Phe	gaa Glu	gtg Val	gtg Val	ttt Phe 25	att Ile	gtc Val	ctg Leu	gtg Val	gct Ala 30	gga Gly	tcc Ser		96
ctc Leu	agt Ser	ttg Leu 35	gtg Val	acc Thr	att Ile	atc Ile	ggg Gly 40	aac Asn	atc Ile	cta Leu	gtc Val	atg Met 45	gtt Val	tcc Ser	att Ile		144
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser		192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80		240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys		288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met		336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro		384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile		432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160		480

80																
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Phe	Trp	Gln	Phe	Ile	Val	Gly	Val	Arg	Thr	Val	Glu	Asp	Gly	Glu	Cys	
				165					170					175		
tac	att	cag	ttt	ttt	tcc	aat	gct	gct	gtc	acc	ttt	ggg	acg	gct	att	576
Tyr	Ile	Gln	Phe	Phe	Ser	Asn	Ala	Ala	Val	Thr	Phe	Gly	Thr	Ala	Ile	
			180					185					190			
gca	gcc	ttc	tat	ttg	cca	gtg	atc	atc	atg	act	gtg	cta	tat	tgg	cac	624
Ala	Ala	Phe	Tyr	Leu	Pro	Val	Ile	Ile	Met	Thr	Val	Leu	Tyr	Trp	His	
		195					200					205				
ata	tcc	cga	gcc	agc	aag	agc	agg	ata	aag	aag	gac	aag	aag	gag	cct	672
Ile	Ser	Arg	Ala	Ser	Lys	Ser	Arg	Ile	Lys	Lys	Asp	Lys	Lys	Glu	Pro	
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gtt	gcc	aac	caa	gac	ccc	gtt	tct	cca	agt	ctg	gta	caa	gga	agg	ata	720
Val	Ala	Asn	Gln	Asp	Pro	Val	Ser	Pro	Ser	Leu	Val	Gln	Gly	Arg	Ile	
225					230					235					240	
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Val	Lys	Pro	Asn	Asn	Asn	Asn	Met	Pro	Ser	Ser	Asp	Asp	Gly	Leu	Glu	
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His	Asn	Lys	Ile	Gln	Asn	Gly	Lys	Ala	Pro	Arg	Asp	Pro	Val	Thr	Glu	
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Asn	Cys	Val	Gln	Gly	Glu	Glu	Lys	Glu	Ser	Ser	Asn	Asp	Ser	Thr	Ser	
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gtc	agt	gct	gtt	gcc	tct	aat	atg	aga	gat	gat	gaa	ata	acc	cag	gat	912
Val	Ser	Ala	Val	Ala	Ser	Asn	Met	Arg	Asp	Asp	Glu	Ile	Thr	Gln	Asp	
	290					295					300					
gaa	aac	aca	gtt	tcc	act	tcc	ctg	ggc	cat	tcc	aaa	gat	gag	aac	tct	960
Glu	Asn	Thr	Val	Ser	Thr	Ser	Leu	Gly	His	Ser	Lys	Asp	Glu	Asn	Ser	
305					310					315					320	
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Lys	Gln	Thr	Cys	Ile	Arg	Ile	Gly	Thr	Lys	Thr	Pro	Lys	Ser	Asp	Ser	
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tgt	acc	cca	act	aat	acc	acc	gtg	gag	gta	gtg	ggg	tct	tca	ggg	cag	1056
Cys	Thr	Pro	Thr	Asn	Thr	Thr	Val	Glu	Val	Val	Gly	Ser	Ser	Gly	Gln	
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Asn	Gly	Asp	Glu	Lys	Gln	Asn	Ile	Val	Ala	Arg	Lys	Ile	Val	Lys	Met	
		355					360					365				
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152
Thr	Lys	Gln	Pro	Ala	Lys	Lys	Lys	Pro	Pro	Pro	Ser	Arg	Glu	Lys	Lys	
	370					375					380					
gtc	acc	agg	aca	atc	ttg	gct	att	ctg	ttg	gct	ttc	atc	atc	act	tgg	1200
Val	Thr	Arg	Thr	Ile	Leu	Ala	Ile	Leu	Leu	Ala	Phe	Ile	Ile	Thr	Trp	
385					390					395					400	
gcc	cca	tac	aat	gtc	atg	gtg	ctc	att	aac	acc	ttt	tgt	gca	cct	tgc	1248
Ala	Pro	Tyr	Asn	Val	Met	Val	Leu	Ile	Asn	Thr	Phe	Cys	Ala	Pro	Cys	
				405					410				415			
atc	ccc	aac	act	gtg	tgg	aca	att	ggg	tac	tgg	ctt	tgt	tac	atc	aac	1296
Ile	Pro	Asn	Thr	Val	Trp	Thr	Ile	Gly	Tyr	Trp	Leu	Cys	Tyr	Ile	Asn	
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81															
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aca Thr 465	agg Arg	cct Pro	gca Ala	gag Glu	ccc Pro 470	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 475	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 480
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aaa Lys	tgg Trp	cca Pro 515	cac His	act Thr	ctg Leu	ctc Leu	att Ile 520	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 525	ctg Leu	tgc Cys	agc Ser
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att Ile	ggc Gly	ttc Phe	ggc Gly 580	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 585	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 590	gcc Ala	atc Ile
ctc Leu	att Ile	ctc Leu 595	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 600	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 605	aac Asn	gcc Ala	atc Ile
atg Met	ctg Leu 610	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 615	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 620	cat His	cgg Arg	cgg Arg	gca Ala
gaa Glu 625	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 630	aag Lys	cat His	gct Ala	gtg Val	atc Ile 635	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 640
cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 645	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 650	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 655	atc Ile
att Ile	agc Ser	gcc Ala	acc Thr 660	atc Ile	cac His	atg Met	cag Gln	gtg Val 665	gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 670	agc Ser	ccc Pro
gag Glu	ggc Gly	gaa Glu 675	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 680	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 685	atg Met	gag Glu	aat Asn
ggc Gly	gtg Val 690	ggt Gly	ggt Gly	aac Asn	ggc Gly	atc Ile 695	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 700	ctc Leu	atc Ile	atc Ile	tac Tyr
cac His	gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp

705					710					82 715					720	
ctg Leu	cac His	cac His	cac His	cag Gln 725	gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 730	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 735	gtg Val	2208
gta Val	gaa Glu	acc Thr	acg Thr 740	ggc Gly	atc Ile	acc Thr	acc Thr	cag Gln 745	gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 750	cta Leu	gct Ala	2256
gac Asp	gag Glu	att Ile 755	cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg 760	ttt Phe	gtc Val	ccc Pro	att Ile	gtg Val 765	gcc Ala	gag Glu	gag Glu	2304
gac Asp	ggc Gly 770	cgc Arg	tat Tyr	tct Ser	gtg Val	gac Asp 775	tac Tyr	tcc Ser	aaa Lys	ttt Phe	ggc Gly 780	aac Asn	acc Thr	att Ile	aaa Lys	2352
gtg Val 785	ccc Pro	aca Thr	cca Pro	ctc Leu	tgc Cys 790	aca Thr	gcc Ala	cgc Arg	cag Gln	ctt Leu 795	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser 800	2400

<210> 36
 <211> 800
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 36

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu⁸³ Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240

Val Lys Pro Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255

His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270

Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285

Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300

Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320

Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335

Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350

Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365

Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380

Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400

Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415

Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn

420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460
 Thr Arg Pro Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg
 465 470 475 480
 Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg
 485 490 495
 Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu
 500 505 510
 Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser
 515 520 525
 Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly
 530 535 540
 Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile
 545 550 555 560
 His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr
 565 570 575
 Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile
 580 585 590
 Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile
 595 600 605
 Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala
 610 615 620
 Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly
 625 630 635 640
 Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile
 645 650 655
 Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro
 660 665 670
 Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn
 675 680 685
 Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr
 690 695 700

His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp
705 710 715 720

Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val
725 730 735

Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala
740 745 750

Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu
755 760 765

Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys
770 775 780

Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
785 790 795 800

<210> 37
<211> 2445
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2445)

<400> 37	
atg aat aac tca aca aac tcc tct aac aat agc ctg gct ctt aca agt	48
Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser	
1 5 10 15	
cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc	96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser	
20 25 30	
ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att	144
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile	
35 40 45	
aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc	192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser	
50 55 60	
ttg gcc tgt gct gac ctt atc ata ggt gtt ttc tcc atg aac ttg tac	240
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr	
65 70 75 80	
acc ctc tac act gtg att ggt tac tgg cct ttg gga cct gtg gtg tgt	288
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys	
85 90 95	
gac ctt tgg cta gcc ctg gac tat gtg gtc agc aat gcc tca gtt atg	336
Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met	
100 105 110	
aat ctg ctc atc atc agc ttt gac agg tac ttc tgt gtc aca aaa cct	384

Asn	Leu	Leu	Ile	Ile	Ser	Phe	Asp	Arg	Tyr	⁸⁶ Phe	Cys	Val	Thr	Lys	Pro	
		115					120					125				
ctg	acc	tac	cca	gtc	aag	cgg	acc	aca	aaa	atg	gca	ggg	atg	atg	att	432
Leu	Thr	Tyr	Pro	Val	Lys	Arg	Thr	Thr	Lys	Met	Ala	Gly	Met	Met	Ile	
	130					135					140					
gca	gct	gcc	ttg	gtc	ctc	tct	ttc	atc	ctc	ttg	gct	cca	gcc	att	ctc	480
Ala	Ala	Ala	Trp	Val	Leu	Ser	Phe	Ile	Leu	Trp	Ala	Pro	Ala	Ile	Leu	
145					150					155					160	
ttc	ttg	cag	ttc	att	gta	ggg	gtg	aga	act	gtg	gag	gat	ggg	gag	tgc	528
Phe	Trp	Gln	Phe	Ile	Val	Gly	Val	Arg	Thr	Val	Glu	Asp	Gly	Glu	Cys	
				165					170					175		
tac	att	cag	ttt	ttt	tcc	aat	gct	gct	gtc	acc	ttt	ggg	acg	gct	att	576
Tyr	Ile	Gln	Phe	Phe	Ser	Asn	Ala	Ala	Val	Thr	Phe	Gly	Thr	Ala	Ile	
			180					185					190			
gca	gcc	ttc	tat	ttg	cca	gtg	atc	atc	atg	act	gtg	cta	tat	ttg	cac	624
Ala	Ala	Phe	Tyr	Leu	Pro	Val	Ile	Ile	Met	Thr	Val	Leu	Tyr	Trp	His	
		195					200					205				
ata	tcc	cga	gcc	agc	aag	agc	agg	ata	aag	aag	gac	aag	aag	gag	cct	672
Ile	Ser	Arg	Ala	Ser	Lys	Ser	Arg	Ile	Lys	Lys	Asp	Lys	Lys	Glu	Pro	
	210					215					220					
gtt	gcc	aac	caa	gac	ccc	gtt	tct	cca	agt	ctg	gta	caa	gga	agg	ata	720
Val	Ala	Asn	Gln	Asp	Pro	Val	Ser	Pro	Ser	Leu	Val	Gln	Gly	Arg	Ile	
225					230					235					240	
gtg	aag	cca	aac	aat	aac	aac	atg	ccc	agc	agt	gac	gat	ggc	ctg	gag	768
Val	Lys	Pro	Asn	Asn	Asn	Asn	Met	Pro	Ser	Ser	Asp	Asp	Gly	Leu	Glu	
				245				250						255		
cac	aac	aaa	atc	cag	aat	ggc	aaa	gcc	ccc	agg	gat	cct	gtg	act	gaa	816
His	Asn	Lys	Ile	Gln	Asn	Gly	Lys	Ala	Pro	Arg	Asp	Pro	Val	Thr	Glu	
			260					265					270			
aac	tgt	gtt	cag	gga	gag	gag	aag	gag	agc	tcc	aat	gac	tcc	acc	tca	864
Asn	Cys	Val	Gln	Gly	Glu	Glu	Lys	Glu	Ser	Ser	Asn	Asp	Ser	Thr	Ser	
		275					280					285				
gtc	agt	gct	gtt	gcc	tct	aat	atg	aga	gat	gat	gaa	ata	acc	cag	gat	912
Val	Ser	Ala	Val	Ala	Ser	Asn	Met	Arg	Asp	Asp	Glu	Ile	Thr	Gln	Asp	
	290					295					300					
gaa	aac	aca	gtt	tcc	act	tcc	ctg	ggc	cat	tcc	aaa	gat	gag	aac	tct	960
Glu	Asn	Thr	Val	Ser	Thr	Ser	Leu	Gly	His	Ser	Lys	Asp	Glu	Asn	Ser	
305				310						315					320	
aag	caa	aca	tgc	atc	aga	att	ggc	acc	aag	acc	cca	aaa	agt	gac	tca	1008
Lys	Gln	Thr	Cys	Ile	Arg	Ile	Gly	Thr	Lys	Thr	Pro	Lys	Ser	Asp	Ser	
				325					330					335		
tgt	acc	cca	act	aat	acc	acc	gtg	gag	gta	gtg	ggg	tct	tca	ggg	cag	1056
Cys	Thr	Pro	Thr	Asn	Thr	Thr	Val	Glu	Val	Val	Gly	Ser	Ser	Gly	Gln	
			340					345					350			
aat	gga	gat	gaa	aag	cag	aat	att	gta	gcc	cgc	aag	att	gtg	aag	atg	1104
Asn	Gly	Asp	Glu	Lys	Gln	Asn	Ile	Val	Ala	Arg	Lys	Ile	Val	Lys	Met	
		355					360					365				
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152
Thr	Lys	Gln	Pro	Ala	Lys	Lys	Lys	Pro	Pro	Pro	Ser	Arg	Glu	Lys	Lys	
	370					375					380					
gtc	acc	agg	aca	atc	ttg	gct	att	ctg	ttg	gct	ttc	atc	atc	act	ttg	1200
Val	Thr	Arg	Thr	Ile	Leu	Ala	Ile	Leu	Leu	Ala	Phe	Ile	Ile	Thr	Trp	

385				390				87 395				400				
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggc Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	cct Pro	gca Ala	gag Glu	1392
ccc Pro 465	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 470	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 475	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 480	1440
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly 495	cgc Arg 495	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggc Gly	gat Asp 540	ctc Leu	tat Tyr	gct Ala	tac Tyr	1632
atg Met 545	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 550	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 555	cca Pro	tac Tyr	gat Asp	gta Val	cca Pro 560	1680
gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 565	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 570	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 575	cac His	1728
tcc Ser	ttt Phe	tca Ser	tct Ser 580	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 585	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 590	acc Thr	att Ile	1776
ggc Gly	ttc Phe	ggc Gly 595	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 600	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 605	gcc Ala	atc Ile	ctc Leu	1824
att Ile	ctc Leu 610	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 615	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 620	aac Asn	gcc Ala	atc Ile	atg Met	1872
ctg Leu 625	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 630	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 635	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 640	1920
acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 645	aag Lys	cat His	gct Ala	gtg Val	atc Ile 650	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 655	cgc Arg	1968
ctg Leu	tgc Cys	ttc Phe	atg Met 660	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 665	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 670	atc Ile	att Ile	2016

agc gcc acc atc cac atg cag gtg gtg cgc aag acc acc agc ccc gag	2064
Ser Ala Thr 675 Ile His Met Gln Val Val Arg Lys Thr 685 Ser Pro Glu	
ggc gaa gtt gtg cct ctc cac cag gta gac atc ccc atg gag aat ggc	2112
Gly Glu Val Val Pro Leu His 695 Gln Val Asp Ile Pro 700 Met Glu Asn Gly	
gtg ggt ggt aac ggc atc ttc ctg gtg gcc cca ctc atc atc tac cac	2160
Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro 715 Leu Ile Ile Tyr His 720	
gtc atc gac tcc aac agc ccg ctc tac gac ctg gct cct agt gac ctg	2208
Val Ile Asp Ser Asn 725 Ser Pro Leu Tyr Asp 730 Leu Ala Pro Ser Asp Leu 735	
cac cac cac cag gac ctg gag atc att gtc atc ttg gaa ggc gtg gta	2256
His His His Gln 740 Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val 750	
gaa acc acg ggc atc acc acc cag gcc cgc acc tcc tac cta gct gac	2304
Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr 765 Leu Ala Asp 755	
gag att cta tgg ggg cag cgc ttt gtc ccc att gtg gcc gag gag gac	2352
Glu Ile Leu Trp Gly Gln Arg 775 Phe Val Pro Ile Val Ala Glu Glu Asp 780	
ggc cgc tat tct gtg gac tac tcc aaa ttt ggt aac acc att aaa gtg	2400
Gly Arg Tyr Ser Val Asp 790 Tyr Ser Lys Phe Gly 795 Asn Thr Ile Lys Val 800	
ccc aca cca ctc tgc aca gcc cgc cag ctt gat gag gac cgc agt	2445
Pro Thr Pro Leu Cys 805 Thr Ala Arg Gln Leu 810 Asp Glu Asp Arg Ser 815	

<210> 38
 <211> 815
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> Synthetic Construct
 <400> 38

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys

85																90				89		95			
Asp	Leu	Trp	Leu 100	Ala	Leu	Asp	Tyr	Val 105	Val	Ser	Asn	Ala	Ser 110	Val	Met										
Asn	Leu	Leu 115	Ile	Ile	Ser	Phe	Asp 120	Arg	Tyr	Phe	Cys	Val 125	Thr	Lys	Pro										
Leu	Thr 130	Tyr	Pro	Val	Lys	Arg 135	Thr	Thr	Lys	Met	Ala 140	Gly	Met	Met	Ile										
Ala 145	Ala	Ala	Trp	Val	Leu 150	Ser	Phe	Ile	Leu	Trp 155	Ala	Pro	Ala	Ile	Leu 160										
Phe	Trp	Gln	Phe	Ile 165	Val	Gly	Val	Arg	Thr 170	Val	Glu	Asp	Gly	Glu 175	Cys										
Tyr	Ile	Gln	Phe 180	Phe	Ser	Asn	Ala	Ala 185	Val	Thr	Phe	Gly	Thr 190	Ala	Ile										
Ala	Ala	Phe 195	Tyr	Leu	Pro	Val	Ile 200	Ile	Met	Thr	Val	Leu 205	Tyr	Trp	His										
Ile	Ser 210	Arg	Ala	Ser	Lys	Ser 215	Arg	Ile	Lys	Lys	Asp 220	Lys	Lys	Glu	Pro										
Val 225	Ala	Asn	Gln	Asp	Pro 230	Val	Ser	Pro	Ser	Leu 235	Val	Gln	Gly	Arg	Ile 240										
Val	Lys	Pro	Asn	Asn 245	Asn	Asn	Met	Pro	Ser 250	Ser	Asp	Asp	Gly	Leu 255	Glu										
His	Asn	Lys	Ile 260	Gln	Asn	Gly	Lys	Ala 265	Pro	Arg	Asp	Pro	Val 270	Thr	Glu										
Asn	Cys	Val 275	Gln	Gly	Glu	Glu	Lys 280	Glu	Ser	Ser	Asn	Asp 285	Ser	Thr	Ser										
Val	Ser 290	Ala	Val	Ala	Ser	Asn 295	Met	Arg	Asp	Asp	Glu 300	Ile	Thr	Gln	Asp										
Glu 305	Asn	Thr	Val	Ser	Thr 310	Ser	Leu	Gly	His	Ser 315	Lys	Asp	Glu	Asn	Ser 320										
Lys	Gln	Thr	Cys	Ile 325	Arg	Ile	Gly	Thr	Lys 330	Thr	Pro	Lys	Ser	Asp 335	Ser										
Cys	Thr	Pro	Thr 340	Asn	Thr	Thr	Val	Glu 345	Val	Val	Gly	Ser	Ser 350	Gly	Gln										
Asn	Gly	Asp 355	Glu	Lys	Gln	Asn	Ile 360	Val	Ala	Arg	Lys	Ile 365	Val	Lys	Met										

Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380

Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400

Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415

Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430

Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445

Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Pro Ala Glu
 450 455 460

Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys
 465 470 475 480

Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe
 485 490 495

Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr
 500 505 510

Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
 515 520 525

Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr
 530 535 540

Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro
 545 550 555 560

Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His
 565 570 575

Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile
 580 585 590

Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu
 595 600 605

Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met
 610 615 620

Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu
 625 630 635 640

Thr Leu Ile Phe Ser₆₄₅ Lys His Ala Val Ile₆₅₀ Thr Leu Arg His Gly₆₅₅ Arg

Leu Cys Phe Met₆₆₀ Leu Arg Val Gly Asp₆₆₅ Leu Arg Lys Ser Met₆₇₀ Ile Ile

Ser Ala Thr₆₇₅ Ile His Met Gln Val₆₈₀ Val Arg Lys Thr Thr₆₈₅ Ser Pro Glu

Gly Glu Val Val Pro Leu His₆₉₅ Gln Val Asp Ile Pro₇₀₀ Met Glu Asn Gly

Val Gly Gly Asn Gly Ile₇₁₀ Phe Leu Val Ala Pro₇₁₅ Leu Ile Ile Tyr His₇₂₀

Val Ile Asp Ser Asn₇₂₅ Ser Pro Leu Tyr Asp₇₃₀ Leu Ala Pro Ser Asp₇₃₅ Leu

His His His Gln₇₄₀ Asp Leu Glu Ile Ile₇₄₅ Val Ile Leu Glu Gly₇₅₀ Val Val

Glu Thr Thr₇₅₅ Gly Ile Thr Thr Gln₇₆₀ Ala Arg Thr Ser Tyr₇₆₅ Leu Ala Asp

Glu Ile Leu Trp Gly Gln Arg₇₇₅ Phe Val Pro Ile Val₇₈₀ Ala Glu Glu Asp

Gly Arg Tyr Ser Val Asp₇₉₀ Tyr Ser Lys Phe Gly₇₉₅ Asn Thr Ile Lys Val₈₀₀

Pro Thr Pro Leu Cys₈₀₅ Thr Ala Arg Gln Leu₈₁₀ Asp Glu Asp Arg Ser₈₁₅

<210> 39
 <211> 2553
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2553)

<400> 39
 atg aat aac tca aca aac tcc tct aac aat agc ctg gct ctt aca agt 48
 Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
 1 5 10 15

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc 96
 Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
 20 25 30

ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att 144
 Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile

92																
35				40				45								
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser	192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960

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

<210> 40
 <211> 851
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 40

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
 1 5 10 15

Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
 20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
 35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
 50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
 65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
 85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
 100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240

Val Lys Pro Asn Asn₂₄₅ Asn Asn Met Pro Ser₂₅₀ Ser Asp Asp Gly Leu₂₅₅ Glu
 His Asn Lys Ile₂₆₀ Gln Asn Gly Lys Ala₂₆₅ Pro Arg Asp Pro Val₂₇₀ Thr Glu
 Asn Cys Val₂₇₅ Gln Gly Glu Glu Lys₂₈₀ Glu Ser Ser Asn Asp₂₈₅ Ser Thr Ser
 Val Ser₂₉₀ Ala Val Ala Ser Asn₂₉₅ Met Arg Asp Asp Glu₃₀₀ Ile Thr Gln Asp
 Glu₃₀₅ Asn Thr Val Ser Thr₃₁₀ Ser Leu Gly His Ser₃₁₅ Lys Asp Glu Asn Ser₃₂₀
 Lys Gln Thr Cys Ile₃₂₅ Arg Ile Gly Thr Lys₃₃₀ Thr Pro Lys Ser Asp₃₃₅ Ser
 Cys Thr Pro Thr₃₄₀ Asn Thr Thr Val Glu₃₄₅ Val Val Gly Ser Ser₃₅₀ Gly Gln
 Asn Gly Asp₃₅₅ Glu Lys Gln Asn Ile₃₆₀ Val Ala Arg Lys Ile₃₆₅ Val Lys Met
 Thr Lys₃₇₀ Gln Pro Ala Lys Lys₃₇₅ Lys Pro Pro Pro Ser₃₈₀ Arg Glu Lys Lys
 Val₃₈₅ Thr Arg Thr Ile Leu₃₉₀ Ala Ile Leu Leu Ala₃₉₅ Phe Ile Ile Thr Trp₄₀₀
 Ala Pro Tyr Asn Val₄₀₅ Met Val Leu Ile Asn₄₁₀ Thr Phe Cys Ala Pro₄₁₅ Cys
 Ile Pro Asn Thr₄₂₀ Val Trp Thr Ile Gly₄₂₅ Tyr Trp Leu Cys Tyr₄₃₀ Ile Asn
 Ser Thr Ile₄₃₅ Asn Pro Ala Cys Tyr₄₄₀ Ala Leu Cys Asn Ala₄₄₅ Thr Phe Lys
 Lys Thr₄₅₀ Phe Lys His Leu Leu₄₅₅ Met Cys His Tyr Lys₄₆₀ Asn Pro Ala Glu
 Pro Arg Tyr Arg Thr Arg₄₇₀ Glu Arg Arg Ala Arg₄₇₅ Phe Val Ser Lys Lys₄₈₀
 Gly Asn Cys Asn Val₄₈₅ Ala His Lys Asn Ile₄₉₀ Arg Glu Gln Gly Arg₄₉₅ Phe
 Leu Gln Asp Val₅₀₀ Phe Thr Thr Leu Val₅₀₅ Asp Leu Lys Trp Pro₅₁₀ His Thr

97

Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
515 520 525

Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr
530 535 540

Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro
545 550 555 560

Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His
565 570 575

Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile
580 585 590

Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu
595 600 605

Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met
610 615 620

Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu
625 630 635 640

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

Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile
660 665 670

Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
675 680 685

Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
690 695 700

Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
705 710 715 720

Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
725 730 735

His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
740 745 750

Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
755 760 765

Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
770 775 780

Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val

785 790 98 795 800

Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu
805 810 815

Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg
820 825 830

Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp
835 840 845

Ser Leu Ser
850

<210> 41
<211> 2493
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2493)

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Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc 96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att 144
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc 192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60

ttg gcc tgt gct gac ctt atc ata ggt gtt ttc tcc atg aac ttg tac 240
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80

acc ctc tac act gtg att ggt tac tgg cct ttg gga cct gtg gtg tgt 288
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
85 90 95

gac ctt tgg cta gcc ctg gac tat gtg gtc agc aat gcc tca gtt atg 336
Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
100 105 110

aat ctg ctc atc atc agc ttt gac agg tac ttc tgt gtc aca aaa cct 384
Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
115 120 125

ctg acc tac cca gtc aag cgg acc aca aaa atg gca ggt atg atg att 432
Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
130 135 140

gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc	ccc	aac	act	gtg	tgg	aca	att	ggt	tac	tgg	ctt	tgt	tac	atc	aac	1296

Ile	Pro	Asn	Thr 420	Val	Trp	Thr	Ile	Gly 425	100 Tyr	Trp	Leu	Cys	Tyr 430	Ile	Asn	
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	cct Pro	gca Ala	gag Glu	1392
ccc Pro 465	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 470	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 475	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 480	1440
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 495	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggc Gly	gac Asp 540	ctg Leu	gcc Ala	ccc Pro	gga Gly	1632
gag Glu 545	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 550	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 555	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 560	1680
gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 565	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 570	acc Thr	att Ile	ggc Gly	ttc Phe	ggc Gly 575	ggg Gly	1728
cgc Arg	atg Met	gtg Val 580	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 585	gcc Ala	atc Ile	ctc Leu	att Ile 590	ctc Leu	att Ile	gtg Val	1776
cag Gln	aat Asn	atc Ile 595	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 600	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 605	ggc Gly	tgc Cys	atc Ile	1824
ttc Phe	atg Met 610	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 615	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 620	acc Thr	ctc Leu	atc Ile	ttc Phe	1872
agc Ser 625	aag Lys	cat His	gct Ala	gtg Val	atc Ile 630	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 635	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 640	1920
ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 645	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 650	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 655	atc Ile	1968
cac His	atg Met	cag Gln	gtg Val 660	gtg Val	cgc Arg	aag Lys	acc Thr 665	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 670	gtt Val	gtg Val	2016
cct Pro	ctc Leu	cac His 675	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 680	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 685	ggc Gly	ggc Gly	aac Asn	2064
ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His	gtc Val	atc Ile	gac Asp	tcc Ser	2112

690	695	101	700			
aac agc ccg ctc tac gac ctg gct cct agt gac ctg cac cac cac cag	Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln	705	710	715	720	2160
gac ctg gag atc att gtc atc ttg gaa ggc gtg gta gaa acc acg ggc	Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly		725	730	735	2208
atc acc acc cag gcc cgc acc tcc tac cta gct gac gag att cta tgg	Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp		740	745	750	2256
ggg cag cgc ttt gtc ccc att gtg gcc gag gag gac ggc cgc tat tct	Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser		755	760	765	2304
gtg gac tac tcc aaa ttt ggt aac acc att aaa gtg ccc aca cca ctc	Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu		770	775	780	2352
tgc aca gcc cgc cag ctt gat gag gac cgc agt ctg ctg gat gcc ctg	Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu	785	790	795	800	2400
acc ctc gcc tcg tcg cgg ggg ccc ctg cgc aag cgc agt gtg gct gtg	Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val		805	810	815	2448
gcg aag gcc aag ccc aag ttt agc atc tct cca gat tcc ttg tcc	Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser		820	825	830	2493

<210> 42
 <211> 831
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 42

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
85 90 95

Asp Leu Trp Leu₁₀₀ Ala Leu Asp Tyr Val₁₀₅ Val¹⁰² Ser Asn Ala Ser Val Met
 Asn Leu Leu₁₁₅ Ile Ile Ser Phe Asp₁₂₀ Arg Tyr Phe Cys Val₁₂₅ Thr Lys Pro
 Leu Thr₁₃₀ Tyr Pro Val Lys Arg₁₃₅ Thr Thr Lys Met Ala₁₄₀ Gly Met Met Ile
 Ala₁₄₅ Ala Ala Trp Val Leu₁₅₀ Ser Phe Ile Leu Trp₁₅₅ Ala Pro Ala Ile Leu₁₆₀
 Phe Trp Gln Phe Ile₁₆₅ Val Gly Val Arg Thr₁₇₀ Val Glu Asp Gly Glu₁₇₅ Cys
 Tyr Ile Gln Phe₁₈₀ Phe Ser Asn Ala Ala₁₈₅ Val Thr Phe Gly Thr₁₉₀ Ala Ile
 Ala Ala Phe₁₉₅ Tyr Leu Pro Val Ile₂₀₀ Ile Met Thr Val Leu₂₀₅ Tyr Trp His
 Ile Ser₂₁₀ Arg Ala Ser Lys Ser₂₁₅ Arg Ile Lys Lys Asp₂₂₀ Lys Lys Glu Pro
 Val₂₂₅ Ala Asn Gln Asp Pro₂₃₀ Val Ser Pro Ser Leu₂₃₅ Val Gln Gly Arg Ile₂₄₀
 Val Lys Pro Asn₂₄₅ Asn Asn Met Pro Ser₂₅₀ Ser Asp Asp Gly Leu₂₅₅ Glu
 His Asn Lys Ile₂₆₀ Gln Asn Gly Lys Ala₂₆₅ Pro Arg Asp Pro Val₂₇₀ Thr Glu
 Asn Cys Val₂₇₅ Gln Gly Glu Glu Lys₂₈₀ Glu Ser Ser Asn Asp₂₈₅ Ser Thr Ser
 Val₂₉₀ Ser Ala Val Ala Ser Asn₂₉₅ Met Arg Asp Asp Glu₃₀₀ Ile Thr Gln Asp
 Glu₃₀₅ Asn Thr Val Ser Thr₃₁₀ Ser Leu Gly His Ser₃₁₅ Lys Asp Glu Asn Ser₃₂₀
 Lys Gln Thr Cys Ile₃₂₅ Arg Ile Gly Thr Lys₃₃₀ Thr Pro Lys Ser Asp₃₃₅ Ser
 Cys Thr Pro Thr₃₄₀ Asn Thr Thr Val Glu₃₄₅ Val Val Gly Ser Ser₃₅₀ Gly Gln
 Asn Gly Asp₃₅₅ Glu Lys Gln Asn Ile₃₆₀ Val Ala Arg Lys Ile₃₆₅ Val Lys Met
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys

370 375 103 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Pro Ala Glu
 450 455 460
 Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys
 465 470 475 480
 Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe
 485 490 495
 Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr
 500 505 510
 Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
 515 520 525
 Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly
 530 535 540
 Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
 545 550 555 560
 Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly
 565 570 575
 Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val
 580 585 590
 Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile
 595 600 605
 Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe
 610 615 620
 Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met
 625 630 635 640
 Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile
 645 650 655

His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val
660 665 670

Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn
675 680 685

Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser
690 695 700

Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln
705 710 715 720

Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly
725 730 735

Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp
740 745 750

Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser
755 760 765

Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu
770 775 780

Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu
785 790 795 800

Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val
805 810 815

Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
820 825 830

<210> 43
<211> 2385
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2385)

<400> 43
atg aat aac tca aca aac tcc tct aac aat agc ctg gct ctt aca agt 48
Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc 96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att 144

Leu	Ser	Leu 35	Val	Thr	Ile	Ile	Gly 40	Asn	Ile	105 Leu	Val	Met 45	Val	Ser	Ile	
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser	192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	ggt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	ggt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu 130	acc Thr	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser	960

305				310				106 315				320				
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	cct Pro	gca Ala	gag Glu	1392
ccc Pro 465	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 470	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 475	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 480	1440
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly 495	cgc Arg	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggg Gly	gac Asp 540	ctg Leu	gcc Ala	ccc Pro	gga Gly	1632
gag Glu 545	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 550	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 555	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 560	1680
gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 565	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 570	acc Thr	att Ile	ggg Gly	ttc Phe	ggc Gly 575	ggg Gly	1728
cgc Arg	atg Met	gtg Val	aca Thr 580	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 585	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 590	att Ile	gtg Val	1776

cag Gln	aat Asn	atc Ile 595	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 600	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 605	ggc Gly	tgc Cys	atc Ile	1824
ttc Phe	atg Met 610	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 615	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 620	acc Thr	ctc Leu	atc Ile	ttc Phe	1872
agc Ser 625	aag Lys	cat His	gct Ala	gtg Val	atc Ile 630	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 635	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 640	1920
ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 645	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 650	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 655	atc Ile	1968
cac His	atg Met	cag Gln	gtg Val 660	gtg Val	cgc Arg	aag Lys	acc Thr 665	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 670	gtt Val	gtg Val		2016
cct Pro	ctc Leu	cac His 675	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 680	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 685	ggg Gly	ggg Gly	aac Asn	2064
ggc Gly	atc Ile 690	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 695	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 700	gtc Val	atc Ile	gac Asp	tcc Ser	2112
aac Asn 705	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 710	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 715	ctg Leu	cac His	cac His	cac His	cag Gln 720	2160
gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 725	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 730	gtg Val	gta Val	gaa Glu	acc Thr	acg Thr 735	ggc Gly	2208
atc Ile	acc Thr	acc Thr	cag Gln 740	gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 745	cta Leu	gct Ala	gac Asp	gag Glu	att Ile 750	cta Leu	tgg Trp	2256
ggg Gly	cag Gln 755	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile	gtg Val 760	gcc Ala	gag Glu	gag Glu	gac Asp	ggc Gly 765	cgc Arg	tat Tyr	tct Ser	2304
gtg Val 770	gac Asp	tac Tyr	tcc Ser	aaa Lys	ttt Phe	ggt Gly 775	aac Asn	acc Thr	att Ile	aaa Lys	gtg Val 780	ccc Pro	aca Thr	cca Pro	ctc Leu	2352
tgc Cys 785	aca Thr	gcc Ala	cgc Arg	cag Gln	ctt Leu 790	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser 795						2385

<210> 44
 <211> 795
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 44

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser

108															
20						25						30			
Leu	Ser	Leu 35	Val	Thr	Ile	Ile	Gly 40	Asn	Ile	Leu	Val	Met 45	Val	Ser	Ile
Lys	Val 50	Asn	Arg	His	Leu	Gln 55	Thr	Val	Asn	Asn	Tyr 60	Phe	Leu	Phe	Ser
Leu 65	Ala	Cys	Ala	Asp	Leu 70	Ile	Ile	Gly	Val	Phe 75	Ser	Met	Asn	Leu	Tyr 80
Thr	Leu	Tyr	Thr	Val 85	Ile	Gly	Tyr	Trp	Pro 90	Leu	Gly	Pro	Val	Val 95	Cys
Asp	Leu	Trp	Leu 100	Ala	Leu	Asp	Tyr	Val 105	Val	Ser	Asn	Ala	Ser 110	Val	Met
Asn	Leu	Leu 115	Ile	Ile	Ser	Phe	Asp 120	Arg	Tyr	Phe	Cys	Val 125	Thr	Lys	Pro
Leu	Thr 130	Tyr	Pro	Val	Lys	Arg 135	Thr	Thr	Lys	Met	Ala 140	Gly	Met	Met	Ile
Ala 145	Ala	Ala	Trp	Val	Leu 150	Ser	Phe	Ile	Leu	Trp 155	Ala	Pro	Ala	Ile	Leu 160
Phe	Trp	Gln	Phe	Ile 165	Val	Gly	Val	Arg	Thr 170	Val	Glu	Asp	Gly	Glu 175	Cys
Tyr	Ile	Gln	Phe 180	Phe	Ser	Asn	Ala	Ala 185	Val	Thr	Phe	Gly	Thr 190	Ala	Ile
Ala	Ala	Phe 195	Tyr	Leu	Pro	Val	Ile 200	Ile	Met	Thr	Val	Leu 205	Tyr	Trp	His
Ile	Ser 210	Arg	Ala	Ser	Lys	Ser 215	Arg	Ile	Lys	Lys	Asp 220	Lys	Lys	Glu	Pro
Val 225	Ala	Asn	Gln	Asp	Pro 230	Val	Ser	Pro	Ser	Leu 235	Val	Gln	Gly	Arg	Ile 240
Val	Lys	Pro	Asn	Asn 245	Asn	Asn	Met	Pro	Ser 250	Ser	Asp	Asp	Gly	Leu 255	Glu
His	Asn	Lys	Ile 260	Gln	Asn	Gly	Lys	Ala 265	Pro	Arg	Asp	Pro	Val 270	Thr	Glu
Asn	Cys	Val 275	Gln	Gly	Glu	Glu	Lys 280	Glu	Ser	Ser	Asn	Asp 285	Ser	Thr	Ser
Val	Ser 290	Ala	Val	Ala	Ser	Asn 295	Met	Arg	Asp	Asp	Glu 300	Ile	Thr	Gln	Asp

Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Pro Ala Glu
 450 455 460
 Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys
 465 470 475 480
 Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe
 485 490 495
 Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr
 500 505 510
 Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
 515 520 525
 Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly
 530 535 540
 Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
 545 550 555 560
 Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly
 565 570 575

Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val
580 585 590

Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile
595 600 605

Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe
610 615 620

Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met
625 630 635 640

Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile
645 650 655

His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val
660 665 670

Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn
675 680 685

Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser
690 695 700

Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln
705 710 715 720

Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly
725 730 735

Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp
740 745 750

Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser
755 760 765

Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu
770 775 780

Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
785 790 795

<210> 45
<211> 2445
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2445)

<400>	45															
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cct Pro	tat Tyr	aag Lys	aca Thr 20	ttt Phe	gaa Glu	gtg Val	gtg Val	ttt Phe 25	att Ile	gtc Val	ctg Leu	gtg Val	gct Ala 30	gga Gly	tcc Ser	96
ctc Leu	agt Ser	ttg Leu 35	gtg Val	acc Thr	att Ile	atc Ile	ggg Gly 40	aac Asn	atc Ile	cta Leu	gtc Val	atg Met 45	gtt Val	tcc Ser	att Ile	144
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser	192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816

aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggg Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 470	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 475	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 480	1440
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly 495	cgc Arg	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggg Gly	gat Asp 540	ctc Leu	tat Tyr	gct Ala	tac Tyr	1632

atg Met 545	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 550	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 555	cca Pro	tac Tyr	gat Asp	gta Val	cca Pro 560	1680
gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 565	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 570	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 575	cac His	1728
tcc Ser	ttt Phe	tca Ser	tct Ser 580	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 585	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 590	acc Thr	att Ile	1776
ggc Gly	ttc Phe	ggc Gly 595	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 600	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 605	gcc Ala	atc Ile	ctc Leu	1824
att Ile	ctc Leu 610	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 615	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 620	aac Asn	gcc Ala	atc Ile	atg Met	1872
ctg Leu 625	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 630	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 635	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 640	1920
acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 645	aag Lys	cat His	gct Ala	gtg Val	atc Ile 650	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 655	cgc Arg	1968
ctg Leu	tgc Cys	ttc Phe	atg Met 660	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 665	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 670	atc Ile	att Ile	2016
agc Ser	gcc Ala	acc Thr 675	atc Ile	cac His	atg Met	cag Gln	gtg Val 680	gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 685	agc Ser	ccc Pro	gag Glu	2064
ggc Gly	gaa Glu 690	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 695	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 700	atg Met	gag Glu	aat Asn	ggc Gly	2112
gtg Val 705	ggc Gly	ggc Gly	aac Asn	ggc Gly	atc Ile 710	ttc Phe	ctg Leu	gtg Val	gcc Ala 715	cca Pro 715	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 720	2160
gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn 725	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 730	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 735	ctg Leu	2208
cac His	cac His	cac His	cag Gln 740	gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 745	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 750	gtg Val	gta Val	2256
gaa Glu	acc Thr	acg Thr 755	ggc Gly	atc Ile	acc Thr	acc Thr	cag Gln 760	gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 765	cta Leu	gct Ala	gac Asp	2304
gag Glu	att Ile 770	cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg 775	ttt Phe	gtc Val	ccc Pro	att Ile	gtg Val 780	gcc Ala	gag Glu	gag Glu	gac Asp	2352
ggc Gly 785	cgc Arg	tat Tyr	tct Ser	gtg Val	gac Asp 790	tac Tyr	tcc Ser	aaa Lys	ttt Phe	ggc Gly 795	aac Asn	acc Thr	att Ile	aaa Lys	gtg Val 800	2400
ccc Pro	aca Thr	cca Pro	ctc Leu	tgc Cys 805	aca Thr	gcc Ala	cgc Arg	cag Gln	ctt Leu 810	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser 815		2445

<210> 46
 <211> 815
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 46

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Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
 20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
 35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
 50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
 65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
 85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
 100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240

Val Lys Pro Asn Asn₂₄₅ Asn Asn Met Pro Ser₂₅₀ Ser Asp Asp Gly Leu₂₅₅ Glu
 His Asn Lys Ile₂₆₀ Gln Asn Gly Lys Ala₂₆₅ Pro Arg Asp Pro Val₂₇₀ Thr Glu
 Asn Cys Val₂₇₅ Gln Gly Glu Glu Lys₂₈₀ Glu Ser Ser Asn Asp₂₈₅ Ser Thr Ser
 Val Ser₂₉₀ Ala Val Ala Ser Asn₂₉₅ Met Arg Asp Asp Glu₃₀₀ Ile Thr Gln Asp
 Glu₃₀₅ Asn Thr Val Ser Thr₃₁₀ Ser Leu Gly His Ser₃₁₅ Lys Asp Glu Asn Ser₃₂₀
 Lys Gln Thr Cys Ile₃₂₅ Arg Ile Gly Thr Lys₃₃₀ Thr Pro Lys Ser Asp₃₃₅ Ser
 Cys Thr Pro Thr₃₄₀ Asn Thr Thr Val Glu₃₄₅ Val Val Gly Ser Ser₃₅₀ Gly Gln
 Asn Gly Asp₃₅₅ Glu Lys Gln Asn Ile₃₆₀ Val Ala Arg Lys Ile₃₆₅ Val Lys Met
 Thr Lys₃₇₀ Gln Pro Ala Lys Lys₃₇₅ Lys Pro Pro Pro Ser₃₈₀ Arg Glu Lys Lys
 Val₃₈₅ Thr Arg Thr Ile Leu₃₉₀ Ala Ile Leu Leu Ala₃₉₅ Phe Ile Ile Thr Trp₄₀₀
 Ala Pro Tyr Asn Val₄₀₅ Met Val Leu Ile Asn₄₁₀ Thr Phe Cys Ala Pro₄₁₅ Cys
 Ile Pro Asn Thr₄₂₀ Val Trp Thr Ile Gly₄₂₅ Tyr Trp Leu Cys Tyr₄₃₀ Ile Asn
 Ser Thr Ile₄₃₅ Asn Pro Ala Cys Tyr₄₄₀ Ala Leu Cys Asn Ala₄₄₅ Thr Phe Lys
 Lys Thr₄₅₀ Phe Lys His Leu Leu₄₅₅ Met Cys His Tyr Lys₄₆₀ Asn Ile Gly Ala
 Thr₄₆₅ Arg Tyr Arg Thr Arg₄₇₀ Glu Arg Arg Ala Arg₄₇₅ Phe Val Ser Lys Lys₄₈₀
 Gly Asn Cys Asn Val₄₈₅ Ala His Lys Asn Ile₄₉₀ Arg Glu Gln Gly Arg₄₉₅ Phe
 Leu Gln Asp Val₅₀₀ Phe Thr Thr Leu Val₅₀₅ Asp Leu Lys Trp Pro₅₁₀ His Thr

Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
 515 520 525
 Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr
 530 535 540
 Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro
 545 550 555 560
 Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His
 565 570 575
 Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile
 580 585 590
 Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu
 595 600 605
 Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met
 610 615 620
 Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu
 625 630 635 640
 Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg
 645 650 655
 Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile
 660 665 670
 Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
 675 680 685
 Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
 690 695 700
 Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
 705 710 715 720
 Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
 725 730 735
 His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
 740 745 750
 Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
 755 760 765
 Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
 770 775 780
 Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val

785 790 117 795 800

Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
805 810 815

<210> 47
<211> 2553
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2553)

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

gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
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act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala 415	cct Pro	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggc Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca	agg	tac	cgt	act	cga	gag	agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	1440

Thr 465	Arg	Tyr	Arg	Thr	Arg 470	Glu	Arg	Arg	Ala	Arg 475	Phe	Val	Ser	Lys	Lys 480	
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 495	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggc Gly	gat Asp 540	ctc Leu	tat Tyr	gct Ala	tac Tyr	1632
atg Met 545	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 550	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 555	cca Pro	tac Tyr	gat Asp	gta Val	cca Pro 560	1680
gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 565	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 570	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 575	cac His	1728
tcc Ser	ttt Phe	tca Ser	tct Ser 580	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 585	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 590	acc Thr	att Ile	1776
ggc Gly	ttc Phe	ggc Gly 595	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 600	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 605	gcc Ala	atc Ile	ctc Leu	1824
att Ile 610	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 615	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 620	aac Asn	gcc Ala	atc Ile	atg Met	1872
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acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 645	aag Lys	cat His	gct Ala	gtg Val	atc Ile 650	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 655	cgc Arg	1968
ctg Leu	tgc Cys	ttc Phe	atg Met 660	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 665	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 670	atc Ile	att Ile	2016
agc Ser	gcc Ala	acc Thr 675	atc Ile	cac His	atg Met	cag Gln	gtg Val 680	gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 685	agc Ser	ccc Pro	gag Glu	2064
ggc Gly	gaa Glu 690	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 695	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 700	atg Met	gag Glu	aat Asn	ggc Gly	2112
gtg Val 705	ggc Gly	ggc Gly	aac Asn	ggc Gly	atc Ile 710	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 715	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 720	2160
gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn 725	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 730	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 735	ctg Leu	2208
cac His	cac His	cac His	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly	gtg Val	gta Val	2256

										120								
740					745					750								
gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	2304		
Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp			
gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	2352		
Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp			
ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	2400		
Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val			
ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	2448		
Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu			
ctg	gat	gcc	ctg	acc	ctc	gcc	tgc	tgc	cgg	ggg	ccc	ctg	cgc	aag	cgc	2496		
Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg			
agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	2544		
Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp			
tcc	ttg	tcc														2553		
Ser	Leu	Ser																

<210> 48
 <211> 851
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Synthetic Construct

 <400> 48

Met	Asn	Asn	Ser	Thr	Asn	Ser	Ser	Asn	Asn	Ser	Leu	Ala	Leu	Thr	Ser
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Pro	Tyr	Lys	Thr	Phe	Glu	Val	Val	Phe	Ile	Val	Leu	Val	Ala	Gly	Ser
			20					25					30		
Leu	Ser	Leu	Val	Thr	Ile	Ile	Gly	Asn	Ile	Leu	Val	Met	Val	Ser	Ile
		35					40					45			
Lys	Val	Asn	Arg	His	Leu	Gln	Thr	Val	Asn	Asn	Tyr	Phe	Leu	Phe	Ser
	50					55					60				
Leu	Ala	Cys	Ala	Asp	Leu	Ile	Ile	Gly	Val	Phe	Ser	Met	Asn	Leu	Tyr
65					70					75				80	
Thr	Leu	Tyr	Thr	Val	Ile	Gly	Tyr	Trp	Pro	Leu	Gly	Pro	Val	Val	Cys
				85					90					95	
Asp	Leu	Trp	Leu	Ala	Leu	Asp	Tyr	Val	Val	Ser	Asn	Ala	Ser	Val	Met
			100					105					110		

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 121 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240

Val Lys Pro Asn Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255

His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270

Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285

Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300

Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320

Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335

Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350

Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365

Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380

Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp

385				390				122 395				400			
Ala	Pro	Tyr	Asn	Val 405	Met	Val	Leu	Ile	Asn 410	Thr	Phe	Cys	Ala	Pro 415	Cys
Ile	Pro	Asn	Thr 420	Val	Trp	Thr	Ile	Gly 425	Tyr	Trp	Leu	Cys	Tyr 430	Ile	Asn
Ser	Thr	Ile 435	Asn	Pro	Ala	Cys	Tyr 440	Ala	Leu	Cys	Asn	Ala 445	Thr	Phe	Lys
Lys	Thr 450	Phe	Lys	His	Leu	Leu 455	Met	Cys	His	Tyr	Lys 460	Asn	Ile	Gly	Ala
Thr 465	Arg	Tyr	Arg	Thr	Arg 470	Glu	Arg	Arg	Ala	Arg 475	Phe	Val	Ser	Lys	Lys 480
Gly	Asn	Cys	Asn	Val 485	Ala	His	Lys	Asn	Ile 490	Arg	Glu	Gln	Gly	Arg 495	Phe
Leu	Gln	Asp	Val 500	Phe	Thr	Thr	Leu	Val 505	Asp	Leu	Lys	Trp	Pro 510	His	Thr
Leu	Leu	Ile 515	Phe	Thr	Met	Ser	Phe 520	Leu	Cys	Ser	Trp	Leu 525	Leu	Phe	Ala
Met	Val 530	Trp	Trp	Leu	Ile	Ala 535	Phe	Ala	His	Gly	Asp 540	Leu	Tyr	Ala	Tyr
Met 545	Glu	Lys	Gly	Ile	Thr 550	Asp	Leu	Ala	Pro	Tyr 555	Pro	Tyr	Asp	Val	Pro 560
Asp	Tyr	Ala	Gly	Glu 565	Gly	Thr	Asn	Val	Pro 570	Cys	Val	Thr	Ser	Ile 575	His
Ser	Phe	Ser	Ser 580	Ala	Phe	Leu	Phe	Ser 585	Ile	Glu	Val	Gln	Val 590	Thr	Ile
Gly	Phe	Gly 595	Gly	Arg	Met	Val	Thr 600	Glu	Glu	Cys	Pro	Leu 605	Ala	Ile	Leu
Ile	Leu 610	Ile	Val	Gln	Asn	Ile 615	Val	Gly	Leu	Met	Ile 620	Asn	Ala	Ile	Met
Leu 625	Gly	Cys	Ile	Phe	Met 630	Lys	Thr	Ala	Gln	Ala 635	His	Arg	Arg	Ala	Glu 640
Thr	Leu	Ile	Phe	Ser 645	Lys	His	Ala	Val	Ile 650	Thr	Leu	Arg	His	Gly 655	Arg
Leu	Cys	Phe	Met 660	Leu	Arg	Val	Gly	Asp 665	Leu	Arg	Lys	Ser	Met 670	Ile	Ile

Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
675 680 685

Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
690 695 700

Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
705 710 715

Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
725 730 735

His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
740 745 750

Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
755 760 765

Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
770 775 780

Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val
785 790 795 800

Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu
805 810 815

Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg
820 825 830

Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp
835 840 845

Ser Leu Ser
850

<210> 49
<211> 2493
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2493)

<400> 49
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Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
1 5 10 15

48

cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc

96

Pro	Tyr	Lys	Thr 20	Phe	Glu	Val	Val	Phe 25	Ile 124	Val	Leu	Val	Ala 30	Gly	Ser	
ctc Leu	agt Ser	ttg Leu 35	gtg Val	acc Thr	att Ile	atc Ile	ggg Gly 40	aac Asn	atc Ile	cta Leu	gtc Val	atg Met 45	gtt Val	tcc Ser	att Ile	144
aaa Lys	gtc Val 50	aac Asn	cgc Arg	cac His	ctc Leu	cag Gln 55	acc Thr	gtc Val	aac Asn	aat Asn	tac Tyr 60	ttt Phe	tta Leu	ttc Phe	agc Ser	192
ttg Leu 65	gcc Ala	tgt Cys	gct Ala	gac Asp	ctt Leu 70	atc Ile	ata Ile	ggg Gly	gtt Val	ttc Phe 75	tcc Ser	atg Met	aac Asn	ttg Leu	tac Tyr 80	240
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggg Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu 130	acc Thr	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly 190	acg Thr	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly 255	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu	ata Ile	acc Thr	cag Gln	gat Asp	912

290				295				125				300				
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggt Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	tgt Leu 390	gct Ala	att Ile	ctg Leu	tgt Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggc Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 470	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 475	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 480	1440
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 495	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggc Gly	gac Asp 540	ctg Leu	gcc Ala	ccc Pro	gga Gly	1632
gag Glu 545	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 550	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 555	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 560	1680
gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 565	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 570	acc Thr	att Ile	ggc Gly	ttc Phe	ggc Gly 575	ggg Gly	1728

cgc Arg	atg Met	gtg Val	aca Thr 580	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 585	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 590	att Ile	gtg Val	1776
cag Gln	aat Asn	atc Ile 595	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 600	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 605	ggc Gly	tgc Cys	atc Ile	1824
ttc Phe 610	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 615	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 620	acc Thr	ctc Leu	atc Ile	ttc Phe	1872
agc Ser 625	aag Lys	cat His	gct Ala	gtg Val	atc Ile 630	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 635	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 640	1920
ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 645	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 650	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 655	atc Ile	1968
cac His	atg Met	cag Gln	gtg Val 660	gtg Val	cgc Arg	aag Lys	acc Thr 665	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 670	gtt Val	gtg Val	2016
cct Pro	ctc Leu	cac His 675	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 680	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 685	ggg Gly	ggg Gly	aac Asn	2064
ggc Gly 690	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 695	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 700	gtc Val	atc Ile	gac Asp	tcc Ser	2112
aac Asn 705	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 710	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 715	ctg Leu	cac His	cac His	cac His	cag Gln 720	2160
gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 725	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 730	gtg Val	gta Val	gaa Glu	acc Thr	acg Thr 735	ggc Gly	2208
atc Ile	acc Thr	acc Thr	cag Gln 740	gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 745	cta Leu	gct Ala	gac Asp	gag Glu	att Ile 750	cta Leu	tgg Trp	2256
ggg Gly	cag Gln	cgc Arg 755	ttt Phe	gtc Val	ccc Pro	att Ile	gtg Val 760	gcc Ala	gag Glu	gag Glu	gac Asp	ggc Gly 765	cgc Arg	tat Tyr	tct Ser	2304
gtg Val 770	gac Asp	tac Tyr	tcc Ser	aaa Lys	ttt Phe	ggt Gly 775	aac Asn	acc Thr	att Ile	aaa Lys	gtg Val 780	ccc Pro	aca Thr	cca Pro	ctc Leu	2352
tgc Cys 785	aca Thr	gcc Ala	cgc Arg	cag Gln	ctt Leu 790	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser 795	ctg Leu	ctg Leu	gat Asp	gcc Ala	ctg Leu 800	2400
acc Thr	ctc Leu	gcc Ala	tgc Ser	tgc Ser 805	cgg Arg	ggg Gly	ccc Pro	ctg Leu	cgc Arg 810	aag Lys	cgc Arg	agt Ser	gtg Val	gct Ala 815	gtg Val	2448
gcg Ala	aag Lys	gcc Ala	aag Lys 820	ccc Pro	aag Lys	ttt Phe	agc Ser	atc Ile 825	tct Ser	cca Pro	gat Asp	tcc Ser	ttg Leu 830	tcc Ser		2493

<210> 50
 <211> 831
 <212> PRT

<213> Artificial sequence

<220>

<223> Synthetic Construct

<400> 50

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser
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Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
50 55 60

Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80

Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
85 90 95

Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
100 105 110

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
115 120 125

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
225 230 235 240

Val Lys Pro Asn Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
245 250 255

His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270
 Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285
 Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300
 Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460
 Thr Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys
 465 470 475 480
 Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe
 485 490 495
 Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr
 500 505 510
 Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
 515 520 525

Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly
 530 535 540
 Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
 545 550 555 560
 Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly
 565 570 575
 Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val
 580 585 590
 Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile
 595 600 605
 Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe
 610 615 620
 Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met
 625 630 635 640
 Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile
 645 650 655
 His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val
 660 665 670
 Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn
 675 680 685
 Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser
 690 695 700
 Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln
 705 710 715 720
 Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly
 725 730 735
 Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp
 740 745 750
 Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser
 755 760 765
 Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu
 770 775 780
 Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu
 785 790 795 800

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

gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggt Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	ttg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggt Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392

132																
aca Thr 465	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 470	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 475	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 480	1440
ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 485	gcc Ala	cac His	aag Lys	aac Asn	att Ile 490	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 495	ttc Phe	1488
ctg Leu	cag Gln	gat Asp	gtg Val 500	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 505	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 510	cac His	act Thr	1536
ctg Leu	ctc Leu	att Ile 515	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 520	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 525	ctc Leu	ttt Phe	gcc Ala	1584
atg Met	gtc Val 530	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 535	ttc Phe	gcc Ala	cac His	ggc Gly	gac Asp 540	ctg Leu	gcc Ala	ccc Pro	gga Gly	1632
gag Glu 545	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 550	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 555	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 560	1680
gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 565	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 570	acc Thr	att Ile	ggc Gly	ttc Phe	ggc Gly 575	ggg Gly	1728
cgc Arg	atg Met	gtg Val	aca Thr 580	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 585	gcc Ala	atc Ile	ctc Leu	att Ile 590	ctc Leu 590	att Ile	gtg Val	1776
cag Gln	aat Asn	atc Ile 595	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 600	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 605	ggc Gly	tgc Cys	atc Ile	1824
ttc Phe	atg Met 610	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 615	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 620	acc Thr	ctc Leu	atc Ile	ttc Phe	1872
agc Ser 625	aag Lys	cat His	gct Ala	gtg Val	atc Ile 630	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 635	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 640	1920
ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 645	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 650	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 655	atc Ile	1968
cac His	atg Met	cag Gln	gtg Val 660	gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 665	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 670	gtt Val	gtg Val	2016
cct Pro	ctc Leu	cac His 675	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 680	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 685	ggc Gly	ggc Gly	aac Asn	2064
ggc Gly	atc Ile 690	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 695	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 700	gtc Val	atc Ile	gac Asp	tcc Ser	2112
aac Asn 705	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 710	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 715	ctg Leu	cac His	cac His	cac His	cag Gln 720	2160
gac Asp	ctg Leu	gag Glu	atc Ile	att Ile 725	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 730	gtg Val	gta Val	gaa Glu	acc Thr	acg Thr 735	ggc Gly	2208
atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	2256

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190
 Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205
 Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220
 Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240
 Val Lys Pro Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255
 His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270
 Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285
 Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300
 Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445

Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460

Thr Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys
 465 470 475 480

Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe
 485 490 495

Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr
 500 505 510

Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala
 515 520 525

Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly
 530 535 540

Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
 545 550 555 560

Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly
 565 570 575

Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val
 580 585 590

Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile
 595 600 605

Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe
 610 615 620

Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met
 625 630 635 640

Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile
 645 650 655

His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val
 660 665 670

Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn
 675 680 685

Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser
 690 695 700

Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln
 705 710 715 720

Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly

725 136 735

730

Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp
740 745 750

Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser
755 760 765

Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu
770 775 780

Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
785 790 795

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cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc 96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser
20 25 30

ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att 144
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile
35 40 45

aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc 192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser
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ttg gcc tgt gct gac ctt atc ata ggt gtt ttc tcc atg aac ttg tac 240
Leu Ala Cys Ala Asp Leu Ile Ile Gly Val Phe Ser Met Asn Leu Tyr
65 70 75 80

acc ctc tac act gtg att ggt tac tgg cct ttg gga cct gtg gtg tgt 288
Thr Leu Tyr Thr Val Ile Gly Tyr Trp Pro Leu Gly Pro Val Val Cys
85 90 95

gac ctt tgg cta gcc ctg gac tat gtg gtc agc aat gcc tca gtt atg 336
Asp Leu Trp Leu Ala Leu Asp Tyr Val Val Ser Asn Ala Ser Val Met
100 105 110

aat ctg ctc atc atc agc ttt gac agg tac ttc tgt gtc aca aaa cct 384
Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
115 120 125

ctg acc tac cca gtc aag cgg acc aca aaa atg gca ggt atg atg att 432
Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
130 135 140

137																480
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145					150					155					160	
ttc	tgg	cag	ttc	att	gta	ggg	gtg	aga	act	gtg	gag	gat	ggg	gag	tgc	528
Phe	Trp	Gln	Phe	Ile	Val	Gly	Val	Arg	Thr	Val	Glu	Asp	Gly	Glu	Cys	
				165					170					175		
tac	att	cag	ttt	ttt	tcc	aat	gct	gct	gtc	acc	ttt	ggg	acg	gct	att	576
Tyr	Ile	Gln	Phe	Phe	Ser	Asn	Ala	Ala	Val	Thr	Phe	Gly	Thr	Ala	Ile	
			180					185					190			
gca	gcc	ttc	tat	ttg	cca	gtg	atc	atc	atg	act	gtg	cta	tat	tgg	cac	624
Ala	Ala	Phe	Tyr	Leu	Pro	Val	Ile	Ile	Met	Thr	Val	Leu	Tyr	Trp	His	
		195					200					205				
ata	tcc	cga	gcc	agc	aag	agc	agg	ata	aag	aag	gac	aag	aag	gag	cct	672
Ile	Ser	Arg	Ala	Ser	Lys	Ser	Arg	Ile	Lys	Lys	Asp	Lys	Lys	Glu	Pro	
	210					215					220					
gtt	gcc	aac	caa	gac	ccc	gtt	tct	cca	agt	ctg	gta	caa	gga	agg	ata	720
Val	Ala	Asn	Gln	Asp	Pro	Val	Ser	Pro	Ser	Leu	Val	Gln	Gly	Arg	Ile	
225					230					235					240	
gtg	aag	cca	aac	aat	aac	aac	atg	ccc	agc	agt	gac	gat	ggc	ctg	gag	768
Val	Lys	Pro	Asn	Asn	Asn	Asn	Met	Pro	Ser	Ser	Asp	Asp	Gly	Leu	Glu	
				245					250					255		
cac	aac	aaa	atc	cag	aat	ggc	aaa	gcc	ccc	agg	gat	cct	gtg	act	gaa	816
His	Asn	Lys	Ile	Gln	Asn	Gly	Lys	Ala	Pro	Arg	Asp	Pro	Val	Thr	Glu	
			260					265					270			
aac	tgt	gtt	cag	gga	gag	gag	aag	gag	agc	tcc	aat	gac	tcc	acc	tca	864
Asn	Cys	Val	Gln	Gly	Glu	Glu	Lys	Glu	Ser	Ser	Asn	Asp	Ser	Thr	Ser	
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gtc	agt	gct	gtt	gcc	tct	aat	atg	aga	gat	gat	gaa	ata	acc	cag	gat	912
Val	Ser	Ala	Val	Ala	Ser	Asn	Met	Arg	Asp	Asp	Glu	Ile	Thr	Gln	Asp	
	290					295					300					
gaa	aac	aca	gtt	tcc	act	tcc	ctg	ggc	cat	tcc	aaa	gat	gag	aac	tct	960
Glu	Asn	Thr	Val	Ser	Thr	Ser	Leu	Gly	His	Ser	Lys	Asp	Glu	Asn	Ser	
305				310						315					320	
aag	caa	aca	tgc	atc	aga	att	ggc	acc	aag	acc	cca	aaa	agt	gac	tca	1008
Lys	Gln	Thr	Cys	Ile	Arg	Ile	Gly	Thr	Lys	Thr	Pro	Lys	Ser	Asp	Ser	
				325					330					335		
tgt	acc	cca	act	aat	acc	acc	gtg	gag	gta	gtg	ggg	tct	tca	ggg	cag	1056
Cys	Thr	Pro	Thr	Asn	Thr	Thr	Val	Glu	Val	Val	Gly	Ser	Ser	Gly	Gln	
			340				345						350			
aat	gga	gat	gaa	aag	cag	aat	att	gta	gcc	cgc	aag	att	gtg	aag	atg	1104
Asn	Gly	Asp	Glu	Lys	Gln	Asn	Ile	Val	Ala	Arg	Lys	Ile	Val	Lys	Met	
		355					360					365				
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152
Thr	Lys	Gln	Pro	Ala	Lys	Lys	Lys	Pro	Pro	Pro	Ser	Arg	Glu	Lys	Lys	
	370					375					380					
gtc	acc	agg	aca	atc	ttg	gct	att	ctg	ttg	gct	ttc	atc	atc	act	tgg	1200
Val	Thr	Arg	Thr	Ile	Leu	Ala	Ile	Leu	Leu	Ala	Phe	Ile	Ile	Thr	Trp	
385					390					395					400	
gcc	cca	tac	aat	gtc	atg	gtg	ctc	att	aac	acc	ttt	tgt	gca	cct	tgc	1248
Ala	Pro	Tyr	Asn	Val	Met	Val	Leu	Ile	Asn	Thr	Phe	Cys	Ala	Pro	Cys	
				405					410					415		
atc	ccc	aac	act	gtg	tgg	aca	att	ggt	tac	tgg	ctt	tgt	tac	atc	aac	1296

Ile	Pro	Asn	Thr 420	Val	Trp	Thr	Ile	Gly 425	Tyr	Trp	Leu	Cys	Tyr 430	Ile	Asn	
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	agg Arg	agg Arg	gcc Ala	cgc Arg 470	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 475	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 480	1440
gcc Ala	cac His	aag Lys	aac Asn	att Ile 485	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 490	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 495	ttc Phe	1488
acc Thr	acg Thr	ctg Leu	gtg Val 500	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 505	cac His	act Thr	ctg Leu	ctc Leu	att Ile 510	ttc Phe	acc Thr	1536
atg Met	tcc Ser	ttc Phe 515	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 520	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 525	tgg Trp	tgg Trp	ctc Leu	1584
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acg Thr 545	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 550	cca Pro	tac Tyr	gat Asp	gta Val	cca Pro 555	gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 560	1680
ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 565	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 570	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 575	gcc Ala	1728
ttc Phe	ctt Leu	ttc Phe	tcc Ser 580	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 585	acc Thr	att Ile	ggc Gly	ttc Phe	ggc Gly 590	ggg Gly	cgc Arg	1776
atg Met	gtg Val	aca Thr 595	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 600	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 605	att Ile	gtg Val	cag Gln	1824
aat Asn	atc Ile 610	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 615	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 620	ggc Gly	tgc Cys	atc Ile	ttc Phe	1872
atg Met 625	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 630	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 635	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 640	1920
aag Lys	cat His	gct Ala	gtg Val	atc Ile 645	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 650	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 655	ctg Leu	1968
cgc Arg	gta Val	ggg Gly	gac Asp 660	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 665	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 670	atc Ile	cac His	2016
atg Met	cag Gln	gtg Val 675	gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 680	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 685	gtt Val	gtg Val	cct Pro	2064
ctc Leu	cac His	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val	ggc Gly	ggc Gly	aac Asn	ggc Gly	2112

690	695	139	700	
atc ttc ctg gtg gcc cca ctc atc atc tac cac gtc atc gac tcc aac				2160
Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn				
705	710	715	720	
agc ccg ctc tac gac ctg gct cct agt gac ctg cac cac cac cag gac				2208
Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp				
	725	730	735	
ctg gag atc att gtc atc ttg gaa ggc gtg gta gaa acc acg ggc atc				2256
Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile				
	740	745	750	
acc acc cag gcc cgc acc tcc tac cta gct gac gag att cta tgg ggg				2304
Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly				
	755	760	765	
cag cgc ttt gtc ccc att gtg gcc gag gag gac ggc cgc tat tct gtg				2352
Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val				
	770	775	780	
gac tac tcc aaa ttt ggt aac acc att aaa gtg ccc aca cca ctc tgc				2400
Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys				
	785	790	795	800
aca gcc cgc cag ctt gat gag gac cgc agt				2430
Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser				
	805	810		

<210> 54
 <211> 810
 <212> PRT
 <213> Artificial sequence
 <220>
 <223> Synthetic Construct
 <400> 54

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

Asn Leu Leu Ile Ile Ser Phe Asp Arg Tyr Phe Cys Val Thr Lys Pro
 115 120 125 140

Leu Thr Tyr Pro Val Lys Arg Thr Thr Lys Met Ala Gly Met Met Ile
 130 135 140

Ala Ala Ala Trp Val Leu Ser Phe Ile Leu Trp Ala Pro Ala Ile Leu
 145 150 155 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175

Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190

Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205

Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220

Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240

Val Lys Pro Asn Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255

His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270

Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285

Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300

Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320

Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335

Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350

Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365

Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380

Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp

385				390				141 395				400			
Ala	Pro	Tyr	Asn	Val 405	Met	Val	Leu	Ile	Asn 410	Thr	Phe	Cys	Ala	Pro 415	Cys
Ile	Pro	Asn	Thr 420	Val	Trp	Thr	Ile	Gly 425	Tyr	Trp	Leu	Cys	Tyr 430	Ile	Asn
Ser	Thr	Ile 435	Asn	Pro	Ala	Cys	Tyr 440	Ala	Leu	Cys	Asn	Ala 445	Thr	Phe	Lys
Lys	Thr 450	Phe	Lys	His	Leu	Leu 455	Met	Cys	His	Tyr	Lys 460	Asn	Ile	Gly	Ala
Thr 465	Arg	Arg	Arg	Ala	Arg 470	Phe	Val	Ser	Lys	Lys 475	Gly	Asn	Cys	Asn	Val 480
Ala	His	Lys	Asn	Ile 485	Arg	Glu	Gln	Gly	Arg 490	Phe	Leu	Gln	Asp	Val 495	Phe
Thr	Thr	Leu	Val 500	Asp	Leu	Lys	Trp	Pro 505	His	Thr	Leu	Leu	Ile 510	Phe	Thr
Met	Ser	Phe 515	Leu	Cys	Ser	Trp	Leu 520	Leu	Phe	Ala	Met	Val 525	Trp	Trp	Leu
Ile	Ala 530	Phe	Ala	His	Gly	Asp 535	Leu	Tyr	Ala	Tyr	Met 540	Glu	Lys	Gly	Ile
Thr 545	Asp	Leu	Ala	Pro	Tyr 550	Pro	Tyr	Asp	Val	Pro 555	Asp	Tyr	Ala	Gly	Glu 560
Gly	Thr	Asn	Val	Pro 565	Cys	Val	Thr	Ser	Ile 570	His	Ser	Phe	Ser	Ser 575	Ala
Phe	Leu	Phe	Ser 580	Ile	Glu	Val	Gln	Val 585	Thr	Ile	Gly	Phe	Gly 590	Gly	Arg
Met	Val	Thr 595	Glu	Glu	Cys	Pro	Leu 600	Ala	Ile	Leu	Ile	Leu 605	Ile	Val	Gln
Asn	Ile 610	Val	Gly	Leu	Met	Ile 615	Asn	Ala	Ile	Met	Leu 620	Gly	Cys	Ile	Phe
Met 625	Lys	Thr	Ala	Gln	Ala 630	His	Arg	Arg	Ala	Glu 635	Thr	Leu	Ile	Phe	Ser 640
Lys	His	Ala	Val	Ile 645	Thr	Leu	Arg	His	Gly 650	Arg	Leu	Cys	Phe	Met 655	Leu
Arg	Val	Gly	Asp 660	Leu	Arg	Lys	Ser	Met 665	Ile	Ile	Ser	Ala	Thr 670	Ile	His

Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
675 680 685

Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
690 695 700

Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
705 710 715 720

Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
725 730 735

Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
740 745 750

Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
755 760 765

Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
770 775 780

Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
785 790 795 800

Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
805 810

<210> 55
<211> 2538
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2538)

<400> 55	
atg aat aac tca aca aac tcc tct aac aat agc ctg gct ctt aca agt	48
Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser	
1 5 10 15	
cct tat aag aca ttt gaa gtg gtg ttt att gtc ctg gtg gct gga tcc	96
Pro Tyr Lys Thr Phe Glu Val Val Phe Ile Val Leu Val Ala Gly Ser	
20 25 30	
ctc agt ttg gtg acc att atc ggg aac atc cta gtc atg gtt tcc att	144
Leu Ser Leu Val Thr Ile Ile Gly Asn Ile Leu Val Met Val Ser Ile	
35 40 45	
aaa gtc aac cgc cac ctc cag acc gtc aac aat tac ttt tta ttc agc	192
Lys Val Asn Arg His Leu Gln Thr Val Asn Asn Tyr Phe Leu Phe Ser	
50 55 60	
ttg gcc tgt gct gac ctt atc ata ggt gtt ttc tcc atg aac ttg tac	240

Leu 65	Ala	Cys	Ala	Asp	Leu 70	Ile	Ile	Gly	Val	143 Phe 75	Ser	Met	Asn	Leu	Tyr 80	
acc Thr	ctc Leu	tac Tyr	act Thr	gtg Val 85	att Ile	ggt Gly	tac Tyr	tgg Trp	cct Pro 90	ttg Leu	gga Gly	cct Pro	gtg Val	gtg Val 95	tgt Cys	288
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser	ggg Gly	cag Gln	1056

144																
340				345				350								
aat	gga	gat	gaa	aag	cag	aat	att	gta	gcc	cgc	aag	att	gtg	aag	atg	1104
Asn	Gly	Asp	Glu	Lys	Gln	Asn	Ile	Val	Ala	Arg	Lys	Ile	Val	Lys	Met	
		355					360					365				
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152
Thr	Lys	Gln	Pro	Ala	Lys	Lys	Lys	Pro	Pro	Pro	Ser	Arg	Glu	Lys	Lys	
	370					375					380					
gtc	acc	agg	aca	atc	ttg	gct	att	ctg	ttg	gct	ttc	atc	atc	act	tgg	1200
Val	Thr	Arg	Thr	Ile	Leu	Ala	Ile	Leu	Leu	Ala	Phe	Ile	Ile	Thr	Trp	
	385				390					395					400	
gcc	cca	tac	aat	gtc	atg	gtg	ctc	att	aac	acc	ttt	tgt	gca	cct	tgc	1248
Ala	Pro	Tyr	Asn	Val	Met	Val	Leu	Ile	Asn	Thr	Phe	Cys	Ala	Pro	Cys	
				405					410					415		
atc	ccc	aac	act	gtg	tgg	aca	att	ggc	tac	tgg	ctt	tgt	tac	atc	aac	1296
Ile	Pro	Asn	Thr	Val	Trp	Thr	Ile	Gly	Tyr	Trp	Leu	Cys	Tyr	Ile	Asn	
			420					425					430			
agc	act	atc	aac	cct	gcc	tgc	tat	gca	ctt	tgc	aat	gcc	acc	ttc	aag	1344
Ser	Thr	Ile	Asn	Pro	Ala	Cys	Tyr	Ala	Leu	Cys	Asn	Ala	Thr	Phe	Lys	
		435					440					445				
aag	acc	ttt	aaa	cac	ctt	ctc	atg	tgt	cat	tat	aag	aac	ata	ggc	gct	1392
Lys	Thr	Phe	Lys	His	Leu	Leu	Met	Cys	His	Tyr	Lys	Asn	Ile	Gly	Ala	
	450					455					460					
aca	agg	agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	1440
Thr	Arg	Arg	Arg	Ala	Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	
	465				470					475					480	
gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	1488
Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	
				485				490						495		
acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	acc	1536
Thr	Thr	Leu	Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	
			500					505					510			
atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	1584
Met	Ser	Phe	Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	
		515					520					525				
atc	gcc	ttc	gcc	cac	ggc	gat	ctc	tat	gct	tac	atg	gag	aaa	ggc	atc	1632
Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Tyr	Ala	Tyr	Met	Glu	Lys	Gly	Ile	
	530					535					540					
acg	gac	ctg	gcc	ccc	tac	cca	tac	gat	gta	cca	gat	tac	gcc	gga	gag	1680
Thr	Asp	Leu	Ala	Pro	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Gly	Glu	
	545				550					555					560	
ggc	acc	aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	1728
Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	
				565					570					575		
ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggc	ttc	ggc	ggg	cgc	1776
Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	
			580					585					590			
atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	1824
Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	
		595					600					605				
aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	1872
Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	
	610					615					620					

atg Met 625	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 630	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 635	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 640	1920
aag Lys	cat His	gct Ala	gtg Val	atc Ile 645	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 650	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 655	ctg Leu	1968
cgc Arg	gta Val	ggg Gly	gac Asp 660	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 665	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 670	atc Ile	cac His	2016
atg Met	cag Gln	gtg Val 675	gtg Val	cgc Arg	aag Lys	acc Thr 680	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 685	gtt Val	gtg Val	cct Pro	2064
ctc Leu	cac His 690	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 695	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 700	ggt Gly	ggt Gly	aac Asn	ggc Gly	2112
atc Ile 705	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 710	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 715	gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn 720	2160
agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp 725	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 730	ctg Leu	cac His	cac His	cac His	cag Gln 735	gac Asp	2208
ctg Leu	gag Glu	atc Ile	att Ile 740	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 745	gtg Val	gta Val	gaa Glu	acc Thr	acg Thr 750	ggc Gly	atc Ile	2256
acc Thr	acc Thr	cag Gln 755	gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 760	cta Leu	gct Ala	gac Asp	gag Glu	att Ile 765	cta Leu	tgg Trp	ggg Gly	2304
cag Gln 770	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile	gtg Val 775	gcc Ala	gag Glu	gag Glu	gac Asp	ggc Gly 780	cgc Arg	tat Tyr	tct Ser	gtg Val	2352
gac Asp 785	tac Tyr	tcc Ser	aaa Lys	ttt Phe	ggc Gly 790	aac Asn	acc Thr	att Ile	aaa Lys	gtg Val 795	ccc Pro	aca Thr	cca Pro	ctc Leu	tgc Cys 800	2400
aca Thr	gcc Ala	cgc Arg	cag Gln	ctt Leu 805	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser 810	ctg Leu	ctg Leu	gat Asp	gcc Ala	ctg Leu 815	acc Thr	2448
ctc Leu	gcc Ala	tcg Ser	tcg Ser 820	cgg Arg	ggg Gly	ccc Pro	ctg Leu	cgc Arg 825	aag Lys	cgc Arg	agt Ser	gtg Val	gct Ala 830	gtg Val	gcg Ala	2496
aag Lys	gcc Ala	aag Lys 835	ccc Pro	aag Lys	ttt Phe	agc Ser	atc Ile 840	tct Ser	cca Pro	gat Asp	tcc Ser	ttg Leu 845	tcc Ser			2538

<210> 56
 <211> 846
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 56

Met Asn Asn Ser Thr Asn Ser Ser Asn Asn Ser Leu Ala Leu Thr Ser

1	5				10				146				15			
Pro	Tyr	Lys	Thr 20	Phe	Glu	Val	Val	Phe 25	Ile	Val	Leu	Val	Ala 30	Gly	Ser	
Leu	Ser	Leu 35	Val	Thr	Ile	Ile	Gly 40	Asn	Ile	Leu	Val	Met 45	Val	Ser	Ile	
Lys	Val 50	Asn	Arg	His	Leu	Gln 55	Thr	Val	Asn	Asn	Tyr 60	Phe	Leu	Phe	Ser	
Leu 65	Ala	Cys	Ala	Asp	Leu 70	Ile	Ile	Gly	Val	Phe 75	Ser	Met	Asn	Leu	Tyr 80	
Thr	Leu	Tyr	Thr	Val 85	Ile	Gly	Tyr	Trp	Pro 90	Leu	Gly	Pro	Val	Val 95	Cys	
Asp	Leu	Trp	Leu 100	Ala	Leu	Asp	Tyr	Val 105	Val	Ser	Asn	Ala	Ser 110	Val	Met	
Asn	Leu	Leu 115	Ile	Ile	Ser	Phe	Asp 120	Arg	Tyr	Phe	Cys	Val 125	Thr	Lys	Pro	
Leu	Thr 130	Tyr	Pro	Val	Lys	Arg 135	Thr	Thr	Lys	Met	Ala 140	Gly	Met	Met	Ile	
Ala 145	Ala	Ala	Trp	Val	Leu 150	Ser	Phe	Ile	Leu	Trp 155	Ala	Pro	Ala	Ile	Leu 160	
Phe	Trp	Gln	Phe	Ile 165	Val	Gly	Val	Arg	Thr 170	Val	Glu	Asp	Gly	Glu 175	Cys	
Tyr	Ile	Gln	Phe 180	Phe	Ser	Asn	Ala	Ala 185	Val	Thr	Phe	Gly	Thr 190	Ala	Ile	
Ala	Ala	Phe 195	Tyr	Leu	Pro	Val	Ile 200	Ile	Met	Thr	Val	Leu 205	Tyr	Trp	His	
Ile	Ser 210	Arg	Ala	Ser	Lys	Ser 215	Arg	Ile	Lys	Lys	Asp 220	Lys	Lys	Glu	Pro	
Val 225	Ala	Asn	Gln	Asp	Pro 230	Val	Ser	Pro	Ser	Leu 235	Val	Gln	Gly	Arg	Ile 240	
Val	Lys	Pro	Asn	Asn 245	Asn	Asn	Met	Pro	Ser 250	Ser	Asp	Asp	Gly	Leu 255	Glu	
His	Asn	Lys	Ile 260	Gln	Asn	Gly	Lys	Ala 265	Pro	Arg	Asp	Pro	Val 270	Thr	Glu	
Asn	Cys	Val 275	Gln	Gly	Glu	Glu	Lys 280	Glu	Ser	Ser	Asn	Asp 285	Ser	Thr	Ser	

Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300
 Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430
 Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
 435 440 445
 Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
 450 455 460
 Thr Arg Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val
 465 470 475 480
 Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe
 485 490 495
 Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr
 500 505 510
 Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu
 515 520 525
 Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile
 530 535 540
 Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu
 545 550 555 560

Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala
 565 570 575
 Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg
 580 585 590
 Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln
 595 600 605
 Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe
 610 615 620
 Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser
 625 630 635 640
 Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu
 645 650 655
 Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His
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 Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
 675 680 685
 Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
 690 695 700
 Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
 705 710 715 720
 Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
 725 730 735
 Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
 740 745 750
 Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
 755 760 765
 Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
 770 775 780
 Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
 785 790 795 800
 Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr
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 Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala
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Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
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 <223> hybrid sequence

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

ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act Thr	aag Lys 370	cag Gln	cct Pro	gca Ala	aaa Lys	aag Lys 375	aag Lys	cct Pro	cct Pro	cct Pro	tcc Ser 380	cgg Arg	gaa Glu	aag Lys	aaa Lys	1152
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	tgt Leu 390	gct Ala	att Ile	ctg Leu	tgt Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400	1200
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys	1248
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggc Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn	1296
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys	1344
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala	1392
aca Thr 465	agg Arg	agg Arg	agg Arg	gcc Ala	cgc Arg 470	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 475	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 480	1440

151																
gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	1488
Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	
				485					490					495		
acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	acc	1536
Thr	Thr	Leu	Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	
			500					505					510			
atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	1584
Met	Ser	Phe	Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	
		515					520					525				
atc	gcc	ttc	gcc	cac	ggc	gac	ctg	gcc	ccc	gga	gag	ggc	acc	aat	gtg	1632
Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Ala	Pro	Gly	Glu	Gly	Thr	Asn	Val	
	530					535					540					
ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	1680
Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	Ser	
545					550					555					560	
atc	gag	gtc	cag	gtg	acc	att	ggc	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	1728
Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	Glu	
				565					570					575		
gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	1776
Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	Gly	
			580					585					590			
ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	1824
Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	
		595					600					605				
cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	1872
Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	Val	
	610					615					620					
atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	1920
Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	
625					630					635					640	
ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	1968
Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	
				645					650					655		
cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	2016
Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	
			660					665					670			
gac	atc	ccc	atg	gag	aat	ggc	gtg	ggc	ggc	aac	ggc	atc	ttc	ctg	gtg	2064
Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	
		675					680					685				
gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	2112
Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	
	690					695					700					
gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	2160
Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	
705					710					715					720	
gtc	atc	tgg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	2208
Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	
				725					730					735		
cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	2256
Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	
			740					745					750			
ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	2304

Protein 152																Position
Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	
ttt Phe	ggt Gly	aac Asn	acc Thr	att Ile	aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro	ctc Leu	tgc Cys	aca Thr	gcc Ala	cgc Arg	cag Gln	2352
ctt Leu	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser	ctg Leu	ctg Leu	gat Asp	gcc Ala	ctg Leu	acc Thr	ctc Leu	gcc Ala	tcg Ser	tcg Ser	2400
cgg Arg	ggg Gly	ccc Pro	ctg Leu	cgc Arg	aag Lys	cgc Arg	agt Ser	gtg Val	gct Ala	gtg Val	gcg Ala	aag Lys	gcc Ala	aag Lys	ccc Pro	2448
aag Lys	ttt Phe	agc Ser	atc Ile	tct Ser	cca Pro	gat Asp	tcc Ser	ttg Leu	tcc Ser							2478

Met 1	Asn	Asn	Ser	Thr 5	Asn	Ser	Ser	Asn	Asn 10	Ser	Leu	Ala	Leu	Thr 15	Ser
Pro	Tyr	Lys	Thr 20	Phe	Glu	Val	Val	Phe 25	Ile	Val	Leu	Val	Ala 30	Gly	Ser
Leu	Ser	Leu 35	Val	Thr	Ile	Ile	Gly 40	Asn	Ile	Leu	Val	Met 45	Val	Ser	Ile
Lys	Val 50	Asn	Arg	His	Leu	Gln 55	Thr	Val	Asn	Asn	Tyr 60	Phe	Leu	Phe	Ser
Leu 65	Ala	Cys	Ala	Asp	Leu 70	Ile	Ile	Gly	Val	Phe 75	Ser	Met	Asn	Leu	Tyr 80
Thr	Leu	Tyr	Thr	Val 85	Ile	Gly	Tyr	Trp	Pro 90	Leu	Gly	Pro	Val	Val 95	Cys
Asp	Leu	Trp	Leu 100	Ala	Leu	Asp	Tyr	Val 105	Val	Ser	Asn	Ala	Ser 110	Val	Met
Asn	Leu	Leu 115	Ile	Ile	Ser	Phe	Asp 120	Arg	Tyr	Phe	Cys	Val 125	Thr	Lys	Pro
Leu	Thr 130	Tyr	Pro	Val	Lys	Arg 135	Thr	Thr	Lys	Met	Ala 140	Gly	Met	Met	Ile
Ala 145	Ala	Ala	Trp	Val	Leu 150	Ser	Phe	Ile	Leu	Trp 155	Ala	Pro	Ala	Ile	Leu 160

Phe Trp Gln Phe Ile Val Gly Val Arg Thr Val Glu Asp Gly Glu Cys
 165 170 175
 Tyr Ile Gln Phe Phe Ser Asn Ala Ala Val Thr Phe Gly Thr Ala Ile
 180 185 190
 Ala Ala Phe Tyr Leu Pro Val Ile Ile Met Thr Val Leu Tyr Trp His
 195 200 205
 Ile Ser Arg Ala Ser Lys Ser Arg Ile Lys Lys Asp Lys Lys Glu Pro
 210 215 220
 Val Ala Asn Gln Asp Pro Val Ser Pro Ser Leu Val Gln Gly Arg Ile
 225 230 235 240
 Val Lys Pro Asn Asn Asn Asn Met Pro Ser Ser Asp Asp Gly Leu Glu
 245 250 255
 His Asn Lys Ile Gln Asn Gly Lys Ala Pro Arg Asp Pro Val Thr Glu
 260 265 270
 Asn Cys Val Gln Gly Glu Glu Lys Glu Ser Ser Asn Asp Ser Thr Ser
 275 280 285
 Val Ser Ala Val Ala Ser Asn Met Arg Asp Asp Glu Ile Thr Gln Asp
 290 295 300
 Glu Asn Thr Val Ser Thr Ser Leu Gly His Ser Lys Asp Glu Asn Ser
 305 310 315 320
 Lys Gln Thr Cys Ile Arg Ile Gly Thr Lys Thr Pro Lys Ser Asp Ser
 325 330 335
 Cys Thr Pro Thr Asn Thr Thr Val Glu Val Val Gly Ser Ser Gly Gln
 340 345 350
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met
 355 360 365
 Thr Lys Gln Pro Ala Lys Lys Lys Pro Pro Pro Ser Arg Glu Lys Lys
 370 375 380
 Val Thr Arg Thr Ile Leu Ala Ile Leu Leu Ala Phe Ile Ile Thr Trp
 385 390 395 400
 Ala Pro Tyr Asn Val Met Val Leu Ile Asn Thr Phe Cys Ala Pro Cys
 405 410 415
 Ile Pro Asn Thr Val Trp Thr Ile Gly Tyr Trp Leu Cys Tyr Ile Asn
 420 425 430

154

Ser Thr Ile Asn Pro Ala Cys Tyr Ala Leu Cys Asn Ala Thr Phe Lys
435 440 445

Lys Thr Phe Lys His Leu Leu Met Cys His Tyr Lys Asn Ile Gly Ala
450 455 460

Thr Arg Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val
465 470 475 480

Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe
485 490 495

Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr
500 505 510

Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu
515 520 525

Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val
530 535 540

Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser
545 550 555 560

Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu
565 570 575

Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly
580 585 590

Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala
595 600 605

Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val
610 615 620

Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp
625 630 635 640

Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val
645 650 655

Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val
660 665 670

Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val
675 680 685

Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr
690 695 700

Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile

156																
gac Asp	ctt Leu	tgg Trp	cta Leu 100	gcc Ala	ctg Leu	gac Asp	tat Tyr	gtg Val 105	gtc Val	agc Ser	aat Asn	gcc Ala	tca Ser 110	gtt Val	atg Met	336
aat Asn	ctg Leu	ctc Leu 115	atc Ile	atc Ile	agc Ser	ttt Phe	gac Asp 120	agg Arg	tac Tyr	ttc Phe	tgt Cys	gtc Val 125	aca Thr	aaa Lys	cct Pro	384
ctg Leu	acc Thr 130	tac Tyr	cca Pro	gtc Val	aag Lys	cgg Arg 135	acc Thr	aca Thr	aaa Lys	atg Met	gca Ala 140	ggg Gly	atg Met	atg Met	att Ile	432
gca Ala 145	gct Ala	gcc Ala	tgg Trp	gtc Val	ctc Leu 150	tct Ser	ttc Phe	atc Ile	ctc Leu	tgg Trp 155	gct Ala	cca Pro	gcc Ala	att Ile	ctc Leu 160	480
ttc Phe	tgg Trp	cag Gln	ttc Phe	att Ile 165	gta Val	ggg Gly	gtg Val	aga Arg	act Thr 170	gtg Val	gag Glu	gat Asp	ggg Gly	gag Glu 175	tgc Cys	528
tac Tyr	att Ile	cag Gln	ttt Phe 180	ttt Phe	tcc Ser	aat Asn	gct Ala	gct Ala 185	gtc Val	acc Thr	ttt Phe	ggg Gly	acg Thr 190	gct Ala	att Ile	576
gca Ala	gcc Ala	ttc Phe 195	tat Tyr	ttg Leu	cca Pro	gtg Val	atc Ile 200	atc Ile	atg Met	act Thr	gtg Val	cta Leu 205	tat Tyr	tgg Trp	cac His	624
ata Ile	tcc Ser 210	cga Arg	gcc Ala	agc Ser	aag Lys	agc Ser 215	agg Arg	ata Ile	aag Lys	aag Lys	gac Asp 220	aag Lys	aag Lys	gag Glu	cct Pro	672
gtt Val 225	gcc Ala	aac Asn	caa Gln	gac Asp	ccc Pro 230	gtt Val	tct Ser	cca Pro	agt Ser	ctg Leu 235	gta Val	caa Gln	gga Gly	agg Arg	ata Ile 240	720
gtg Val	aag Lys	cca Pro	aac Asn	aat Asn 245	aac Asn	aac Asn	atg Met	ccc Pro	agc Ser 250	agt Ser	gac Asp	gat Asp	ggc Gly	ctg Leu 255	gag Glu	768
cac His	aac Asn	aaa Lys	atc Ile 260	cag Gln	aat Asn	ggc Gly	aaa Lys	gcc Ala 265	ccc Pro	agg Arg	gat Asp	cct Pro	gtg Val 270	act Thr	gaa Glu	816
aac Asn	tgt Cys	gtt Val 275	cag Gln	gga Gly	gag Glu	gag Glu	aag Lys 280	gag Glu	agc Ser	tcc Ser	aat Asn	gac Asp 285	tcc Ser	acc Thr	tca Ser	864
gtc Val	agt Ser 290	gct Ala	gtt Val	gcc Ala	tct Ser	aat Asn 295	atg Met	aga Arg	gat Asp	gat Asp	gaa Glu 300	ata Ile	acc Thr	cag Gln	gat Asp	912
gaa Glu 305	aac Asn	aca Thr	gtt Val	tcc Ser	act Thr 310	tcc Ser	ctg Leu	ggc Gly	cat His	tcc Ser 315	aaa Lys	gat Asp	gag Glu	aac Asn	tct Ser 320	960
aag Lys	caa Gln	aca Thr	tgc Cys	atc Ile 325	aga Arg	att Ile	ggc Gly	acc Thr	aag Lys 330	acc Thr	cca Pro	aaa Lys	agt Ser	gac Asp 335	tca Ser	1008
tgt Cys	acc Thr	cca Pro	act Thr 340	aat Asn	acc Thr	acc Thr	gtg Val	gag Glu 345	gta Val	gtg Val	ggg Gly	tct Ser	tca Ser 350	ggg Gly	cag Gln	1056
aat Asn	gga Gly	gat Asp 355	gaa Glu	aag Lys	cag Gln	aat Asn	att Ile 360	gta Val	gcc Ala	cgc Arg	aag Lys	att Ile 365	gtg Val	aag Lys	atg Met	1104
act	aag	cag	cct	gca	aaa	aag	aag	cct	cct	cct	tcc	cgg	gaa	aag	aaa	1152

157															
Thr	Lys 370	Gln	Pro	Ala	Lys	Lys 375	Lys	Pro	Pro	Pro	Ser 380	Arg	Glu	Lys	Lys
gtc Val 385	acc Thr	agg Arg	aca Thr	atc Ile	ttg Leu 390	gct Ala	att Ile	ctg Leu	tgg Leu	gct Ala 395	ttc Phe	atc Ile	atc Ile	act Thr	tgg Trp 400
gcc Ala	cca Pro	tac Tyr	aat Asn	gtc Val 405	atg Met	gtg Val	ctc Leu	att Ile	aac Asn 410	acc Thr	ttt Phe	tgt Cys	gca Ala	cct Pro 415	tgc Cys
atc Ile	ccc Pro	aac Asn	act Thr 420	gtg Val	tgg Trp	aca Thr	att Ile	ggt Gly 425	tac Tyr	tgg Trp	ctt Leu	tgt Cys	tac Tyr 430	atc Ile	aac Asn
agc Ser	act Thr	atc Ile 435	aac Asn	cct Pro	gcc Ala	tgc Cys	tat Tyr 440	gca Ala	ctt Leu	tgc Cys	aat Asn	gcc Ala 445	acc Thr	ttc Phe	aag Lys
aag Lys	acc Thr 450	ttt Phe	aaa Lys	cac His	ctt Leu	ctc Leu 455	atg Met	tgt Cys	cat His	tat Tyr	aag Lys 460	aac Asn	ata Ile	ggc Gly	gct Ala
aca Thr 465	agg Arg	agg Arg	agg Arg	gcc Ala	cgc Arg 470	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 475	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 480
gcc Ala	cac His	aag Lys	aac Asn	att Ile 485	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 490	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 495	ttc Phe
acc Thr	acg Thr	ctg Leu	gtg Val 500	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 505	cac His	act Thr	ctg Leu	ctc Leu	att Ile 510	ttc Phe	acc Thr
atg Met	tcc Ser	ttc Phe 515	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 520	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 525	tgg Trp	tgg Trp	ctc Leu
atc Ile	gcc Ala 530	ttc Phe	gcc Ala	cac His	ggt Gly	gac Asp 535	ctg Leu	gcc Ala	ccc Pro	gga Gly	gag Glu 540	ggc Gly	acc Thr	aat Asn	gtg Val
ccc Pro 545	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 550	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 555	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 560
atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 565	acc Thr	att Ile	ggt Gly	ttc Phe	ggc Gly 570	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 575	gag Glu
gaa Glu	tgt Cys	ccc Pro	ctg Leu 580	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 585	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 590	gtc Val	ggg Gly
ctg Leu	atg Met	atc Ile 595	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 600	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 605	aaa Lys	acg Thr	gcc Ala
cag Gln	gca Ala 610	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 615	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 620	aag Lys	cat His	gct Ala	gtg Val
atc Ile 625	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 630	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 635	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 640
ctc Leu	cga Arg	aag Lys	agc Ser	atg Met	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr	atc Ile	cac His	atg Met	cag Gln	gtg Val	gtg Val

	645	650	158	655	
cgc aag acc acc agc ccc gag ggc gaa gtt gtg cct ctc cac cag gta					2016
Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val					
	660		665	670	
gac atc ccc atg gag aat ggc gtg ggt ggt aac ggc atc ttc ctg gtg					2064
Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val					
	675		680	685	
gcc cca ctc atc atc tac cac gtc atc gac tcc aac agc ccg ctc tac					2112
Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr					
	690		695	700	
gac ctg gct cct agt gac ctg cac cac cac cag gac ctg gag atc att					2160
Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile					
	705		710	715	720
gtc atc ttg gaa ggc gtg gta gaa acc acg ggc atc acc acc cag gcc					2208
Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala					
	725		730	735	
cgc acc tcc tac cta gct gac gag att cta tgg ggg cag cgc ttt gtc					2256
Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val					
	740		745	750	
ccc att gtg gcc gag gag gac ggc cgc tat tct gtg gac tac tcc aaa					2304
Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys					
	755		760	765	
ttt ggt aac acc att aaa gtg ccc aca cca ctc tgc aca gcc cgc cag					2352
Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln					
	770		775	780	
ctt gat gag gac cgc agt					2370
Leu Asp Glu Asp Arg Ser					
	785		790		

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<400> 60

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

Thr Leu Tyr Thr Val₈₅ Ile Gly Tyr Trp Pro₉₀ Leu¹⁵⁹ Gly Pro Val Val₉₅ Cys
 Asp Leu Trp Leu₁₀₀ Ala Leu Asp Tyr Val₁₀₅ Val Ser Asn Ala Ser₁₁₀ Val Met
 Asn Leu Leu₁₁₅ Ile Ile Ser Phe Asp₁₂₀ Arg Tyr Phe Cys Val₁₂₅ Thr Lys Pro
 Leu Thr₁₃₀ Tyr Pro Val Lys Arg₁₃₅ Thr Thr Lys Met Ala₁₄₀ Gly Met Met Ile
 Ala₁₄₅ Ala Ala Trp Val Leu₁₅₀ Ser Phe Ile Leu Trp₁₅₅ Ala Pro Ala Ile Leu₁₆₀
 Phe Trp Gln Phe Ile₁₆₅ Val Gly Val Arg Thr₁₇₀ Val Glu Asp Gly Glu₁₇₅ Cys
 Tyr Ile Gln Phe₁₈₀ Phe Ser Asn Ala₁₈₅ Val Thr Phe Gly Thr₁₉₀ Ala Ile
 Ala Ala Phe₁₉₅ Tyr Leu Pro Val Ile₂₀₀ Ile Met Thr Val Leu₂₀₅ Tyr Trp His
 Ile Ser₂₁₀ Arg Ala Ser Lys Ser₂₁₅ Arg Ile Lys Lys Asp₂₂₀ Lys Lys Glu Pro
 Val₂₂₅ Ala Asn Gln Asp Pro₂₃₀ Val Ser Pro Ser Leu₂₃₅ Val Gln Gly Arg Ile₂₄₀
 Val Lys Pro Asn₂₄₅ Asn Asn Asn Met Pro Ser₂₅₀ Ser Asp Asp Gly Leu₂₅₅ Glu
 His Asn Lys Ile₂₆₀ Gln Asn Gly Lys Ala₂₆₅ Pro Arg Asp Pro Val₂₇₀ Thr Glu
 Asn Cys Val₂₇₅ Gln Gly Glu Glu Lys₂₈₀ Glu Ser Ser Asn Asp₂₈₅ Ser Thr Ser
 Val Ser₂₉₀ Ala Val Ala Ser Asn₂₉₅ Met Arg Asp Asp Glu₃₀₀ Ile Thr Gln Asp
 Glu₃₀₅ Asn Thr Val Ser Thr₃₁₀ Ser Leu Gly His Ser₃₁₅ Lys Asp Glu Asn Ser₃₂₀
 Lys Gln Thr Cys Ile₃₂₅ Arg Ile Gly Thr Lys₃₃₀ Thr Pro Lys Ser Asp₃₃₅ Ser
 Cys Thr Pro Thr₃₄₀ Asn Thr Thr Val Glu₃₄₅ Val Val Gly Ser Ser₃₅₀ Gly Gln
 Asn Gly Asp Glu Lys Gln Asn Ile Val Ala Arg Lys Ile Val Lys Met

	355					360					160			365				
Thr	Lys 370	Gln	Pro	Ala	Lys	Lys 375	Lys	Pro	Pro	Pro	Ser 380	Arg	Glu	Lys	Lys			
Val 385	Thr	Arg	Thr	Ile	Leu 390	Ala	Ile	Leu	Leu	Ala 395	Phe	Ile	Ile	Thr	Trp 400			
Ala	Pro	Tyr	Asn	Val 405	Met	Val	Leu	Ile	Asn 410	Thr	Phe	Cys	Ala	Pro 415	Cys			
Ile	Pro	Asn	Thr 420	Val	Trp	Thr	Ile	Gly 425	Tyr	Trp	Leu	Cys	Tyr 430	Ile	Asn			
Ser	Thr	Ile 435	Asn	Pro	Ala	Cys	Tyr 440	Ala	Leu	Cys	Asn	Ala 445	Thr	Phe	Lys			
Lys	Thr 450	Phe	Lys	His	Leu	Leu 455	Met	Cys	His	Tyr	Lys 460	Asn	Ile	Gly	Ala			
Thr 465	Arg	Arg	Arg	Ala	Arg 470	Phe	Val	Ser	Lys	Lys 475	Gly	Asn	Cys	Asn	Val 480			
Ala	His	Lys	Asn	Ile 485	Arg	Glu	Gln	Gly	Arg 490	Phe	Leu	Gln	Asp	Val 495	Phe			
Thr	Thr	Leu	Val 500	Asp	Leu	Lys	Trp	Pro 505	His	Thr	Leu	Leu	Ile 510	Phe	Thr			
Met	Ser	Phe 515	Leu	Cys	Ser	Trp	Leu 520	Leu	Phe	Ala	Met	Val 525	Trp	Trp	Leu			
Ile	Ala 530	Phe	Ala	His	Gly	Asp 535	Leu	Ala	Pro	Gly	Glu 540	Gly	Thr	Asn	Val			
Pro 545	Cys	Val	Thr	Ser	Ile 550	His	Ser	Phe	Ser	Ser 555	Ala	Phe	Leu	Phe	Ser 560			
Ile	Glu	Val	Gln	Val 565	Thr	Ile	Gly	Phe	Gly 570	Gly	Arg	Met	Val	Thr 575	Glu			
Glu	Cys	Pro	Leu 580	Ala	Ile	Leu	Ile	Leu 585	Ile	Val	Gln	Asn	Ile 590	Val	Gly			
Leu	Met	Ile 595	Asn	Ala	Ile	Met	Leu 600	Gly	Cys	Ile	Phe	Met 605	Lys	Thr	Ala			
Gln	Ala 610	His	Arg	Arg	Ala	Glu 615	Thr	Leu	Ile	Phe	Ser 620	Lys	His	Ala	Val			
Ile 625	Thr	Leu	Arg	His	Gly 630	Arg	Leu	Cys	Phe	Met 635	Leu	Arg	Val	Gly	Asp 640			

Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val
645 650 655

Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val
660 665 670

Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val
675 680 685

Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr
690 695 700

Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile
705 710 715 720

Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala
725 730 735

Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val
740 745 750

Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys
755 760 765

Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln
770 775 780

Leu Asp Glu Asp Arg Ser
785 790

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<211> 2376
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<213> Artificial sequence

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aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro	
20 25 30	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Ile Ala Val Ile	
35 40 45	
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg	192

Val	Phe	Gly	Asn	Val	Leu	Val	Cys	Met	Ala	Val	Ser	Arg	Glu	Lys	Ala	
50						55					60					
ctg	cag	acc	acc	acc	aac	tac	ctg	atc	gtc	agc	ctc	gca	gtg	gcc	gac	240
Leu	Gln	Thr	Thr	Thr	Asn	Tyr	Leu	Ile	Val	Ser	Leu	Ala	Val	Ala	Asp	80
65					70					75						
ctc	ctc	gtc	gcc	aca	ctg	gtc	atg	ccc	tgg	gtt	gtc	tac	ctg	gag	gtg	288
Leu	Leu	Val	Ala	Thr	Leu	Val	Met	Pro	Trp	Val	Val	Tyr	Leu	Glu	Val	95
				85					90					95		
gta	ggt	gag	tgg	aaa	ttc	agc	agg	att	cac	tgt	gac	atc	ttc	gtc	act	336
Val	Gly	Glu	Trp	Lys	Phe	Ser	Arg	Ile	His	Cys	Asp	Ile	Phe	Val	Thr	100
			100					105					110			
ctg	gac	gtc	atg	atg	tgc	acg	gcg	agc	atc	ctg	aac	ttg	tgt	gcc	atc	384
Leu	Asp	Val	Met	Met	Cys	Thr	Ala	Ser	Ile	Leu	Asn	Leu	Cys	Ala	Ile	115
		115					120					125				
agc	atc	gac	agg	tac	aca	gct	gtg	gcc	atg	ccc	atg	ctg	tac	aat	acg	432
Ser	Ile	Asp	Arg	Tyr	Thr	Ala	Val	Ala	Met	Pro	Met	Leu	Tyr	Asn	Thr	130
	130					135					140					
cgc	tac	agc	tcc	aag	cgc	cgg	gtc	acc	gtc	atg	atc	tcc	atc	gtc	tgg	480
Arg	Tyr	Ser	Ser	Lys	Arg	Arg	Val	Thr	Val	Met	Ile	Ser	Ile	Val	Trp	145
					150					155					160	
gtc	ctg	tcc	ttc	acc	atc	tcc	tgc	cca	ctc	ctc	ttc	gga	ctc	aat	aac	528
Val	Leu	Ser	Phe	Thr	Ile	Ser	Cys	Pro	Leu	Leu	Phe	Gly	Leu	Asn	Asn	165
				165					170					175		
gca	gac	cag	aac	gag	tgc	atc	att	gcc	aac	ccg	gcc	ttc	gtg	gtc	tac	576
Ala	Asp	Gln	Asn	Glu	Cys	Ile	Ile	Ala	Asn	Pro	Ala	Phe	Val	Val	Tyr	180
			180					185					190			
tcc	tcc	atc	gtc	tcc	ttc	tac	gtg	ccc	ttc	att	gtc	acc	ctg	ctg	gtc	624
Ser	Ser	Ile	Val	Ser	Phe	Tyr	Val	Pro	Phe	Ile	Val	Thr	Leu	Leu	Val	195
		195					200					205				
tac	atc	aag	atc	tac	att	gtc	ctc	cgc	aga	cgc	cgc	aag	cga	gtc	aac	672
Tyr	Ile	Lys	Ile	Tyr	Ile	Val	Leu	Arg	Arg	Arg	Arg	Lys	Arg	Val	Asn	210
	210					215					220					
acc	aaa	cgc	agc	agc	cga	gct	ttc	agg	gcc	cac	ctg	agg	gct	cca	cta	720
Thr	Lys	Arg	Ser	Ser	Arg	Ala	Phe	Arg	Ala	His	Leu	Arg	Ala	Pro	Leu	225
					230					235					240	
aag	ggc	aac	tgt	act	cac	ccc	gag	gac	atg	aaa	ctc	tgc	acc	gtt	atc	768
Lys	Gly	Asn	Cys	Thr	His	Pro	Glu	Asp	Met	Lys	Leu	Cys	Thr	Val	Ile	245
				245					250					255		
atg	aag	tct	aat	ggg	agt	ttc	cca	gtg	aac	agg	cgg	aga	gtg	gag	gct	816
Met	Lys	Ser	Asn	Gly	Ser	Phe	Pro	Val	Asn	Arg	Arg	Arg	Val	Glu	Ala	260
			260					265					270			
gcc	cgg	cga	gcc	cag	gag	ctg	gag	atg	gag	atg	ctc	tcc	agc	acc	agc	864
Ala	Arg	Arg	Ala	Gln	Glu	Leu	Glu	Met	Glu	Met	Leu	Ser	Ser	Thr	Ser	275
		275					280					285				
cca	ccc	gag	agg	acc	cgg	tac	agc	ccc	atc	cca	ccc	agc	cac	cac	cag	912
Pro	Pro	Glu	Arg	Thr	Arg	Tyr	Ser	Pro	Ile	Pro	Pro	Ser	His	His	Gln	290
	290					295					300					
ctg	act	ctc	ccc	gac	ccg	tcc	cac	cat	ggc	ctc	cac	agc	act	ccc	gac	960
Leu	Thr	Leu	Pro	Asp	Pro	Ser	His	His	Gly	Leu	His	Ser	Thr	Pro	Asp	305
					310					315					320	
agc	ccc	gcc	aaa	cca	gag	aag	aat	ggg	cat	gcc	aaa	gac	cac	ccc	aag	1008
Ser	Pro	Ala	Lys	Pro	Glu	Lys	Asn	Gly	His	Ala	Lys	Asp	His	Pro	Lys	

				325					163					335			
								330									
att	gcc	aag	atc	ttt	gag	atc	cag	acc	atg	ccc	aat	ggc	aaa	acc	cgg		1056
Ile	Ala	Lys	Ile	Phe	Glu	Ile	Gln	Thr	Met	Pro	Asn	Gly	Lys	Thr	Arg		
			340					345					350				
acc	tcc	ctc	aag	acc	atg	agc	cgt	agg	aag	ctc	tcc	cag	cag	aag	gag		1104
Thr	Ser	Leu	Lys	Thr	Met	Ser	Arg	Arg	Lys	Leu	Ser	Gln	Gln	Lys	Glu		
		355					360					365					
aag	aaa	gcc	act	cag	atg	ctc	gcc	att	gtt	ctc	ggc	gtg	ttc	atc	atc		1152
Lys	Lys	Ala	Thr	Gln	Met	Leu	Ala	Ile	Val	Leu	Gly	Val	Phe	Ile	Ile		
	370					375					380						
tgc	tgg	ctg	ccc	ttc	ttc	atc	aca	cac	atc	ctg	aac	ata	cac	tgt	gac		1200
Cys	Trp	Leu	Pro	Phe	Phe	Ile	Thr	His	Ile	Leu	Asn	Ile	His	Cys	Asp		
385					390					395					400		
tgc	aac	atc	ccg	cct	gtc	ctg	tac	agc	gcc	ttc	acg	tgg	ctg	ggc	tat		1248
Cys	Asn	Ile	Pro	Pro	Val	Leu	Tyr	Ser	Ala	Phe	Thr	Trp	Leu	Gly	Tyr		
				405					410					415			
gtc	aac	agc	gcc	gtg	aac	ccc	atc	atc	tac	acc	acc	ttc	aac	att	gag		1296
Val	Asn	Ser	Ala	Val	Asn	Pro	Ile	Ile	Tyr	Thr	Thr	Phe	Asn	Ile	Glu		
			420					425					430				
ttc	cgc	aag	gcc	ttc	ctg	aag	atc	ctc	cac	tgc	tac	cgt	act	cga	gag		1344
Phe	Arg	Lys	Ala	Phe	Leu	Lys	Ile	Leu	His	Cys	Tyr	Arg	Thr	Arg	Glu		
		435					440					445					
agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	gcc	cac		1392
Arg	Arg	Ala	Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His		
	450					455					460						
aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	acc	acg		1440
Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	Thr	Thr		
465				470						475					480		
ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	acc	atg	tcc		1488
Leu	Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser		
			485						490					495			
ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc		1536
Phe	Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala		
			500					505					510				
ttc	gcc	cac	ggc	gat	ctc	tat	gct	tac	atg	gag	aaa	ggc	atc	acg	gac		1584
Phe	Ala	His	Gly	Asp	Leu	Tyr	Ala	Tyr	Met	Glu	Lys	Gly	Ile	Thr	Asp		
		515					520					525					
ctg	gcc	ccc	tac	cca	tac	gat	gta	cca	gat	tac	gcc	gga	gag	ggc	acc		1632
Leu	Ala	Pro	Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Gly	Glu	Gly	Thr		
	530					535					540						
aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt		1680
Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu		
	545				550					555					560		
ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggc	ttc	ggc	ggg	cgc	atg	gtg		1728
Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val		
			565						570					575			
aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc		1776
Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile		
			580					585					590				
gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa		1824
Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys		
		595					600					605					

acg Thr	gcc Ala 610	cag Gln	gca Ala	cat His	cgg Arg	cgg Arg 615	gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 620	ttc Phe	agc Ser	aag Lys	cat His	1872
gct Ala 625	gtg Val	atc Ile	acc Thr	ctg Leu	cgc Arg 630	cat His	ggc Gly	cgc Arg	ctg Leu	tgc Cys 635	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 640	1920
ggg Gly	gac Asp	ctc Leu	cga Arg	aag Lys 645	agc Ser	atg Met	atc Ile	att Ile	agc Ser 650	gcc Ala	acc Thr	atc Ile	cac His	atg Met 655	cag Gln	1968
gtg Val	gtg Val	cgc Arg	aag Lys 660	acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 665	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 670	ctc Leu	cac His	2016
cag Gln	gta Val	gac Asp 675	atc Ile	ccc Pro	atg Met	gag Glu	aat Asn 680	ggc Gly	gtg Val	ggc Gly	ggc Gly	aac Asn 685	ggc Gly	atc Ile	ttc Phe	2064
ctg Leu 690	gtg Val	gcc Ala	cca Pro	ctc Leu	atc Ile	atc Ile 695	tac Tyr	cac His	gtc Val	atc Ile	gac Asp 700	tcc Ser	aac Asn	agc Ser	ccg Pro	2112
ctc Leu 705	tac Tyr	gac Asp	ctg Leu	gct Ala	cct Pro 710	agt Ser	gac Asp	ctg Leu	cac His	cac His 715	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 720	2160
atc Ile	att Ile	gtc Val	atc Ile	ttg Leu 725	gaa Glu	ggc Gly	gtg Val	gta Val	gaa Glu 730	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr 735	acc Thr	2208
cag Gln	gcc Ala	cgc Arg	acc Thr 740	tcc Ser	tac Tyr	cta Leu	gct Ala	gac Asp 745	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly 750	cag Gln	cgc Arg	2256
ttt Phe	gtc Val	ccc Pro 755	att Ile	gtg Val	gcc Ala	gag Glu	gag Glu 760	gac Asp	ggc Gly	cgc Arg	tat Tyr	tct Ser 765	gtg Val	gac Asp	tac Tyr	2304
tcc Ser	aaa Lys 770	ttt Phe	ggc Gly	aac Asn	acc Thr	att Ile 775	aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro 780	ctc Leu	tgc Cys	aca Thr	gcc Ala	2352
cgc Arg 785	cag Gln	ctt Leu	gat Asp	gag Glu	gac Asp 790	cgc Arg	agt Ser									2376

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 <211> 792
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 62

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile

35 40 165 45
 Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60
 Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320

Ser	Pro	Ala	Lys	Pro 325	Glu	Lys	Asn	Gly	His 330	Ala	Lys	Asp	His	Pro 335	Lys
Ile	Ala	Lys	Ile 340	Phe	Glu	Ile	Gln	Thr 345	Met	Pro	Asn	Gly	Lys 350	Thr	Arg
Thr	Ser	Leu 355	Lys	Thr	Met	Ser	Arg 360	Arg	Lys	Leu	Ser	Gln 365	Gln	Lys	Glu
Lys	Lys 370	Ala	Thr	Gln	Met	Leu 375	Ala	Ile	Val	Leu	Gly 380	Val	Phe	Ile	Ile
Cys 385	Trp	Leu	Pro	Phe	Phe 390	Ile	Thr	His	Ile	Leu 395	Asn	Ile	His	Cys	Asp 400
Cys	Asn	Ile	Pro	Pro 405	Val	Leu	Tyr	Ser	Ala 410	Phe	Thr	Trp	Leu	Gly 415	Tyr
Val	Asn	Ser	Ala 420	Val	Asn	Pro	Ile	Ile 425	Tyr	Thr	Thr	Phe	Asn 430	Ile	Glu
Phe	Arg	Lys 435	Ala	Phe	Leu	Lys	Ile 440	Leu	His	Cys	Tyr	Arg 445	Thr	Arg	Glu
Arg	Arg 450	Ala	Arg	Phe	Val	Ser 455	Lys	Lys	Gly	Asn	Cys 460	Asn	Val	Ala	His
Lys 465	Asn	Ile	Arg	Glu	Gln 470	Gly	Arg	Phe	Leu	Gln 475	Asp	Val	Phe	Thr	Thr 480
Leu	Val	Asp	Leu	Lys 485	Trp	Pro	His	Thr	Leu 490	Leu	Ile	Phe	Thr	Met 495	Ser
Phe	Leu	Cys	Ser 500	Trp	Leu	Leu	Phe	Ala 505	Met	Val	Trp	Trp	Leu 510	Ile	Ala
Phe	Ala	His 515	Gly	Asp	Leu	Tyr	Ala 520	Tyr	Met	Glu	Lys	Gly 525	Ile	Thr	Asp
Leu	Ala 530	Pro	Tyr	Pro	Tyr	Asp 535	Val	Pro	Asp	Tyr	Ala 540	Gly	Glu	Gly	Thr
Asn 545	Val	Pro	Cys	Val	Thr 550	Ser	Ile	His	Ser	Phe 555	Ser	Ser	Ala	Phe	Leu 560
Phe	Ser	Ile	Glu	Val 565	Gln	Val	Thr	Ile	Gly 570	Phe	Gly	Gly	Arg	Met 575	Val
Thr	Glu	Glu	Cys 580	Pro	Leu	Ala	Ile	Leu 585	Ile	Leu	Ile	Val	Gln 590	Asn	Ile

Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys
595 600 605

Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His
610 615 620

Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val
625 630 635 640

Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln
645 650 655

Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His
660 665 670

Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe
675 680 685

Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro
690 695 700

Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu
705 710 715 720

Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr
725 730 735

Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg
740 745 750

Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr
755 760 765

Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala
770 775 780

Arg Gln Leu Asp Glu Asp Arg Ser
785 790

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<212> DNA
<213> Artificial sequence

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cac His	tac Tyr	aac Asn 35	tac Tyr	tat Tyr	gcc Ala	aca Thr	ctg Leu 40	ctc Leu	acc Thr	ctg Leu	ctc Leu	atc Ile 45	gct Ala	gtc Val	atc Ile	144
gtc Val	ttc Phe 50	ggc Gly	aac Asn	gtg Val	ctg Leu	gtg Val 55	tgc Cys	atg Met	gct Ala	gtg Val	tcc Ser 60	cgc Arg	gag Glu	aag Lys	gcg Ala	192
ctg Leu 65	cag Gln	acc Thr	acc Thr	acc Thr	aac Asn 70	tac Tyr	ctg Leu	atc Ile	gtc Val	agc Ser 75	ctc Leu	gca Ala	gtg Val	gcc Ala	gac Asp 80	240
ctc Leu	ctc Leu	gtc Val	gcc Ala	aca Thr 85	ctg Leu	gtc Val	atg Met	ccc Pro	tgg Trp 90	gtt Val	gtc Val	tac Tyr	ctg Leu	gag Glu 95	gtg Val	288
gta Val	ggt Gly	gag Glu	tgg Trp 100	aaa Lys	ttc Phe	agc Ser	agg Arg	att Ile 105	cac His	tgt Cys	gac Asp	atc Ile	ttc Phe 110	gtc Val	act Thr	336
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	ttg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864

cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	tac Tyr	cgt Arg 445	act Thr	cga Arg	gag Glu	1344
agg Arg	agg Arg 450	gcc Ala	cgc Arg	ttc Phe	gtg Val	tcc Ser 455	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 460	aac Asn	gtc Val	gcc Ala	cac His	1392
aag Lys 465	aac Asn	att Ile	cga Arg	gag Glu	cag Gln 470	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 475	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 480	1440
ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 485	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 490	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 495	tcc Ser	1488
ttc Phe	ctg Leu	tgc Cys	agc Ser 500	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 505	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 510	atc Ile	gcc Ala	1536
ttc Phe	gcc Ala	cac His 515	ggg Gly	gat Asp	ctc Leu	tat Tyr	gct Ala 520	tac Tyr	atg Met	gag Glu	aaa Lys	ggc Gly 525	atc Ile	acg Thr	gac Asp	1584
ctg Leu	gcc Ala 530	ccc Pro	tac Tyr	cca Pro	tac Tyr	gat Asp 535	gta Val	cca Pro	gat Asp	tac Tyr	gcc Ala 540	gga Gly	gag Glu	ggc Gly	acc Thr	1632
aat Asn 545	gtg Val	ccc Pro	tgc Cys	gtc Val	aca Thr 550	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 555	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 560	1680

170																
ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggg	ttc	ggc	ggg	cgc	atg	gtg	1728
Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	
				565					570					575		
aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc	1776
Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	
				580					585					590		
gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	1824
Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	
				595					600					605		
acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	1872
Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	
				610					615					620		
gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	1920
Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	
				625					630					635		
ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	1968
Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	
				645					650					655		
gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	2016
Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	
				660					665					670		
cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc	atc	ttc	2064
Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	
				675					680					685		
ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	2112
Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	
				690					695					700		
ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	2160
Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	
				705					710					715		
atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	2208
Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	
				725					730					735		
cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	2256
Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	
				740					745					750		
ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	2304
Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	
				755					760					765		
tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	2352
Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	
				770					775					780		
cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	2400
Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	
				785					790					795		
tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	2448
Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	
				805					810					815		
aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc					2484
Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser					
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<400> 64

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110

Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125

Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140

Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160

Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175

Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190

Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205

Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220

Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240

Lys Gly Asn Cys Thr₂₄₅ His Pro Glu Asp Met₂₅₀ Lys Leu Cys Thr Val₂₅₅ Ile
 Met Lys Ser Asn₂₆₀ Gly Ser Phe Pro Val₂₆₅ Asn Arg Arg Arg Val₂₇₀ Glu Ala
 Ala Arg Arg₂₇₅ Ala Gln Glu Leu Glu₂₈₀ Met Glu Met Leu Ser₂₈₅ Ser Thr Ser
 Pro Pro₂₉₀ Glu Arg Thr Arg Tyr₂₉₅ Ser Pro Ile Pro₃₀₀ Ser His His Gln
 Leu Thr Leu Pro Asp Pro₃₁₀ Ser His His Gly Leu₃₁₅ His Ser Thr Pro Asp₃₂₀
 Ser Pro Ala Lys Pro₃₂₅ Glu Lys Asn Gly His₃₃₀ Ala Lys Asp His Pro₃₃₅ Lys
 Ile Ala Lys Ile₃₄₀ Phe Glu Ile Gln Thr₃₄₅ Met Pro Asn Gly Lys₃₅₀ Thr Arg
 Thr Ser Leu₃₅₅ Lys Thr Met Ser Arg₃₆₀ Arg Lys Leu Ser Gln₃₆₅ Gln Lys Glu
 Lys Lys₃₇₀ Ala Thr Gln Met Leu₃₇₅ Ala Ile Val Leu Gly₃₈₀ Val Phe Ile Ile
 Cys Trp Leu Pro Phe Phe₃₉₀ Ile Thr His Ile Leu₃₉₅ Asn Ile His Cys Asp₄₀₀
 Cys Asn Ile Pro Pro₄₀₅ Val Leu Tyr Ser Ala₄₁₀ Phe Thr Trp Leu Gly₄₁₅ Tyr
 Val Asn Ser Ala₄₂₀ Val Asn Pro Ile Ile₄₂₅ Tyr Thr Thr Phe Asn₄₃₀ Ile Glu
 Phe Arg Lys₄₃₅ Ala Phe Leu Lys Ile₄₄₀ Leu His Cys Tyr Arg₄₄₅ Thr Arg Glu
 Arg Arg₄₅₀ Ala Arg Phe Val Ser₄₅₅ Lys Lys Gly Asn Cys₄₆₀ Asn Val Ala His
 Lys Asn Ile Arg Glu Gln₄₇₀ Gly Arg Phe Leu Gln₄₇₅ Asp Val Phe Thr Thr₄₈₀
 Leu Val Asp Leu Lys₄₈₅ Trp Pro His Thr Leu₄₉₀ Leu Ile Phe Thr Met₄₉₅ Ser
 Phe Leu Cys Ser₅₀₀ Trp Leu Leu Phe Ala₅₀₅ Met Val Trp Trp Leu₅₁₀ Ile Ala

Phe Ala His Gly Asp Leu Tyr Ala Tyr Met¹⁷³ Glu Lys Gly Ile Thr Asp
 515 520 525

Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr
 530 535 540

Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu
 545 550 555 560

Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val
 565 570 575

Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile
 580 585 590

Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys
 595 600 605

Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His
 610 615 620

Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val
 625 630 635 640

Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln
 645 650 655

Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His
 660 665 670

Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe
 675 680 685

Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro
 690 695 700

Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu
 705 710 715 720

Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr
 725 730 735

Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg
 740 745 750

Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr
 755 760 765

Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala
 770 775 780

Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala

785 790 795 800

Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala

805 810 815

Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
820 825

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

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln 48

aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc 96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30

cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc
 His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile

35 40 45 144

gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg 192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
50 55 60

ctg	cag	acc	acc	acc	aac	tac	ctg	atc	gtc	agc	ctc	gca	gtg	gcc	gac	240
Leu	Gln	Thr	Thr	Thr	Asn	Tyr	Leu	Ile	Val	Ser	Leu	Ala	Val	Ala	Asp	
65					70					75					80	

ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg 288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
85 90 95

gta ggt gag tgg aaa ttc agc agg att cac tgt gac atc ttc gtc act 336
Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
100 105 110

ctg gac gtc atg atg tgc acg gcg agc atc ctg aac ttg tgt gcc atc 384
Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
115 120 125

agc atc gac agg tac aca gct gtg gcc atg ccc atg ctg tac aat acg 432
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140

cgc tac agc tcc aag cgc cgg gtc acc gtc atg atc tcc atc gtc tgg 480
Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
145 150 155 160

gtc ctg tcc ttc acc atc tcc tgc cca ctc ctc ttc gga ctc aat aac 528
Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
165 170 175

175																576
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	ggt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile 425	atc Ile	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	tac Tyr	cgt Arg 445	act Thr	cga Arg	gag Glu	1344
agg Lys	agg Lys	gcc Ala	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val	gcc Ala	cac Asp	1392

176															
Arg	Arg 450	Ala	Arg	Phe	Val	Ser 455	Lys	Lys	Gly	Asn	Cys 460	Asn	Val	Ala	His
aag Lys 465	aac Asn	att Ile	cga Arg	gag Glu	cag Gln 470	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 475	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 480
ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 485	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 490	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 495	tcc Ser
ttc Phe	ctg Leu	tgc Cys	agc Ser 500	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 505	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 510	atc Ile	gcc Ala
ttc Phe	gcc Ala	cac His 515	ggt Gly	gac Asp	ctg Leu	gcc Ala	ccc Pro 520	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 525	gtg Val	ccc Pro	tgc Cys
gtc Val	aca Thr 530	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 535	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 540	ttc Phe	tcc Ser	atc Ile	gag Glu
gtc Val 545	cag Gln	gtg Val	acc Thr	att Ile	ggt Gly 550	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 555	gtg Val	aca Thr	gag Glu	gaa Glu	tgt Cys 560
ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 565	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 570	aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu 575	atg Met
atc Ile	aac Asn	gcc Ala	atc Ile 580	atg Met	ctg Leu	ggc Gly	tgc Cys	atc Ile 585	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 590	cag Gln	gca Ala
cat His	cgg Arg	cgg Arg 595	gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 600	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 605	gtg Val	atc Ile	acc Thr
ctg Leu	cgc Arg 610	cat His	ggc Gly	cgc Arg	ctg Leu	tgc Cys 615	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 620	ggg Gly	gac Asp	ctc Leu	cga Arg
aag Lys 625	agc Ser	atg Met	atc Ile	att Ile	agc Ser 630	gcc Ala	acc Thr	atc Ile	cac His	atg Met 635	cag Gln	gtg Val	gtg Val	cgc Arg	aag Lys 640
acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 645	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 650	ctc Leu	cac His	cag Gln	gta Val	gac Asp 655	atc Ile
ccc Pro	atg Met	gag Glu	aat Asn 660	ggc Gly	gtg Val	ggt Gly	ggt Gly	aac Asn 665	ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val 670	gcc Ala	cca Pro
ctc Leu	atc Ile	atc Ile 675	tac Tyr	cac His	gtc Val	atc Ile	gac Asp 680	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu 685	tac Tyr	gac Asp	ctg Leu
gct Ala	cct Pro 690	agt Ser	gac Asp	ctg Leu	cac His	cac His 695	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 700	atc Ile	att Ile	gtc Val	atc Ile
ttg Leu 705	gaa Glu	ggc Gly	gtg Val	gta Val 710	gaa Glu 710	acc Thr	acg Thr	ggc Gly	atc Ile 715	acc Thr 715	acc Thr	cag Gln	gcc Ala	cgc Arg	acc Thr 720
tcc Ser	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile

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										730			735							
gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	2256				
Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly					
			740				745						750							
aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	2304				
Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp					
			755				760						765							
gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	ggg	2352				
Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly					
			770				775						780							
ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	2400				
Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe					
			785				790						795			800				
agc	atc	tct	cca	gat	tcc	ttg	tcc									2424				
Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser													
			805																	

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 <212> PRT
 <213> Artificial sequence

<220>
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<400> 66

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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
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His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
100 105 110

Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
115 120 125

Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
130 135 140

Arg Tyr Ser Ser Lys Arg Arg Val Thr Val¹⁷⁸ Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320
 Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335
 Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 350
 Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360 365
 Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380
 Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu

179

420 425 430

Phe Arg Lys₄₃₅ Ala Phe Leu Lys Ile₄₄₀ Leu His Cys Tyr Arg₄₄₅ Thr Arg Glu

Arg Arg₄₅₀ Ala Arg Phe Val Ser₄₅₅ Lys Lys Gly Asn Cys₄₆₀ Asn Val Ala His

Lys₄₆₅ Asn Ile Arg Glu Gln₄₇₀ Gly Arg Phe Leu Gln₄₇₅ Asp Val Phe Thr Thr₄₈₀

Leu Val Asp Leu Lys₄₈₅ Trp Pro His Thr Leu₄₉₀ Leu Ile Phe Thr Met₄₉₅ Ser

Phe Leu Cys Ser₅₀₀ Trp Leu Leu Phe Ala₅₀₅ Met Val Trp Trp Leu₅₁₀ Ile Ala

Phe Ala His₅₁₅ Gly Asp Leu Ala Pro₅₂₀ Gly Glu Gly Thr Asn₅₂₅ Val Pro Cys

Val Thr₅₃₀ Ser Ile His Ser Phe₅₃₅ Ser Ser Ala Phe Leu₅₄₀ Phe Ser Ile Glu

Val₅₄₅ Gln Val Thr Ile Gly₅₅₀ Phe Gly Gly Arg Met₅₅₅ Val Thr Glu Glu Cys₅₆₀

Pro Leu Ala Ile Leu₅₆₅ Ile Leu Ile Val Gln₅₇₀ Asn Ile Val Gly Leu₅₇₅ Met

Ile Asn Ala Ile₅₈₀ Met Leu Gly Cys Ile₅₈₅ Phe Met Lys Thr Ala₅₉₀ Gln Ala

His Arg Arg₅₉₅ Ala Glu Thr Leu Ile₆₀₀ Phe Ser Lys His Ala₆₀₅ Val Ile Thr

Leu Arg₆₁₀ His Gly Arg Leu Cys₆₁₅ Phe Met Leu Arg Val₆₂₀ Gly Asp Leu Arg

Lys₆₂₅ Ser Met Ile Ile Ser₆₃₀ Ala Thr Ile His Met₆₃₅ Gln Val Val Arg Lys₆₄₀

Thr Thr Ser Pro Glu₆₄₅ Gly Glu Val Val Pro₆₅₀ Leu His Gln Val Asp₆₅₅ Ile

Pro Met Glu Asn₆₆₀ Gly Val Gly Gly Asn₆₆₅ Gly Ile Phe Leu Val₆₇₀ Ala Pro

Leu Ile Ile₆₇₅ Tyr His Val Ile Asp₆₈₀ Ser Asn Ser Pro Leu₆₈₅ Tyr Asp Leu

Ala Pro₆₉₀ Ser Asp Leu His His₆₉₅ His Gln Asp Leu Glu₇₀₀ Ile Ile Val Ile

Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr
705 710 715 720

Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile
725 730 735

Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly
740 745 750

Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp
755 760 765

Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly
770 775 780

Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe
785 790 795 800

Ser Ile Ser Pro Asp Ser Leu Ser
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<212> DNA
<213> Artificial sequence

<220>
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<221> CDS
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aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro	
20 25 30	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile	
35 40 45	
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg	192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala	
50 55 60	
ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac	240
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp	
65 70 75 80	
ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg	288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val	
85 90 95	
gta ggt gag tgg aaa ttc agc agg att cac tgt gac atc ttc gtc act	336

Val	Gly	Glu	Trp 100	Lys	Phe	Ser	Arg	Ile 105	His 181	Cys	Asp	Ile	Phe 110	Val	Thr	
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	ttg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly	gtg Val	ttc Phe	atc Ile	atc Ile	1152

370				375				182				380				
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe 390	ttc Phe	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	tac Tyr	cgt Arg 445	act Thr	cga Arg	gag Glu	1344
agg Arg 450	agg Arg	gcc Ala	cgc Arg	ttc Phe	gtg Val	tcc Ser 455	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 460	aac Asn	gtc Val	gcc Ala	cac His	1392
aag Lys 465	aac Asn	att Ile	cga Arg	gag Glu	cag Gln 470	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 475	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 480	1440
ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 485	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 490	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 495	tcc Ser	1488
ttc Phe	ctg Leu	tgc Cys	agc Ser 500	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 505	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 510	atc Ile	gcc Ala	1536
ttc Phe	gcc Ala	cac His 515	ggt Gly	gac Asp	ctg Leu	gcc Ala	ccc Pro 520	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 525	gtg Val	ccc Pro	tgc Cys	1584
gtc Val 530	aca Thr	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 535	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 540	ttc Phe	tcc Ser	atc Ile	gag Glu	1632
gtc Val 545	cag Gln	gtg Val	acc Thr	att Ile	ggt Gly 550	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 555	gtg Val	aca Thr	gag Glu	gaa Glu	tgt Cys 560	1680
ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 565	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 570	aat Asn	atc Ile	gtc Val	ggg Gly 575	ctg Leu 575	atg Met	1728
atc Ile	aac Asn	gcc Ala	atc Ile 580	atg Met	ctg Leu	ggc Gly	tgc Cys	atc Ile 585	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 590	cag Gln	gca Ala	1776
cat His	cgg Arg	cgg Arg 595	gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 600	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 605	gtg Val	atc Ile	acc Thr	1824
ctg Leu 610	cgc Arg	cat His	ggc Gly	cgc Arg	ctg Leu	tgc Cys 615	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 620	ggg Gly	gac Asp	ctc Leu	cga Arg	1872
aag Lys 625	agc Ser	atg Met	atc Ile	att Ile	agc Ser 630	gcc Ala	acc Thr	atc Ile	cac His	atg Met 635	cag Gln	gtg Val	gtg Val	cgc Arg	aag Lys 640	1920
acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 645	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 650	ctc Leu	cac His	cag Gln	gta Val	gac Asp 655	atc Ile	1968

ccc atg gag aat ggc gtg ggt ggt aac ggc atc ttc ctg gtg gcc cca Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro	2016
ctc atc atc tac cac gtc atc gac tcc aac agc ccg ctc tac gac ctg Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu	2064
gct cct agt gac ctg cac cac cac cag gac ctg gag atc att gtc atc Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile	2112
ttg gaa ggc gtg gta gaa acc acg ggc atc acc acc cag gcc cgc acc Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr	2160
tcc tac cta gct gac gag att cta tgg ggg cag cgc ttt gtc ccc att Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile	2208
gtg gcc gag gag gac ggc cgc tat tct gtg gac tac tcc aaa ttt ggt Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly	2256
aac acc att aaa gtg ccc aca cca ctc tgc aca gcc cgc cag ctt gat Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp	2304
gag gac cgc agt Glu Asp Arg Ser	2316

<210> 68
 <211> 772
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 68

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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro 20 25 30
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile 35 40 45
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala 50 55 60
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp 65 70 75 80
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val 85 90 95
Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr

100 105 184 110
 Leu Asp Val₁₁₅ Met Met Cys Thr Ala₁₂₀ Ser Ile Leu Asn₁₂₅ Leu Cys Ala Ile
 Ser Ile₁₃₀ Asp Arg Tyr Thr Ala₁₃₅ Val Ala Met Pro Met₁₄₀ Leu Tyr Asn Thr
 Arg₁₄₅ Tyr Ser Ser Lys Arg₁₅₀ Arg Val Thr Val Met₁₅₅ Ile Ser Ile Val Trp₁₆₀
 Val Leu Ser Phe Thr₁₆₅ Ile Ser Cys Pro Leu₁₇₀ Leu Phe Gly Leu Asn₁₇₅ Asn
 Ala Asp Gln Asn₁₈₀ Glu Cys Ile Ile Ala₁₈₅ Asn Pro Ala Phe Val₁₉₀ Val Tyr
 Ser Ser Ile₁₉₅ Val Ser Phe Tyr Val₂₀₀ Pro Phe Ile Val Thr₂₀₅ Leu Leu Val
 Tyr Ile₂₁₀ Lys Ile Tyr Ile Val₂₁₅ Leu Arg Arg Arg Arg₂₂₀ Lys Arg Val Asn
 Thr₂₂₅ Lys Arg Ser Ser Arg₂₃₀ Ala Phe Arg Ala His₂₃₅ Leu Arg Ala Pro Leu₂₄₀
 Lys Gly Asn Cys Thr₂₄₅ His Pro Glu Asp Met₂₅₀ Lys Leu Cys Thr Val₂₅₅ Ile
 Met Lys Ser Asn₂₆₀ Gly Ser Phe Pro Val₂₆₅ Asn Arg Arg Arg Val₂₇₀ Glu Ala
 Ala Arg Arg₂₇₅ Ala Gln Glu Leu Glu₂₈₀ Met Glu Met Leu Ser₂₈₅ Ser Thr Ser
 Pro Pro₂₉₀ Glu Arg Thr Arg Tyr₂₉₅ Ser Pro Ile Pro Pro₃₀₀ Ser His His Gln
 Leu₃₀₅ Thr Leu Pro Asp Pro₃₁₀ Ser His His Gly Leu₃₁₅ His Ser Thr Pro Asp₃₂₀
 Ser Pro Ala Lys Pro₃₂₅ Glu Lys Asn Gly His₃₃₀ Ala Lys Asp His Pro₃₃₅ Lys
 Ile Ala Lys Ile₃₄₀ Phe Glu Ile Gln Thr₃₄₅ Met Pro Asn Gly Lys₃₅₀ Thr Arg
 Thr Ser Leu₃₅₅ Lys Thr Met Ser Arg₃₆₀ Arg Lys Leu Ser Gln₃₆₅ Gln Lys Glu
 Lys Lys₃₇₀ Ala Thr Gln Met Leu₃₇₅ Ala Ile Val Leu Gly₃₈₀ Val Phe Ile Ile

Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430
 Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys Tyr Arg Thr Arg Glu
 435 440 445
 Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His
 450 455 460
 Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr
 465 470 475 480
 Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser
 485 490 495
 Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala
 500 505 510
 Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys
 515 520 525
 Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu
 530 535 540
 Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys
 545 550 555 560
 Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met
 565 570 575
 Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala
 580 585 590
 His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr
 595 600 605
 Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg
 610 615 620
 Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys
 625 630 635 640
 Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile
 645 650 655

Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro
660 665 670

Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu
675 680 685

Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile
690 695 700

Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr
705 710 715 720

Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile
725 730 735

Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly
740 745 750

Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp
755 760 765

Glu Asp Arg Ser
770

<210> 69
<211> 2403
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2403)

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Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
1 5 10 15

aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc 96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30

cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc 144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
35 40 45

gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg 192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
50 55 60

ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac 240
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
65 70 75 80

ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg 288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val

85				90 ¹⁸⁷								95					
gta	ggt	gag	tgg	aaa	ttc	agc	agg	att	cac	tgt	gac	atc	ttc	gtc	act	336	
Val	Gly	Glu	Trp	Lys	Phe	Ser	Arg	Ile	His	Cys	Asp	Ile	Phe	Val	Thr		
			100					105					110				
ctg	gac	gtc	atg	atg	tgc	acg	gcg	agc	atc	ctg	aac	ttg	tgt	gcc	atc	384	
Leu	Asp	Val	Met	Met	Cys	Thr	Ala	Ser	Ile	Leu	Asn	Leu	Cys	Ala	Ile		
		115					120					125					
agc	atc	gac	agg	tac	aca	gct	gtg	gcc	atg	ccc	atg	ctg	tac	aat	acg	432	
Ser	Ile	Asp	Arg	Tyr	Thr	Ala	Val	Ala	Met	Pro	Met	Leu	Tyr	Asn	Thr		
	130					135					140						
cgc	tac	agc	tcc	aag	cgc	cgg	gtc	acc	gtc	atg	atc	tcc	atc	gtc	tgg	480	
Arg	Tyr	Ser	Ser	Lys	Arg	Arg	Val	Thr	Val	Met	Ile	Ser	Ile	Val	Trp		
					150					155					160		
gtc	ctg	tcc	ttc	acc	atc	tcc	tgc	cca	ctc	ctc	ttc	gga	ctc	aat	aac	528	
Val	Leu	Ser	Phe	Thr	Ile	Ser	Cys	Pro	Leu	Leu	Phe	Gly	Leu	Asn	Asn		
				165					170					175			
gca	gac	cag	aac	gag	tgc	atc	att	gcc	aac	ccg	gcc	ttc	gtg	gtc	tac	576	
Ala	Asp	Gln	Asn	Glu	Cys	Ile	Ile	Ala	Asn	Pro	Ala	Phe	Val	Val	Tyr		
			180					185					190				
tcc	tcc	atc	gtc	tcc	ttc	tac	gtg	ccc	ttc	att	gtc	acc	ctg	ctg	gtc	624	
Ser	Ser	Ile	Val	Ser	Phe	Tyr	Val	Pro	Phe	Ile	Val	Thr	Leu	Leu	Val		
		195					200					205					
tac	atc	aag	atc	tac	att	gtc	ctc	cgc	aga	cgc	cgc	aag	cga	gtc	aac	672	
Tyr	Ile	Lys	Ile	Tyr	Ile	Val	Leu	Arg	Arg	Arg	Arg	Lys	Arg	Val	Asn		
	210					215					220						
acc	aaa	cgc	agc	agc	cga	gct	ttc	agg	gcc	cac	ctg	agg	gct	cca	cta	720	
Thr	Lys	Arg	Ser	Ser	Arg	Ala	Phe	Arg	Ala	His	Leu	Arg	Ala	Pro	Leu		
					230					235					240		
aag	ggc	aac	tgt	act	cac	ccc	gag	gac	atg	aaa	ctc	tgc	acc	gtt	atc	768	
Lys	Gly	Asn	Cys	Thr	His	Pro	Glu	Asp	Met	Lys	Leu	Cys	Thr	Val	Ile		
				245					250					255			
atg	aag	tct	aat	ggg	agt	ttc	cca	gtg	aac	agg	cgg	aga	gtg	gag	gct	816	
Met	Lys	Ser	Asn	Gly	Ser	Phe	Pro	Val	Asn	Arg	Arg	Arg	Val	Glu	Ala		
			260					265					270				
gcc	cgg	cga	gcc	cag	gag	ctg	gag	atg	gag	atg	ctc	tcc	agc	acc	agc	864	
Ala	Arg	Arg	Ala	Gln	Glu	Leu	Glu	Met	Glu	Met	Leu	Ser	Ser	Thr	Ser		
		275					280					285					
cca	ccc	gag	agg	acc	cgg	tac	agc	ccc	atc	cca	ccc	agc	cac	cac	cag	912	
Pro	Pro	Glu	Arg	Thr	Arg	Tyr	Ser	Pro	Ile	Pro	Pro	Ser	His	His	Gln		
	290					295					300						
ctg	act	ctc	ccc	gac	ccg	tcc	cac	cat	ggg	ctc	cac	agc	act	ccc	gac	960	
Leu	Thr	Leu	Pro	Asp	Pro	Ser	His	His	Gly	Leu	His	Ser	Thr	Pro	Asp		
					310					315					320		
agc	ccc	gcc	aaa	cca	gag	aag	aat	ggg	cat	gcc	aaa	gac	cac	ccc	aag	1008	
Ser	Pro	Ala	Lys	Pro	Glu	Lys	Asn	Gly	His	Ala	Lys	Asp	His	Pro	Lys		
				325					330					335			
att	gcc	aag	atc	ttt	gag	atc	cag	acc	atg	ccc	aat	ggc	aaa	acc	cgg	1056	
Ile	Ala	Lys	Ile	Phe	Glu	Ile	Gln	Thr	Met	Pro	Asn	Gly	Lys	Thr	Arg		
			340					345					350				
acc	tcc	ctc	aag	acc	atg	agc	cgt	agg	aag	ctc	tcc	cag	cag	aag	gag	1104	
Thr	Ser	Leu	Lys	Thr	Met	Ser	Arg	Arg	Lys	Leu	Ser	Gln	Gln	Lys	Glu		
		355					360					365					

aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe 390	ttc Phe	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	ctg Leu	gca Ala 445	gag Glu	gac Asp	cct Pro	1344
gca Ala 450	gag Glu	ccc Pro	agg Arg	tac Tyr	cgt Arg	act Thr 455	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 460	cgc Arg	ttc Phe	gtg Val	tcc Ser	1392
aag Lys 465	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 470	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 475	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 480	1440
cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 485	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 490	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 495	cca Pro	1488
cac His	act Thr	ctg Leu	ctc Leu 500	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 505	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 510	ctg Leu	ctc Leu	1536
ttt Phe	gcc Ala	atg Met 515	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 520	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 525	gat Asp	ctc Leu	tat Tyr	1584
gct Ala	tac Tyr 530	atg Met	gag Glu	aaa Lys	ggc Gly	atc Ile 535	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 540	tac Tyr	cca Pro	tac Tyr	gat Asp	1632
gta Val 545	cca Pro	gat Asp	tac Tyr	gcc Ala	gga Gly 550	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 555	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 560	1680
atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 565	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 570	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 575	gtg Val	1728
acc Thr	att Ile	ggt Gly	ttc Phe 580	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 585	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 590	ctg Leu	gcc Ala	1776
atc Ile	ctc Leu	att Ile 595	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 600	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 605	atc Ile	aac Asn	gcc Ala	1824
atc Ile	atg Met 610	ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 615	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 620	gca Ala	cat His	cgg Arg	cgg Arg	1872
gca Ala 625	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 630	agc Ser	aag Lys	cat His	gct Ala	gtg Val 635	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 640	1920

189

ggc cgc ctg tgc ttc atg ctg cgc gta ggg gac ctc cga aag agc atg	1968
Gly Arg Leu Cys Phe 645 Met Leu Arg Val Gly 650 Asp Leu Arg Lys Ser 655 Met	
atc att agc gcc acc atc cac atg cag gtg gtg cgc aag acc acc agc	2016
Ile Ile Ser Ala 660 Thr Ile His Met Gln 665 Val Val Arg Lys Thr 670 Thr Ser	
ccc gag ggc gaa gtt gtg cct ctc cac cag gta gac atc ccc atg gag	2064
Pro Glu Gly 675 Glu Val Val Pro Leu 680 His Gln Val Asp Ile 685 Pro Met Glu	
aat ggc gtg ggt ggt aac ggc atc ttc ctg gtg gcc cca ctc atc atc	2112
Asn Gly 690 Val Gly Gly Asn Gly 695 Ile Phe Leu Val Ala 700 Pro Leu Ile Ile	
tac cac gtc atc gac tcc aac agc ccg ctc tac gac ctg gct cct agt	2160
Tyr 705 His Val Ile Asp Ser 710 Asn Ser Pro Leu Tyr 715 Asp Leu Ala Pro Ser 720	
gac ctg cac cac cac cag gac ctg gag atc att gtc atc ttg gaa ggc	2208
Asp Leu His His His 725 Gln Asp Leu Glu 730 Ile Ile Val Ile Leu 735 Glu Gly	
gtg gta gaa acc acg ggc atc acc acc cag gcc cgc acc tcc tac cta	2256
Val Val Glu 740 Thr Thr Gly Ile Thr 745 Gln Ala Arg Thr 750 Ser Tyr Leu	
gct gac gag att cta tgg ggg cag cgc ttt gtc ccc att gtg gcc gag	2304
Ala Asp Glu 755 Ile Leu Trp Gly Gln 760 Arg Phe Val Pro Ile 765 Val Ala Glu	
gag gac ggc cgc tat tct gtg gac tac tcc aaa ttt ggt aac acc att	2352
Glu Asp Gly 770 Arg Tyr Ser Val 775 Asp Tyr Ser Lys Phe 780 Gly Asn Thr Ile	
aaa gtg ccc aca cca ctc tgc aca gcc cgc cag ctt gat gag gac cgc	2400
Lys Val 785 Pro Thr Pro Leu 790 Cys Thr Ala Arg Gln 795 Leu Asp Glu Asp Arg 800	
agt	2403
Ser	

<210> 70
 <211> 801
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 70

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320
 Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335

Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 350
 Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360 365
 Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380
 Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430
 Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys Leu Ala Glu Asp Pro
 435 440 445
 Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser
 450 455 460
 Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly
 465 470 475 480
 Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro
 485 490 495
 His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu
 500 505 510
 Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr
 515 520 525
 Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp
 530 535 540
 Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser
 545 550 555 560
 Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val
 565 570 575
 Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala
 580 585 590
 Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala
 595 600 605

Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg
 610 615 620
 Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His
 625 630 635 640
 Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met
 645 650 655
 Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser
 660 665 670
 Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu
 675 680 685
 Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile
 690 695 700
 Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser
 705 710 715 720
 Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly
 725 730 735
 Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu
 740 745 750
 Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu
 755 760 765
 Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile
 770 775 780
 Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg
 785 790 795 800

Ser

<210> 71
 <211> 2511
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2511)

<400> 71
 atg gat cca ctg aat ctg tcc tgg tat gat gat gat ctg gag agg cag
 Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
 1 5 10 15

aac Asn	tgg Trp	agc Ser	cgg Arg 20	ccc Pro	ttc Phe	aac Asn	ggg Gly	tca Ser 25	gac Asp	ggg Gly	aag Lys	gcg Ala 30	gac Asp	aga Arg	ccc Pro	96
cac His	tac Tyr	aac Asn 35	tac Tyr	tat Tyr	gcc Ala	aca Thr	ctg Leu 40	ctc Leu	acc Thr	ctg Leu	ctc Leu	atc Ile 45	gct Ala	gtc Val	atc Ile	144
gtc Val	ttc Phe 50	ggc Gly	aac Asn	gtg Val	ctg Leu	gtg Val 55	tgc Cys	atg Met	gct Ala	gtg Val	tcc Ser 60	cgc Arg	gag Glu	aag Lys	gcg Ala	192
ctg Leu 65	cag Gln	acc Thr	acc Thr	acc Thr	aac Asn 70	tac Tyr	ctg Leu	atc Ile	gtc Val	agc Ser 75	ctc Leu	gca Ala	gtg Val	gcc Ala	gac Asp 80	240
ctc Leu	ctc Leu	gtc Val	gcc Ala	aca Thr 85	ctg Leu	gtc Val	atg Met	ccc Pro	tgg Trp 90	gtt Val	gtc Val	tac Tyr	ctg Leu	gag Glu 95	gtg Val	288
gta Val	ggc Gly	gag Glu	tgg Trp 100	aaa Lys	ttc Phe	agc Ser	agg Arg	att Ile 105	cac His	tgt Cys	gac Asp	atc Ile	ttc Phe 110	gtc Val	act Thr	336
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	ttg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864

194																912
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggt Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	ctg Leu	gca Ala 445	gag Glu	gac Asp	cct Pro	1344
gca Ala 450	gag Glu	ccc Pro	agg Arg	tac Tyr	cgt Arg	act Thr 455	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 460	cgc Arg	ttc Phe	gtg Val	tcc Ser	1392
aag Lys 465	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 470	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 475	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 480	1440
cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 485	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 490	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 495	cca Pro	1488
cac His	act Thr	ctg Leu	ctc Leu 500	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 505	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 510	ctg Leu	ctc Leu	1536
ttt Phe	gcc Ala	atg Met 515	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 520	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 525	gat Asp	ctc Leu	tat Tyr	1584
gct Ala	tac Tyr 530	atg Met	gag Glu	aaa Lys	ggc Gly	atc Ile 535	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 540	tac Tyr	cca Pro	tac Tyr	gat Asp	1632
gta Val 545	cca Pro	gat Asp	tac Tyr	gcc Ala	gga Gly 550	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 555	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 560	1680
atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	1728

[illegible]

835

<210> 72
 <211> 837
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 72

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
 1 5 10 15

Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110

Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125

Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140

Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160

Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175

Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190

Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205

Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220

Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His¹⁹⁷ Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320
 Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335
 Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 350
 Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360 365
 Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380
 Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430
 Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys Leu Ala Glu Asp Pro
 435 440 445
 Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser
 450 455 460
 Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly
 465 470 475 480
 Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro
 485 490 495
 His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu

500 505 198 510
 Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr
 515 520 525
 Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp
 530 535 540
 Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser
 545 550 555 560
 Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val
 565 570 575
 Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala
 580 585 590
 Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala
 595 600 605
 Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg
 610 615 620
 Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His
 625 630 635 640
 Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met
 645 650 655
 Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser
 660 665 670
 Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu
 675 680 685
 Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile
 690 695 700
 Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser
 705 710 715 720
 Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly
 725 730 735
 Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu
 740 745 750
 Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu
 755 760 765
 Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile
 770 775 780

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

Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg
805 810 815

Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser
820 825 830

Pro Asp Ser Leu Ser
835

<210> 73
<211> 2451
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2451)

<400> 73
atg gat cca ctg aat ctg tcc tgg tat gat gat gat ctg gag agg cag 48
Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
1 5 10 15
aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc 96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc 144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
35 40 45
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg 192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
50 55 60
ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac 240
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
65 70 75 80
ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg 288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
85 90 95
gta ggt gag tgg aaa ttc agc agg att cac tgt gac atc ttc gtc act 336
Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
100 105 110
ctg gac gtc atg atg tgc acg gcg agc atc ctg aac ttg tgt gcc atc 384
Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
115 120 125
agc atc gac agg tac aca gct gtg gcc atg ccc atg ctg tac aat acg 432
Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
130 135 140
cgc tac agc tcc aag cgc cgg gtc acc gtc atg atc tcc atc gtc tgg 480

Arg 145	Tyr	Ser	Ser	Lys	Arg 150	Arg	Val	Thr	Val	Met 155	Ile	Ser	Ile	Val	Trp 160	
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn	att Ile	gag Glu	1296

201																
420				425				430								
ttc	cgc	aag	gcc	ttc	ctg	aag	atc	ctc	cac	tgc	ctg	gca	gag	gac	cct	1344
Phe	Arg	Lys	Ala	Phe	Leu	Lys	Ile	Leu	His	Cys	Leu	Ala	Glu	Asp	Pro	
		435					440					445				
gca	gag	ccc	agg	tac	cgt	act	cga	gag	agg	agg	gcc	cgc	ttc	gtg	tcc	1392
Ala	Glu	Pro	Arg	Tyr	Arg	Thr	Arg	Glu	Arg	Arg	Ala	Arg	Phe	Val	Ser	
	450					455					460					
aag	aaa	ggc	aac	tgc	aac	gtc	gcc	cac	aag	aac	att	cga	gag	cag	ggc	1440
Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	
465					470					475					480	
cgc	ttc	ctg	cag	gat	gtg	ttc	acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	1488
Arg	Phe	Leu	Gln	Asp	Val	Phe	Thr	Thr	Leu	Val	Asp	Leu	Lys	Trp	Pro	
				485					490					495		
cac	act	ctg	ctc	att	ttc	acc	atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	1536
His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser	Phe	Leu	Cys	Ser	Trp	Leu	Leu	
			500					505					510			
ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	ggt	gac	ctg	gcc	1584
Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Ala	
		515					520					525				
ccc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	1632
Pro	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	
	530					535					540					
tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggt	ttc	1680
Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	
545					550					555					560	
ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	1728
Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	
				565					570					575		
att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	1776
Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	
			580					585					590			
tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	1824
Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	
		595					600					605				
atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	1872
Ile	Phe	Ser	Lys	His	Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	
	610					615					620					
ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	1920
Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	
625					630					635					640	
acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	1968
Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	
				645					650					655		
gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggt	2016
Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	
			660					665					670			
ggt	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	2064
Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	
		675					680					685				
gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	2112
Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	
	690					695					700					

cac His 705	cag Gln	gac Asp	ctg Leu	gag Glu 710	atc Ile	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu 715	ggc Gly	gtg Val	gta Val	gaa Glu	acc Thr 720	2160
acg Thr	ggc Gly	atc Ile	acc Thr 725	acc Thr	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 730	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu 735	att Ile	2208
cta Leu	tgg Trp	ggg Gly	cag Gln 740	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile 745	gtg Val	gcc Ala	gag Glu	gag Glu	gac Asp 750	ggc Gly	cgc Arg	2256
tat Tyr	tct Ser	gtg Val 755	gac Asp	tac Tyr	tcc Ser	aaa Lys	ttt Phe 760	ggg Gly	aac Asn	acc Thr	att Ile	aaa Lys 765	gtg Val	ccc Pro	aca Thr	2304
cca Pro	ctc Leu 770	tgc Cys	aca Thr	gcc Ala	cgc Arg	cag Gln 775	ctt Leu	gat Asp	gag Glu	gac Asp 780	cgc Arg	agt Ser	ctg Leu	ctg Leu	gat Asp	2352
gcc Ala 785	ctg Leu	acc Thr	ctc Leu	gcc Ala	tgc Ser 790	tgc Ser	cgg Arg	ggg Gly	ccc Pro	ctg Leu 795	cgc Arg	aag Lys	cgc Arg	agt Ser	gtg Val 800	2400
gct Ala	gtg Val	gcg Ala	aag Lys	gcc Ala 805	aag Lys	ccc Pro	aag Lys	ttt Phe	agc Ser 810	atc Ile	tct Ser	cca Pro	gat Asp	tcc Ser 815	ttg Leu	2448
tcc Ser																2451

<210> 74
 <211> 817
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 74

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
1 5 10 15

Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr

100 105 203 110
 Leu Asp Val₁₁₅ Met Met Cys Thr Ala₁₂₀ Ser Ile Leu Asn₁₂₅ Leu Cys Ala Ile
 Ser Ile₁₃₀ Asp Arg Tyr Thr Ala₁₃₅ Val Ala Met Pro Met₁₄₀ Leu Tyr Asn Thr
 Arg₁₄₅ Tyr Ser Ser Lys Arg₁₅₀ Arg Val Thr Val Met₁₅₅ Ile Ser Ile Val Trp₁₆₀
 Val Leu Ser Phe Thr₁₆₅ Ile Ser Cys Pro Leu₁₇₀ Leu Phe Gly Leu Asn₁₇₅ Asn
 Ala Asp Gln Asn₁₈₀ Glu Cys Ile Ile Ala₁₈₅ Asn Pro Ala Phe Val₁₉₀ Val Tyr
 Ser Ser Ile₁₉₅ Val Ser Phe Tyr Val₂₀₀ Pro Phe Ile Val Thr₂₀₅ Leu Leu Val
 Tyr Ile₂₁₀ Lys Ile Tyr Ile Val₂₁₅ Leu Arg Arg Arg Arg₂₂₀ Lys Arg Val Asn
 Thr₂₂₅ Lys Arg Ser Ser Arg₂₃₀ Ala Phe Arg Ala His₂₃₅ Leu Arg Ala Pro Leu₂₄₀
 Lys Gly Asn Cys Thr₂₄₅ His Pro Glu Asp Met₂₅₀ Lys Leu Cys Thr Val₂₅₅ Ile
 Met Lys Ser Asn₂₆₀ Gly Ser Phe Pro Val₂₆₅ Asn Arg Arg Arg Val₂₇₀ Glu Ala
 Ala Arg Arg₂₇₅ Ala Gln Glu Leu Glu₂₈₀ Met Glu Met Leu Ser₂₈₅ Ser Thr Ser
 Pro Pro₂₉₀ Glu Arg Thr Arg Tyr₂₉₅ Ser Pro Ile Pro Pro₃₀₀ Ser His His Gln
 Leu₃₀₅ Thr Leu Pro Asp Pro₃₁₀ Ser His His Gly Leu₃₁₅ His Ser Thr Pro Asp₃₂₀
 Ser Pro Ala Lys Pro₃₂₅ Glu Lys Asn Gly His₃₃₀ Ala Lys Asp His Pro₃₃₅ Lys
 Ile Ala Lys Ile₃₄₀ Phe Glu Ile Gln Thr₃₄₅ Met Pro Asn Gly Lys₃₅₀ Thr Arg
 Thr Ser Leu₃₅₅ Lys Thr Met Ser Arg₃₆₀ Arg Lys Leu Ser Gln₃₆₅ Gln Lys Glu
 Lys Lys₃₇₀ Ala Thr Gln Met Leu₃₇₅ Ala Ile Val Leu Gly₃₈₀ Val Phe Ile Ile

Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430
 Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys Leu Ala Glu Asp Pro
 435 440 445
 Ala Glu Pro Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser
 450 455 460
 Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly
 465 470 475 480
 Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro
 485 490 495
 His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu
 500 505 510
 Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala
 515 520 525
 Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
 530 535 540
 Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
 545 550 555 560
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 565 570 575
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 580 585 590
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 595 600 605
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 610 615 620
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 625 630 635 640
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 645 650 655

Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
660 665 670

Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
675 680 685

Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
690 695 700

His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
705 710 715 720

Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
725 730 735

Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
740 745 750

Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
755 760 765

Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp
770 775 780

Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val
785 790 795 800

Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu
805 810 815

Ser

<210> 75
<211> 2343
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2343)

<400> 75	
atg gat cca ctg aat ctg tcc tgg tat gat gat gat ctg gag agg cag	48
Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln	
1 5 10 15	
aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro	
20 25 30	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile	

206																
35				40				45								
gtc	ttc	ggc	aac	gtg	ctg	gtg	tgc	atg	gct	gtg	tcc	cgc	gag	aag	gcg	192
Val	Phe	Gly	Asn	Val	Leu	Val	Cys	Met	Ala	Val	Ser	Arg	Glu	Lys	Ala	
	50					55					60					
ctg	cag	acc	acc	acc	aac	tac	ctg	atc	gtc	agc	ctc	gca	gtg	gcc	gac	240
Leu	Gln	Thr	Thr	Thr	Asn	Tyr	Leu	Ile	Val	Ser	Leu	Ala	Val	Ala	Asp	
65					70					75					80	
ctc	ctc	gtc	gcc	aca	ctg	gtc	atg	ccc	tgg	gtt	gtc	tac	ctg	gag	gtg	288
Leu	Leu	Val	Ala	Thr	Leu	Val	Met	Pro	Trp	Val	Val	Tyr	Leu	Glu	Val	
				85					90					95		
gta	ggt	gag	tgg	aaa	ttc	agc	agg	att	cac	tgt	gac	atc	ttc	gtc	act	336
Val	Gly	Glu	Trp	Lys	Phe	Ser	Arg	Ile	His	Cys	Asp	Ile	Phe	Val	Thr	
			100					105					110			
ctg	gac	gtc	atg	atg	tgc	acg	gcg	agc	atc	ctg	aac	ttg	tgt	gcc	atc	384
Leu	Asp	Val	Met	Met	Cys	Thr	Ala	Ser	Ile	Leu	Asn	Leu	Cys	Ala	Ile	
		115					120					125				
agc	atc	gac	agg	tac	aca	gct	gtg	gcc	atg	ccc	atg	ctg	tac	aat	acg	432
Ser	Ile	Asp	Arg	Tyr	Thr	Ala	Val	Ala	Met	Pro	Met	Leu	Tyr	Asn	Thr	
	130					135					140					
cgc	tac	agc	tcc	aag	cgc	cgg	gtc	acc	gtc	atg	atc	tcc	atc	gtc	tgg	480
Arg	Tyr	Ser	Ser	Lys	Arg	Arg	Val	Thr	Val	Met	Ile	Ser	Ile	Val	Trp	
145					150					155					160	
gtc	ctg	tcc	ttc	acc	atc	tcc	tgc	cca	ctc	ctc	ttc	gga	ctc	aat	aac	528
Val	Leu	Ser	Phe	Thr	Ile	Ser	Cys	Pro	Leu	Leu	Phe	Gly	Leu	Asn	Asn	
				165					170					175		
gca	gac	cag	aac	gag	tgc	atc	att	gcc	aac	ccg	gcc	ttc	gtg	gtc	tac	576
Ala	Asp	Gln	Asn	Glu	Cys	Ile	Ile	Ala	Asn	Pro	Ala	Phe	Val	Val	Tyr	
			180					185					190			
tcc	tcc	atc	gtc	tcc	ttc	tac	gtg	ccc	ttc	att	gtc	acc	ctg	ctg	gtc	624
Ser	Ser	Ile	Val	Ser	Phe	Tyr	Val	Pro	Phe	Ile	Val	Thr	Leu	Leu	Val	
		195					200					205				
tac	atc	aag	atc	tac	att	gtc	ctc	cgc	aga	cgc	cgc	aag	cga	gtc	aac	672
Tyr	Ile	Lys	Ile	Tyr	Ile	Val	Leu	Arg	Arg	Arg	Arg	Lys	Arg	Val	Asn	
	210					215					220					
acc	aaa	cgc	agc	agc	cga	gct	ttc	agg	gcc	cac	ctg	agg	gct	cca	cta	720
Thr	Lys	Arg	Ser	Ser	Arg	Ala	Phe	Arg	Ala	His	Leu	Arg	Ala	Pro	Leu	
225					230					235					240	
aag	ggc	aac	tgt	act	cac	ccc	gag	gac	atg	aaa	ctc	tgc	acc	gtt	atc	768
Lys	Gly	Asn	Cys	Thr	His	Pro	Glu	Asp	Met	Lys	Leu	Cys	Thr	Val	Ile	
				245					250					255		
atg	aag	tct	aat	ggg	agt	ttc	cca	gtg	aac	agg	cgg	aga	gtg	gag	gct	816
Met	Lys	Ser	Asn	Gly	Ser	Phe	Pro	Val	Asn	Arg	Arg	Arg	Val	Glu	Ala	
			260					265					270			
gcc	cgg	cga	gcc	cag	gag	ctg	gag	atg	gag	atg	ctc	tcc	agc	acc	agc	864
Ala	Arg	Arg	Ala	Gln	Glu	Leu	Glu	Met	Glu	Met	Leu	Ser	Ser	Thr	Ser	
		275					280					285				
cca	ccc	gag	agg	acc	cgg	tac	agc	ccc	atc	cca	ccc	agc	cac	cac	cag	912
Pro	Pro	Glu	Arg	Thr	Arg	Tyr	Ser	Pro	Ile	Pro	Pro	Ser	His	His	Gln	
	290					295					300					
ctg	act	ctc	ccc	gac	ccg	tcc	cac	cat	ggc	ctc	cac	agc	act	ccc	gac	960
Leu	Thr	Leu	Pro	Asp	Pro	Ser	His	His	Gly	Leu	His	Ser	Thr	Pro	Asp	
305					310					315					320	

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

208

tgc atc ttc atg aaa acg gcc cag gca cat cgg cgg gca gaa acc ctc	1824
Cys Ile Phe 595 Met Lys Thr Ala 600 Gln Ala His Arg Arg Ala 605 Glu Thr Leu	
atc ttc agc aag cat gct gtg atc acc ctg cgc cat ggc cgc ctg tgc	1872
Ile Phe 610 Ser Lys His Ala 615 Val Ile Thr Leu Arg His 620 Gly Arg Leu Cys	
ttc atg ctg cgc gta ggg gac ctc cga aag agc atg atc att agc gcc	1920
Phe Met 625 Leu Arg Val 630 Gly Asp Leu Arg Lys Ser 635 Met Ile Ile Ser Ala 640	
acc atc cac atg cag gtg gtg cgc aag acc acc agc ccc gag ggc gaa	1968
Thr Ile 645 His Met Gln Val Val Arg Lys Thr 650 Ser Pro Glu Gly 655 Glu	
gtt gtg cct ctc cac cag gta gac atc ccc atg gag aat ggc gtg ggt	2016
Val Val 660 Pro Leu His Gln Val Asp 665 Ile Pro Met Glu Asn 670 Gly Val Gly	
ggt aac ggc atc ttc ctg gtg gcc cca ctc atc atc tac cac gtc atc	2064
Gly Asn 675 Gly Ile Phe Leu Val 680 Ala Pro Leu Ile Ile Tyr 685 His Val Ile	
gac tcc aac agc ccg ctc tac gac ctg gct cct agt gac ctg cac cac	2112
Asp Ser 690 Asn Ser Pro Leu Tyr 695 Asp Leu Ala Pro Ser 700 Asp Leu His His	
cac cag gac ctg gag atc att gtc atc ttg gaa ggc gtg gta gaa acc	2160
His Gln 705 Asp Leu Glu 710 Ile Ile Val Ile Leu 715 Glu Gly Val Val Glu Thr 720	
acg ggc atc acc acc cag gcc cgc acc tcc tac cta gct gac gag att	2208
Thr Gly 725 Ile Thr Thr Gln Ala Arg Thr Ser 730 Tyr Leu Ala Asp 735 Glu Ile	
cta tgg ggg cag cgc ttt gtc ccc att gtg gcc gag gag gac ggc cgc	2256
Leu Trp 740 Gly Gln Arg Phe Val Pro 745 Ile Val Ala Glu Glu 750 Asp Gly Arg	
tat tct gtg gac tac tcc aaa ttt ggt aac acc att aaa gtg ccc aca	2304
Tyr Ser 755 Val Asp Tyr Ser Lys Phe 760 Gly Asn Thr Ile Lys 765 Val Pro Thr	
cca ctc tgc aca gcc cgc cag ctt gat gag gac cgc agt	2343
Pro Leu 770 Cys Thr Ala Arg Gln 775 Leu Asp Glu Asp Arg 780 Ser	

<210> 76
 <211> 781
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 76

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
 1 5 10 15

Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60
 Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320

Ser Pro Ala Lys Pro₃₂₅ Glu Lys Asn Gly His₃₃₀ Ala Lys Asp His Pro₃₃₅ Lys
 Ile Ala Lys Ile₃₄₀ Phe Glu Ile Gln Thr₃₄₅ Met Pro Asn Gly Lys₃₅₀ Thr Arg
 Thr Ser Leu₃₅₅ Lys Thr Met Ser Arg₃₆₀ Arg Lys Leu Ser Gln₃₆₅ Gln Lys Glu
 Lys Lys₃₇₀ Ala Thr Gln Met Leu₃₇₅ Ala Ile Val Leu Gly₃₈₀ Val Phe Ile Ile
 Cys₃₈₅ Trp Leu Pro Phe Phe₃₉₀ Ile Thr His Ile Leu₃₉₅ Asn Ile His Cys Asp₄₀₀
 Cys Asn Ile Pro Pro₄₀₅ Val Leu Tyr Ser Ala₄₁₀ Phe Thr Trp Leu Gly₄₁₅ Tyr
 Val Asn Ser Ala₄₂₀ Val Asn Pro Ile Ile₄₂₅ Tyr Thr Thr Phe Asn₄₃₀ Ile Glu
 Phe Arg Lys₄₃₅ Ala Phe Leu Lys Ile₄₄₀ Leu His Cys Leu Ala₄₄₅ Glu Asp Pro
 Ala Glu₄₅₀ Pro Arg Tyr Arg Thr₄₅₅ Arg Glu Arg Arg Ala₄₆₀ Arg Phe Val Ser
 Lys₄₆₅ Lys Gly Asn Cys Asn₄₇₀ Val Ala His Lys Asn₄₇₅ Ile Arg Glu Gln Gly₄₈₀
 Arg Phe Leu Gln Asp₄₈₅ Val Phe Thr Thr Leu₄₉₀ Val Asp Leu Lys Trp₄₉₅ Pro
 His Thr Leu Leu₅₀₀ Ile Phe Thr Met Ser₅₀₅ Phe Leu Cys Ser Trp₅₁₀ Leu Leu
 Phe Ala Met₅₁₅ Val Trp Trp Leu Ile₅₂₀ Ala Phe Ala His Gly₅₂₅ Asp Leu Ala
 Pro Gly₅₃₀ Glu Gly Thr Asn Val₅₃₅ Pro Cys Val Thr Ser₅₄₀ Ile His Ser Phe
 Ser₅₄₅ Ser Ala Phe Leu Phe₅₅₀ Ser Ile Glu Val Gln₅₅₅ Val Thr Ile Gly Phe₅₆₀
 Gly Gly Arg Met Val₅₆₅ Thr Glu Glu Cys Pro₅₇₀ Leu Ala Ile Leu Ile₅₇₅ Leu
 Ile Val Gln Asn₅₈₀ Ile Val Gly Leu Met₅₈₅ Ile Asn Ala Ile Met₅₉₀ Leu Gly

211

Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
595 600 605

Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
610 615 620

Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
625 630 635 640

Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
645 650 655

Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
660 665 670

Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
675 680 685

Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
690 695 700

His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
705 710 715 720

Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
725 730 735

Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
740 745 750

Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
755 760 765

Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
770 775 780

<210> 77
<211> 2403
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2403)

<400> 77
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Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
1 5 10 15

48

aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30

96

cac His	tac Tyr	aac Asn 35	tac Tyr	tat Tyr	gcc Ala	aca Thr	ctg Leu 40	ctc Leu	acc Thr	ctg Leu	ctc Leu	atc Ile 45	gct Ala	gtc Val	atc Ile	144
gtc Val	ttc Phe 50	ggc Gly	aac Asn	gtg Val	ctg Leu	gtg Val 55	tgc Cys	atg Met	gct Ala	gtg Val	tcc Ser 60	cgc Arg	gag Glu	aag Lys	gcg Ala	192
ctg Leu 65	cag Gln	acc Thr	acc Thr	acc Thr	aac Asn 70	tac Tyr	ctg Leu	atc Ile	gtc Val	agc Ser 75	ctc Leu	gca Ala	gtg Val	gcc Ala	gac Asp 80	240
ctc Leu	ctc Leu	gtc Val	gcc Ala	aca Thr 85	ctg Leu	gtc Val	atg Met	ccc Pro	tgg Trp 90	gtt Val	gtc Val	tac Tyr	ctg Leu	gag Glu 95	gtg Val	288
gta Val	ggt Gly	gag Glu	tgg Trp 100	aaa Lys	ttc Phe	agc Ser	agg Arg	att Ile 105	cac His	tgt Cys	gac Asp	atc Ile	ttc Phe 110	gtc Val	act Thr	336
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	ttg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe 190	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912

213																960
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggt Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe 390	ttc Phe	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	cat His	tat Tyr 445	aag Lys	aac Asn	ata Ile	1344
ggc Gly	gct Ala 450	aca Thr	agg Arg	tac Tyr	cgt Arg	act Thr 455	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 460	cgc Arg	ttc Phe	gtg Val	tcc Ser	1392
aag Lys 465	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 470	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 475	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 480	1440
cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 485	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 490	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 495	cca Pro	1488
cac His	act Thr	ctg Leu	ctc Leu 500	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 505	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 510	ctg Leu	ctc Leu	1536
ttt Phe	gcc Ala	atg Met 515	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 520	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 525	gat Asp	ctc Leu	tat Tyr	1584
gct Ala	tac Tyr 530	atg Met	gag Glu	aaa Lys	ggc Gly	atc Ile 535	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 540	tac Tyr	cca Pro	tac Tyr	gat Asp	1632
gta Val 545	cca Pro	gat Asp	tac Tyr	gcc Ala	gga Gly 550	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 555	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 560	1680
atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 565	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 570	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 575	gtg Val	1728
acc	att	ggt	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	1776

Thr	Ile	Gly	Phe 580	Gly	Gly	Arg	Met	Val 585	214 Thr	Glu	Glu	Cys	Pro 590	Leu	Ala		
atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc		1824
Ile	Leu	Ile 595	Leu	Ile	Val	Gln	Asn 600	Ile	Val	Gly	Leu	Met 605	Ile	Asn	Ala		
atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg		1872
Ile	Met 610	Leu	Gly	Cys	Ile	Phe 615	Met	Lys	Thr	Ala	Gln 620	Ala	His	Arg	Arg		
gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	cgc	cat		1920
Ala 625	Glu	Thr	Leu	Ile	Phe 630	Ser	Lys	His	Ala	Val 635	Ile	Thr	Leu	Arg	His 640		
ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	agc	atg		1968
Gly	Arg	Leu	Cys	Phe 645	Met	Leu	Arg	Val	Gly 650	Asp	Leu	Arg	Lys	Ser 655	Met		
atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc		2016
Ile	Ile	Ser	Ala 660	Thr	Ile	His	Met	Gln 665	Val	Val	Arg	Lys	Thr 670	Thr	Ser		
ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag		2064
Pro	Glu	Gly 675	Glu	Val	Val	Pro	Leu 680	His	Gln	Val	Asp	Ile 685	Pro	Met	Glu		
aat	ggc	gtg	ggt	ggt	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc		2112
Asn	Gly 690	Val	Gly	Gly	Asn	Gly 695	Ile	Phe	Leu	Val	Ala 700	Pro	Leu	Ile	Ile		
tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt		2160
Tyr 705	His	Val	Ile	Asp	Ser 710	Asn	Ser	Pro	Leu	Tyr 715	Asp	Leu	Ala	Pro	Ser 720		
gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc		2208
Asp	Leu	His	His	His 725	Gln	Asp	Leu	Glu	Ile 730	Ile	Val	Ile	Leu	Glu 735	Gly		
gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta		2256
Val	Val	Glu	Thr 740	Thr	Gly	Ile	Thr	Thr 745	Gln	Ala	Arg	Thr	Ser 750	Tyr	Leu		
gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag		2304
Ala	Asp	Glu 755	Ile	Leu	Trp	Gly	Gln 760	Arg	Phe	Val	Pro	Ile 765	Val	Ala	Glu		
gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggt	aac	acc	att		2352
Glu	Asp 770	Gly	Arg	Tyr	Ser	Val 775	Asp	Tyr	Ser	Lys	Phe 780	Gly	Asn	Thr	Ile		
aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc		2400
Lys 785	Val	Pro	Thr	Pro	Leu 790	Cys	Thr	Ala	Arg	Gln 795	Leu	Asp	Glu	Asp	Arg 800		
agt Ser																	2403

<210> 78
 <211> 801
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Synthetic Construct

 <400> 78

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
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 Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
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 His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45
 Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60
 Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270

Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285 216

Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300

Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320

Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335

Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 350

Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360 365

Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380

Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400

Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415

Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430

Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys His Tyr Lys Asn Ile
 435 440 445

Gly Ala Thr Arg Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser
 450 455 460

Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly
 465 470 475 480

Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro
 485 490 495

His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu
 500 505 510

Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr
 515 520 525

Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp
 530 535 540

Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser

<212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2511)

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

Thr 225	Lys	Arg	Ser	Ser	Arg 230	Ala	Phe	Arg	Ala 219 His 235	Leu	Arg	Ala	Pro	Leu 240		
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggc Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	cat His	tat Tyr 445	aag Lys	aac Asn	ata Ile	1344
ggc Gly	gct Ala 450	aca Thr	agg Arg	tac Tyr	cgt Arg	act Thr 455	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 460	cgc Arg	ttc Phe	gtg Val	tcc Ser	1392
aag Lys 465	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 470	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 475	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 480	1440
cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 485	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 490	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 495	cca Pro	1488
cac His	act Thr	ctg Leu	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu	ctc Leu	1536

500				505				220				510				
ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	ggg	gat	ctc	tat	1584
Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Tyr	
		515					520					525				
gct	tac	atg	gag	aaa	ggc	atc	acg	gac	ctg	gcc	ccc	tac	cca	tac	gat	1632
Ala	Tyr	Met	Glu	Lys	Gly	Ile	Thr	Asp	Leu	Ala	Pro	Tyr	Pro	Tyr	Asp	
		530					535				540					
gta	cca	gat	tac	gcc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	aca	agc	1680
Val	Pro	Asp	Tyr	Ala	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	
					550					555					560	
atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	1728
Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	
				565					570					575		
acc	att	ggg	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	1776
Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	
			580					585					590			
atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	1824
Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	
		595					600					605				
atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg	1872
Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	
	610					615					620					
gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	cgc	cat	1920
Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	Val	Ile	Thr	Leu	Arg	His	
					630					635					640	
ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	1968
Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	
				645					650					655		
atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	2016
Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	
			660					665					670			
ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	2064
Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	
		675					680					685				
aat	ggc	gtg	ggg	ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	2112
Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	
	690					695					700					
tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	2160
Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	
					710					715					720	
gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	2208
Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	
				725					730					735		
gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	2256
Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	
			740				745						750			
gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	2304
Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	
		755					760					765				
gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	2352
Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	
	770					775					780					

aaa gtg ccc aca cca ctc tgc aca gcc cgc cag ctt gat gag gac cgc 2400
 Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg
 785 790 795 800

agt ctg ctg gat gcc ctg acc ctc gcc tcg tcg cgg ggg ccc ctg cgc 2448
 Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg
 805 810 815

aag cgc agt gtg gct gtg gcg aag gcc aag ccc aag ttt agc atc tct 2496
 Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser
 820 825 830

cca gat tcc ttg tcc 2511
 Pro Asp Ser Leu Ser
 835

<210> 80
 <211> 837
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 80

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110

Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125

Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140

Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160

Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn

222															
165								170				175			
Ala	Asp	Gln	Asn 180	Glu	Cys	Ile	Ile	Ala 185	Asn	Pro	Ala	Phe	Val 190	Val	Tyr
Ser	Ser	Ile 195	Val	Ser	Phe	Tyr	Val 200	Pro	Phe	Ile	Val	Thr 205	Leu	Leu	Val
Tyr	Ile 210	Lys	Ile	Tyr	Ile	Val 215	Leu	Arg	Arg	Arg	Arg 220	Lys	Arg	Val	Asn
Thr 225	Lys	Arg	Ser	Ser	Arg 230	Ala	Phe	Arg	Ala	His 235	Leu	Arg	Ala	Pro	Leu 240
Lys	Gly	Asn	Cys	Thr 245	His	Pro	Glu	Asp	Met 250	Lys	Leu	Cys	Thr	Val 255	Ile
Met	Lys	Ser	Asn 260	Gly	Ser	Phe	Pro	Val 265	Asn	Arg	Arg	Arg	Val 270	Glu	Ala
Ala	Arg	Arg 275	Ala	Gln	Glu	Leu	Glu 280	Met	Glu	Met	Leu	Ser 285	Ser	Thr	Ser
Pro	Pro 290	Glu	Arg	Thr	Arg	Tyr 295	Ser	Pro	Ile	Pro	Pro 300	Ser	His	His	Gln
Leu 305	Thr	Leu	Pro	Asp	Pro 310	Ser	His	His	Gly	Leu 315	His	Ser	Thr	Pro	Asp 320
Ser	Pro	Ala	Lys	Pro 325	Glu	Lys	Asn	Gly	His 330	Ala	Lys	Asp	His	Pro 335	Lys
Ile	Ala	Lys	Ile 340	Phe	Glu	Ile	Gln	Thr 345	Met	Pro	Asn	Gly	Lys 350	Thr	Arg
Thr	Ser	Leu 355	Lys	Thr	Met	Ser	Arg 360	Arg	Lys	Leu	Ser	Gln 365	Gln	Lys	Glu
Lys	Lys 370	Ala	Thr	Gln	Met	Leu 375	Ala	Ile	Val	Leu	Gly 380	Val	Phe	Ile	Ile
Cys 385	Trp	Leu	Pro	Phe	Phe 390	Ile	Thr	His	Ile	Leu 395	Asn	Ile	His	Cys	Asp 400
Cys	Asn	Ile	Pro	Pro 405	Val	Leu	Tyr	Ser	Ala 410	Phe	Thr	Trp	Leu	Gly 415	Tyr
Val	Asn	Ser	Ala 420	Val	Asn	Pro	Ile	Ile 425	Tyr	Thr	Thr	Phe	Asn 430	Ile	Glu
Phe	Arg	Lys 435	Ala	Phe	Leu	Lys	Ile 440	Leu	His	Cys	His	Tyr 445	Lys	Asn	Ile

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

Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly
725 730 735

Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu
740 745 750

Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu
755 760 765

Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile
770 775 780

Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg
785 790 800

Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg
805 810 815

Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser
820 825 830

Pro Asp Ser Leu Ser
835

<210> 81
<211> 2451
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2451)

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Met Asp Pro Leu Asn 5 Leu Ser Trp Tyr Asp 10 Asp Asp Leu Glu 15 Arg Gln	
aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg 20 Pro Phe Asn Gly 25 Ser Asp Gly Lys Ala 30 Asp Arg Pro	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile 45 Ala Val Ile	
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg	192
Val Phe Gly Asn Val 55 Leu Val Cys Met Ala Val 60 Ser Arg Glu Lys Ala	
ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac	240
Leu Gln Thr Thr Thr Asn 70 Tyr Leu Ile Val Ser 75 Leu Ala Val Ala Asp 80	
ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg	288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val	

85								90				95					
gta	ggt	gag	tgg	aaa	ttc	agc	agg	att	cac	tgt	gac	atc	ttc	gtc	act	336	
Val	Gly	Glu	Trp	Lys	Phe	Ser	Arg	Ile	His	Cys	Asp	Ile	Phe	Val	Thr		
			100														
ctg	gac	gtc	atg	atg	tgc	acg	gcg	agc	atc	ctg	aac	ttg	tgt	gcc	atc	384	
Leu	Asp	Val	Met	Met	Cys	Thr	Ala	Ser	Ile	Leu	Asn	Leu	Cys	Ala	Ile		
			115														
agc	atc	gac	agg	tac	aca	gct	gtg	gcc	atg	ccc	atg	ctg	tac	aat	acg	432	
Ser	Ile	Asp	Arg	Tyr	Thr	Ala	Val	Ala	Met	Pro	Met	Leu	Tyr	Asn	Thr		
			130														
cgc	tac	agc	tcc	aag	cgc	cgg	gtc	acc	gtc	atg	atc	tcc	atc	gtc	tgg	480	
Arg	Tyr	Ser	Ser	Lys	Arg	Arg	Val	Thr	Val	Met	Ile	Ser	Ile	Val	Trp		
			145														
gtc	ctg	tcc	ttc	acc	atc	tcc	tgc	cca	ctc	ctc	ttc	gga	ctc	aat	aac	528	
Val	Leu	Ser	Phe	Thr	Ile	Ser	Cys	Pro	Leu	Leu	Phe	Gly	Leu	Asn	Asn		
			165														
gca	gac	cag	aac	gag	tgc	atc	att	gcc	aac	ccg	gcc	ttc	gtg	gtc	tac	576	
Ala	Asp	Gln	Asn	Glu	Cys	Ile	Ile	Ala	Asn	Pro	Ala	Phe	Val	Val	Tyr		
			180														
tcc	tcc	atc	gtc	tcc	ttc	tac	gtg	ccc	ttc	att	gtc	acc	ctg	ctg	gtc	624	
Ser	Ser	Ile	Val	Ser	Phe	Tyr	Val	Pro	Phe	Ile	Val	Thr	Leu	Leu	Val		
			195														
tac	atc	aag	atc	tac	att	gtc	ctc	cgc	aga	cgc	cgc	aag	cga	gtc	aac	672	
Tyr	Ile	Lys	Ile	Tyr	Ile	Val	Leu	Arg	Arg	Arg	Arg	Lys	Arg	Val	Asn		
			210														
acc	aaa	cgc	agc	agc	cga	gct	ttc	agg	gcc	cac	ctg	agg	gct	cca	cta	720	
Thr	Lys	Arg	Ser	Ser	Arg	Ala	Phe	Arg	Ala	His	Leu	Arg	Ala	Pro	Leu		
			225														
aag	ggc	aac	tgt	act	cac	ccc	gag	gac	atg	aaa	ctc	tgc	acc	gtt	atc	768	
Lys	Gly	Asn	Cys	Thr	His	Pro	Glu	Asp	Met	Lys	Leu	Cys	Thr	Val	Ile		
			245														
atg	aag	tct	aat	ggg	agt	ttc	cca	gtg	aac	agg	cgg	aga	gtg	gag	gct	816	
Met	Lys	Ser	Asn	Gly	Ser	Phe	Pro	Val	Asn	Arg	Arg	Arg	Val	Glu	Ala		
			260														
gcc	cgg	cga	gcc	cag	gag	ctg	gag	atg	gag	atg	ctc	tcc	agc	acc	agc	864	
Ala	Arg	Arg	Ala	Gln	Glu	Leu	Glu	Met	Glu	Met	Leu	Ser	Ser	Thr	Ser		
			275														
cca	ccc	gag	agg	acc	cgg	tac	agc	ccc	atc	cca	ccc	agc	cac	cac	cag	912	
Pro	Pro	Glu	Arg	Thr	Arg	Tyr	Ser	Pro	Ile	Pro	Pro	Ser	His	His	Gln		
			290														
ctg	act	ctc	ccc	gac	ccg	tcc	cac	cat	ggg	ctc	cac	agc	act	ccc	gac	960	
Leu	Thr	Leu	Pro	Asp	Pro	Ser	His	His	Gly	Leu	His	Ser	Thr	Pro	Asp		
			305														
agc	ccc	gcc	aaa	cca	gag	aag	aat	ggg	cat	gcc	aaa	gac	cac	ccc	aag	1008	
Ser	Pro	Ala	Lys	Pro	Glu	Lys	Asn	Gly	His	Ala	Lys	Asp	His	Pro	Lys		
			325														
att	gcc	aag	atc	ttt	gag	atc	cag	acc	atg	ccc	aat	ggc	aaa	acc	cgg	1056	
Ile	Ala	Lys	Ile	Phe	Glu	Ile	Gln	Thr	Met	Pro	Asn	Gly	Lys	Thr	Arg		
			340														
acc	tcc	ctc	aag	acc	atg	agc	cgt	agg	aag	ctc	tcc	cag	cag	aag	gag	1104	
Thr	Ser	Leu	Lys	Thr	Met	Ser	Arg	Arg	Lys	Leu	Ser	Gln	Gln	Lys	Glu		
			355														
			360														
			365														

aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe 390	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	cat His	tat Tyr 445	aag Lys	aac Asn	ata Ile	1344
ggc Gly 450	gct Ala	aca Thr	agg Arg	tac Tyr	cgt Arg	act Thr 455	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 460	cgc Arg	ttc Phe	gtg Val	tcc Ser	1392
aag Lys 465	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 470	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 475	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 480	1440
cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 485	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 490	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 495	cca Pro	1488
cac His	act Thr	ctg Leu	ctc Leu 500	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 505	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 510	ctg Leu	ctc Leu	1536
ttt Phe	gcc Ala	atg Met 515	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 520	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 525	gac Asp	ctg Leu	gcc Ala	1584
ccc Pro	gga Gly 530	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 535	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 540	atc Ile	cac His	tcc Ser	ttt Phe	1632
tca Ser 545	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 550	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 555	gtg Val	acc Thr	att Ile	ggt Gly	ttc Phe 560	1680
ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 565	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 570	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 575	ctc Leu	1728
att Ile	gtg Val	cag Gln	aat Asn 580	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 585	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 590	ctg Leu	ggc Gly	1776
tgc Cys	atc Ile	ttc Phe 595	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 600	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 605	gaa Glu	acc Thr	ctc Leu	1824
atc Ile	ttc Phe 610	agc Ser	aag Lys	cat His	gct Ala	gtg Val 615	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 620	ggc Gly	cgc Arg	ctg Leu	tgc Cys	1872
ttc Phe 625	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 630	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 635	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 640	1920

227

acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	1968
Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	
				645					650					655		
gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggc	2016
Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	
			660					665					670			
ggc	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	2064
Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	
		675					680					685				
gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	2112
Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	
	690					695					700					
cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	2160
His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	
				710					715						720	
acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	2208
Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	
				725					730					735		
cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	2256
Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	
			740					745					750			
tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggc	aac	acc	att	aaa	gtg	ccc	aca	2304
Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	
		755					760					765				
cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	2352
Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	
		770				775					780					
gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	2400
Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	
					790				795						800	
gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	2448
Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	
				805					810					815		
tcc																2451
Ser																

<210> 82
 <211> 817
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 82

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
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Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60
 Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320

Ser Pro Ala Lys Pro₃₂₅ Glu Lys Asn Gly His₃₃₀ Ala Lys Asp His Pro₃₃₅ Lys
 Ile Ala Lys Ile₃₄₀ Phe Glu Ile Gln Thr₃₄₅ Met Pro Asn Gly Lys₃₅₀ Thr Arg
 Thr Ser Leu₃₅₅ Lys Thr Met Ser Arg₃₆₀ Arg Lys Leu Ser Gln₃₆₅ Gln Lys Glu
 Lys Lys₃₇₀ Ala Thr Gln Met Leu₃₇₅ Ala Ile Val Leu Gly₃₈₀ Val Phe Ile Ile
 Cys₃₈₅ Trp Leu Pro Phe Phe₃₉₀ Ile Thr His Ile Leu₃₉₅ Asn Ile His Cys Asp₄₀₀
 Cys Asn Ile Pro Pro₄₀₅ Val Leu Tyr Ser Ala₄₁₀ Phe Thr Trp Leu Gly₄₁₅ Tyr
 Val Asn Ser Ala₄₂₀ Val Asn Pro Ile Ile₄₂₅ Tyr Thr Thr Phe Asn₄₃₀ Ile Glu
 Phe Arg Lys₄₃₅ Ala Phe Leu Lys Ile₄₄₀ Leu His Cys His Tyr₄₄₅ Lys Asn Ile
 Gly Ala Thr Arg Tyr Arg Thr₄₅₅ Arg Glu Arg Arg Ala₄₆₀ Arg Phe Val Ser
 Lys₄₆₅ Lys Gly Asn Cys Asn₄₇₀ Val Ala His Lys Asn₄₇₅ Ile Arg Glu Gln Gly₄₈₀
 Arg Phe Leu Gln Asp₄₈₅ Val Phe Thr Thr Leu₄₉₀ Val Asp Leu Lys Trp₄₉₅ Pro
 His Thr Leu Leu₅₀₀ Ile Phe Thr Met Ser₅₀₅ Phe Leu Cys Ser Trp₅₁₀ Leu Leu
 Phe Ala Met₅₁₅ Val Trp Trp Leu Ile₅₂₀ Ala Phe Ala His Gly₅₂₅ Asp Leu Ala
 Pro Gly₅₃₀ Glu Gly Thr Asn Val₅₃₅ Pro Cys Val Thr Ser₅₄₀ Ile His Ser Phe
 Ser₅₄₅ Ser Ala Phe Leu Phe₅₅₀ Ser Ile Glu Val Gln₅₅₅ Val Thr Ile Gly Phe₅₆₀
 Gly Gly Arg Met Val₅₆₅ Thr Glu Glu Cys Pro₅₇₀ Leu Ala Ile Leu Ile₅₇₅ Leu
 Ile Val Gln Asn₅₈₀ Ile Val Gly Leu Met₅₈₅ Ile Asn Ala Ile Met₅₉₀ Leu Gly

Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 595 600 605 230
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 610 615 620
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 625 630 635 640
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 645 650 655
 Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 660 665 670
 Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
 675 680 685
 Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
 690 695 700
 His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
 705 710 715 720
 Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
 725 730 735
 Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 740 745 750
 Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
 755 760 765
 Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp
 770 775 780
 Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val
 785 790 795 800
 Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu
 805 810 815

Ser

<210> 83
 <211> 2343
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
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 <222> (1)..(2343)

<400> 83

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

232																816
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gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	cat His	tat Tyr 445	aag Lys	aac Asn	ata Ile	1344
ggc Gly	gct Ala 450	aca Thr	agg Arg	tac Tyr	cgt Arg	act Thr 455	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 460	cgc Arg	ttc Phe	gtg Val	tcc Ser	1392
aag Lys 465	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 470	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 475	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 480	1440
cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 485	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 490	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 495	cca Pro	1488
cac His	act Thr	ctg Leu	ctc Leu 500	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 505	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 510	ctg Leu	ctc Leu	1536
ttt Phe	gcc Ala	atg Met 515	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 520	gcc Ala	ttc Phe	gcc Ala	cac His	ggg Gly 525	gac Asp	ctg Leu	gcc Ala	1584
ccc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	1632

Pro	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe		
	530					535					540						
tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggt	ttc	1680	
Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	560	
545					550					555							
ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	1728	
Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	575	
				565					570					575			
att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	1776	
Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	580	
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tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	1824	
Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	600	
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atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	1872	
Ile	Phe	Ser	Lys	His	Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	610	
	610					615					620						
ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	1920	
Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	625	
625					630					635					640		
acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	1968	
Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	645	
				645					650					655			
gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	2016	
Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	660	
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ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	2064	
Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	675	
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gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	2112	
Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	690	
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cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	2160	
His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	705	
				710						715					720		
acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	2208	
Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	725	
				725					730					735			
cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	2256	
Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	740	
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tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	2304	
Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	755	
		755					760					765					
cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt				2343	
Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser				770	
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 <211> 781
 <212> PRT
 <213> Artificial sequence

<220>

<223> Synthetic Construct

<400> 84

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 20 25 30
 His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45
 Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60
 Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255

Met Lys Ser Asn₂₆₀ Gly Ser Phe Pro Val₂₆₅ Asn²³⁵ Arg Arg Arg Val₂₇₀ Glu Ala
 Ala Arg Arg₂₇₅ Ala Gln Glu Leu Glu₂₈₀ Met Glu Met Leu Ser₂₈₅ Ser Thr Ser
 Pro Pro₂₉₀ Glu Arg Thr Arg Tyr₂₉₅ Ser Pro Ile Pro₃₀₀ Ser His His Gln
 Leu₃₀₅ Thr Leu Pro Asp Pro₃₁₀ Ser His His Gly Leu₃₁₅ His Ser Thr Pro Asp₃₂₀
 Ser Pro Ala Lys Pro₃₂₅ Glu Lys Asn Gly His₃₃₀ Ala Lys Asp His Pro₃₃₅ Lys
 Ile Ala Lys Ile₃₄₀ Phe Glu Ile Gln Thr₃₄₅ Met Pro Asn Gly Lys₃₅₀ Thr Arg
 Thr Ser Leu₃₅₅ Lys Thr Met Ser Arg₃₆₀ Arg Lys Leu Ser Gln₃₆₅ Gln Lys Glu
 Lys Lys₃₇₀ Ala Thr Gln Met Leu₃₇₅ Ala Ile Val Leu Gly₃₈₀ Val Phe Ile Ile
 Cys₃₈₅ Trp Leu Pro Phe Phe₃₉₀ Ile Thr His Ile Leu₃₉₅ Asn Ile His Cys Asp₄₀₀
 Cys Asn Ile Pro Pro₄₀₅ Val Leu Tyr Ser Ala₄₁₀ Phe Thr Trp Leu Gly₄₁₅ Tyr
 Val Asn Ser Ala₄₂₀ Val Asn Pro Ile Ile₄₂₅ Tyr Thr Thr Phe Asn₄₃₀ Ile Glu
 Phe Arg Lys₄₃₅ Ala Phe Leu Lys Ile₄₄₀ Leu His Cys His Tyr₄₄₅ Lys Asn Ile
 Gly Ala Thr Arg Tyr Arg Thr₄₅₅ Arg Glu Arg Arg Ala₄₆₀ Arg Phe Val Ser
 Lys₄₆₅ Lys Gly Asn Cys Asn₄₇₀ Val Ala His Lys Asn₄₇₅ Ile Arg Glu Gln Gly₄₈₀
 Arg Phe Leu Gln Asp₄₈₅ Val Phe Thr Thr Leu₄₉₀ Val Asp Leu Lys Trp₄₉₅ Pro
 His Thr Leu Leu₅₀₀ Ile Phe Thr Met Ser₅₀₅ Phe Leu Cys Ser Trp₅₁₀ Leu Leu
 Phe Ala Met₅₁₅ Val Trp Trp Leu Ile₅₂₀ Ala Phe Ala His Gly₅₂₅ Asp Leu Ala
 Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe

530 535 236 540
 Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
 545 550 555 560
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 565 570 575
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 580 585 590
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 595 600 605
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 610 615 620
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 625 630 635 640
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 645 650 655
 Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 660 665 670
 Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
 675 680 685
 Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
 690 695 700
 His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
 705 710 715 720
 Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
 725 730 735
 Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 740 745 750
 Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
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 Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
 770 775 780

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<223> hybrid sequence

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<221> CDS

<222> (1)..(2361)

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aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg Pro Phe Asn Gly Ser 25 Asp Gly Lys Ala Asp 30 Arg Pro	
20 30	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile	
35 40 45	
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg	192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala	
50 55 60	
ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac	240
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser 75 Leu Ala Val Ala Asp	
65 70 80	
ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg	288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val	
85 90 95	
gta ggt gag tgg aaa ttc agc agg att cac tgt gac atc ttc gtc act	336
Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr	
100 105 110	
ctg gac gtc atg atg tgc acg gcg agc atc ctg aac ttg tgt gcc atc	384
Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile	
115 120 125	
agc atc gac agg tac aca gct gtg gcc atg ccc atg ctg tac aat acg	432
Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr	
130 135 140	
cgc tac agc tcc aag cgc cgg gtc acc gtc atg atc tcc atc gtc tgg	480
Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp	
145 150 155 160	
gtc ctg tcc ttc acc atc tcc tgc cca ctc ctc ttc gga ctc aat aac	528
Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn	
165 170 175	
gca gac cag aac gag tgc atc att gcc aac ccg gcc ttc gtg gtc tac	576
Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr	
180 185 190	
tcc tcc atc gtc tcc ttc tac gtg ccc ttc att gtc acc ctg ctg gtc	624
Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val	
195 200 205	
tac atc aag atc tac att gtc ctc cgc aga cgc cgc aag cga gtc aac	672
Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn	
210 215 220	
acc aaa cgc agc agc cga gct ttc agg gcc cac ctg agg gct cca cta	720
Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu	
225 230 235 240	
aag ggc aac tgt act cac ccc gag gac atg aaa ctc tgc acc gtt atc	768

Lys	Gly	Asn	Cys	Thr 245	His	Pro	Glu	Asp	Met 250	238 Lys	Leu	Cys	Thr	Val 255	Ile	
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gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly 350	aaa Lys	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe 390	ttc Phe	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	agg Arg	agg Arg 445	gcc Ala	cgc Arg	ttc Phe	1344
gtg Val	tcc Ser 450	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 455	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 460	aac Asn	att Ile	cga Arg	gag Glu	1392
cag Gln 465	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 470	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 475	ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 480	1440
tgg Trp	cca Pro	cac His	act Thr	ctg Leu 485	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 490	tcc Ser	ttc Phe	ctg Leu	tgc Cys	agc Ser 495	tgg Trp	1488
ctg Leu	ctc Leu	ttt Phe	gcc Ala 500	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 505	atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 510	ggg Gly	gat Asp	1536
ctc Leu	tat Tyr	gct Ala	tac Tyr	atg Met	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr	cca Pro	1584

[illegible]

<210> 86
 <211> 787
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 86

Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln
 1 5 10 15

Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro
 20 25 30

His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile
 35 40 45

Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala
 50 55 60

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80

Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95

Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110

Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125

Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140

Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160

Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175

Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190

Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205

Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220

Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu

225										241									240
										235									
Lys	Gly	Asn	Cys	Thr	His	Pro	Glu	Asp	Met	Lys	Leu	Cys	Thr	Val	Ile				
				245					250					255					
Met	Lys	Ser	Asn	Gly	Ser	Phe	Pro	Val	Asn	Arg	Arg	Arg	Val	Glu	Ala				
			260					265					270						
Ala	Arg	Arg	Ala	Gln	Glu	Leu	Glu	Met	Glu	Met	Leu	Ser	Ser	Thr	Ser				
			275				280					285							
Pro	Pro	Glu	Arg	Thr	Arg	Tyr	Ser	Pro	Ile	Pro	Pro	Ser	His	His	Gln				
	290					295					300								
Leu	Thr	Leu	Pro	Asp	Pro	Ser	His	His	Gly	Leu	His	Ser	Thr	Pro	Asp				
305					310					315					320				
Ser	Pro	Ala	Lys	Pro	Glu	Lys	Asn	Gly	His	Ala	Lys	Asp	His	Pro	Lys				
				325					330					335					
Ile	Ala	Lys	Ile	Phe	Glu	Ile	Gln	Thr	Met	Pro	Asn	Gly	Lys	Thr	Arg				
			340					345					350						
Thr	Ser	Leu	Lys	Thr	Met	Ser	Arg	Arg	Lys	Leu	Ser	Gln	Gln	Lys	Glu				
		355					360					365							
Lys	Lys	Ala	Thr	Gln	Met	Leu	Ala	Ile	Val	Leu	Gly	Val	Phe	Ile	Ile				
	370					375					380								
Cys	Trp	Leu	Pro	Phe	Phe	Ile	Thr	His	Ile	Leu	Asn	Ile	His	Cys	Asp				
385					390					395					400				
Cys	Asn	Ile	Pro	Pro	Val	Leu	Tyr	Ser	Ala	Phe	Thr	Trp	Leu	Gly	Tyr				
				405					410					415					
Val	Asn	Ser	Ala	Val	Asn	Pro	Ile	Ile	Tyr	Thr	Thr	Phe	Asn	Ile	Glu				
			420					425					430						
Phe	Arg	Lys	Ala	Phe	Leu	Lys	Ile	Leu	His	Cys	Arg	Arg	Ala	Arg	Phe				
		435					440					445							
Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His	Lys	Asn	Ile	Arg	Glu				
	450					455					460								
Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	Thr	Thr	Leu	Val	Asp	Leu	Lys				
465					470					475					480				
Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser	Phe	Leu	Cys	Ser	Trp				
				485					490					495					
Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	Gly	Asp				
			500					505					510						

Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro
 515 520 525
 Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val
 530 535 540
 Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val
 545 550 555 560
 Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro
 565 570 575
 Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile
 580 585 590
 Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His
 595 600 605
 Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu
 610 615 620
 Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys
 625 630 635 640
 Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr
 645 650 655
 Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro
 660 665 670
 Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu
 675 680 685
 Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala
 690 695 700
 Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu
 705 710 715 720
 Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser
 725 730 735
 Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val
 740 745 750
 Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn
 755 760 765
 Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu
 770 775 780

Asp Arg Ser
785

<210> 87
<211> 2469
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2469)

<400> 87	
atg gat cca ctg aat ctg tcc tgg tat gat gat gat ctg gag agg cag	48
Met Asp Pro Leu Asn Leu Ser Trp Tyr Asp Asp Asp Leu Glu Arg Gln	
1 5 10 15	
aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro	
20 25 30	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile	
35 40 45	
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg	192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala	
50 55 60	
ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac	240
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp	
65 70 75 80	
ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg	288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val	
85 90 95	
gta ggt gag tgg aaa ttc agc agg att cac tgt gac atc ttc gtc act	336
Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr	
100 105 110	
ctg gac gtc atg atg tgc acg gcg agc atc ctg aac ttg tgt gcc atc	384
Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile	
115 120 125	
agc atc gac agg tac aca gct gtg gcc atg ccc atg ctg tac aat acg	432
Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr	
130 135 140	
cgc tac agc tcc aag cgc cgg gtc acc gtc atg atc tcc atc gtc tgg	480
Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp	
145 150 155 160	
gtc ctg tcc ttc acc atc tcc tgc cca ctc ctc ttc gga ctc aat aac	528
Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn	
165 170 175	
gca gac cag aac gag tgc atc att gcc aac ccg gcc ttc gtg gtc tac	576
Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr	
180 185 190	
tcc tcc atc gtc tcc ttc tac gtg ccc ttc att gtc acc ctg ctg gtc	624
Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val	

195			200			244			205									
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn			672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240			720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile			768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala			816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser			864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln			912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320			960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys			1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg			1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu			1104
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile			1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400			1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr			1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile 425	atc Ile	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu			1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	agg Arg	agg Arg 445	gcc Ala	cgc Arg	ttc Phe			1344
gtg Val	tcc Ser 450	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 455	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 460	aac Asn	att Ile	cga Arg	gag Glu			1392
cag Gln 465	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 470	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 475	ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 480			1440

tgg	cca	cac	act	ctg	ctc	att	ttc	acc	atg	tcc	ttc	ctg	tgc	agc	tgg	1488
Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser	Phe	Leu	Cys	Ser	Trp	
				485					490					495		
ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	ggg	gat	1536
Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	Gly	Asp	
			500					505					510			
ctc	tat	gct	tac	atg	gag	aaa	ggc	atc	acg	gac	ctg	gcc	ccc	tac	cca	1584
Leu	Tyr	Ala	Tyr	Met	Glu	Lys	Gly	Ile	Thr	Asp	Leu	Ala	Pro	Tyr	Pro	
		515					520					525				
tac	gat	gta	cca	gat	tac	gcc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	1632
Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	
	530					535					540					
aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	1680
Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	
					550					555					560	
cag	gtg	acc	att	ggg	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	1728
Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	
				565					570					575		
ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	1776
Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	
			580					585					590			
aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	1824
Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	
		595					600					605				
cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	1872
Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	Val	Ile	Thr	Leu	
	610					615					620					
cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	1920
Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	
					630					635					640	
agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	1968
Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	
				645					650					655		
acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	2016
Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	
			660					665					670			
atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	2064
Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	
		675					680					685				
atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	2112
Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	
	690					695					700					
cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	2160
Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	
				710						715					720	
gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	2208
Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	
			725					730						735		
tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	2256
Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	
			740					745					750			

gcc gag gag gac ggc cgc tat tct gtg ²⁴⁶ gac tac tcc aaa ttt ggt aac 2304
 Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn
 755 760 765
 acc att aaa gtg ccc aca cca ctc tgc aca gcc cgc cag ctt gat gag 2352
 Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu
 770 775 780
 gac cgc agt ctg ctg gat gcc ctg acc ctc gcc tcg tcg cgg ggg ccc 2400
 Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro
 785 790 795 800
 ctg cgc aag cgc agt gtg gct gtg gcg aag gcc aag ccc aag ttt agc 2448
 Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser
 805 810 815
 atc tct cca gat tcc ttg tcc 2469
 Ile Ser Pro Asp Ser Leu Ser
 820

<210> 88
 <211> 823
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 88

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

Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320
 Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335
 Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 350
 Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360 365
 Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380
 Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430

Phe Arg Lys₄₃₅ Ala Phe Leu Lys₄₄₀ Ile Leu His Cys Arg Arg₄₄₅ Ala Arg Phe
 Val Ser₄₅₀ Lys Lys Gly Asn Cys₄₅₅ Asn Val Ala His Lys₄₆₀ Asn Ile Arg Glu
 Gln Gly Arg Phe Leu Gln₄₇₀ Asp Val Phe Thr Thr₄₇₅ Leu Val Asp Leu Lys₄₈₀
 Trp Pro His Thr₄₈₅ Leu Leu Ile Phe Thr Met₄₉₀ Ser Phe Leu Cys Ser₄₉₅ Trp
 Leu Leu Phe Ala₅₀₀ Met Val Trp Trp Leu₅₀₅ Ile Ala Phe Ala His₅₁₀ Gly Asp
 Leu Tyr Ala₅₁₅ Tyr Met Glu Lys Gly₅₂₀ Ile Thr Asp Leu Ala₅₂₅ Pro Tyr Pro
 Tyr Asp₅₃₀ Val Pro Asp Tyr Ala₅₃₅ Gly Glu Gly Thr Asn₅₄₀ Val Pro Cys Val
 Thr Ser Ile His Ser Phe₅₅₀ Ser Ser Ala Phe Leu₅₅₅ Phe Ser Ile Glu Val₅₆₀
 Gln Val Thr Ile Gly₅₆₅ Phe Gly Gly Arg Met₅₇₀ Val Thr Glu Glu Cys₅₇₅ Pro
 Leu Ala Ile Leu₅₈₀ Ile Leu Ile Val Gln₅₈₅ Asn Ile Val Gly Leu₅₉₀ Met Ile
 Asn Ala Ile₅₉₅ Met Leu Gly Cys Ile₆₀₀ Phe Met Lys Thr Ala₆₀₅ Gln Ala His
 Arg Arg₆₁₀ Ala Glu Thr Leu Ile₆₁₅ Phe Ser Lys His Ala₆₂₀ Val Ile Thr Leu
 Arg His Gly Arg Leu Cys₆₃₀ Phe Met Leu Arg Val₆₃₅ Gly Asp Leu Arg Lys₆₄₀
 Ser Met Ile Ile Ser₆₄₅ Ala Thr Ile His Met₆₅₀ Gln Val Val Arg Lys₆₅₅ Thr
 Thr Ser Pro Glu₆₆₀ Gly Glu Val Val Pro₆₆₅ Leu His Gln Val Asp₆₇₀ Ile Pro
 Met Glu Asn₆₇₅ Gly Val Gly Gly Asn₆₈₀ Gly Ile Phe Leu Val₆₈₅ Ala Pro Leu
 Ile Ile Tyr His Val Ile Asp₆₉₅ Ser Asn Ser Pro Leu₇₀₀ Tyr Asp Leu Ala

Pro Ser Asp Leu His His His Gln Asp Leu ²⁴⁹ Glu Ile Ile Val Ile Leu
 705 710 715 720
 Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser
 725 730 735
 Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val
 740 745 750
 Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn
 755 760 765
 Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu
 770 775 780
 Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro
 785 790 795 800
 Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser
 805 810 815
 Ile Ser Pro Asp Ser Leu Ser
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 <211> 2409
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2409)

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aac tgg agc cgg ccc ttc aac ggg tca gac ggg aag gcg gac aga ccc	96
Asn Trp Ser Arg Pro Phe Asn Gly Ser Asp Gly Lys Ala Asp Arg Pro	
20 25 30	
cac tac aac tac tat gcc aca ctg ctc acc ctg ctc atc gct gtc atc	144
His Tyr Asn Tyr Tyr Ala Thr Leu Leu Thr Leu Leu Ile Ala Val Ile	
35 40 45	
gtc ttc ggc aac gtg ctg gtg tgc atg gct gtg tcc cgc gag aag gcg	192
Val Phe Gly Asn Val Leu Val Cys Met Ala Val Ser Arg Glu Lys Ala	
50 55 60	
ctg cag acc acc acc aac tac ctg atc gtc agc ctc gca gtg gcc gac	240
Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp	
65 70 75 80	
ctc ctc gtc gcc aca ctg gtc atg ccc tgg gtt gtc tac ctg gag gtg	288
Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val	
85 90 95	

gta Val	ggt Gly	gag Glu	tgg Trp 100	aaa Lys	ttc Phe	agc Ser	agg Arg	att Ile 105	cac His	tgt Cys	gac Asp	atc Ile	ttc Phe 110	gtc Val	act Thr	336
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	ttg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
aag Lys	ggc Gly	aac Asn	tgt Cys	act Thr 245	cac His	ccc Pro	gag Glu	gac Asp	atg Met 250	aaa Lys	ctc Leu	tgc Cys	acc Thr	gtt Val 255	atc Ile	768
atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca Pro	ccc Pro 290	gag Glu	agg Arg	acc Thr	cgg Arg	tac Tyr 295	agc Ser	ccc Pro	atc Ile	cca Pro	ccc Pro 300	agc Ser	cac His	cac His	cag Gln	912
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	960
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	1008
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln 345	acc Thr	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1056
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	1104

aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1152
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe 390	ttc Phe	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	1200
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1248
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	1296
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	agg Arg 445	agg Arg	gcc Ala	cgc Arg	ttc Phe	1344
gtg Val	tcc Ser 450	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 455	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 460	aac Asn	att Ile	cga Arg	gag Glu	1392
cag Gln 465	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 470	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 475	ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 480	1440
tgg Trp	cca Pro	cac His	act Thr	ctg Leu 485	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 490	tcc Ser	ttc Phe	ctg Leu	tgc Cys	agc Ser 495	tgg Trp	1488
ctg Leu	ctc Leu	ttt Phe	gcc Ala 500	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 505	atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 510	ggc Gly	gac Asp	1536
ctg Leu	gcc Ala	ccc Pro 515	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 520	gtg Val	ccc Pro	tgc Cys	gtc Val	aca Thr 525	agc Ser	atc Ile	cac His	1584
tcc Ser	ttt Phe 530	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 535	ttc Phe	tcc Ser	atc Ile	gag Glu	gtc Val 540	cag Gln	gtg Val	acc Thr	att Ile	1632
ggc Gly 545	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 550	gtg Val	aca Thr	gag Glu	gaa Glu	tgt Cys 555	ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 560	1680
att Ile	ctc Leu	att Ile	gtg Val	cag Gln 565	aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu 570	atg Met	atc Ile	aac Asn	gcc Ala	atc Ile 575	atg Met	1728
ctg Leu	ggc Gly	tgc Cys	atc Ile 580	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 585	cag Gln	gca Ala	cat His	cgg Arg	cgg Arg 590	gca Ala	gaa Glu	1776
acc Thr	ctc Leu	atc Ile 595	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 600	gtg Val	atc Ile	acc Thr	ctg Leu	cgc Arg 605	cat His	ggc Gly	cgc Arg	1824
ctg Leu	tgc Cys 610	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 615	ggg Gly	gac Asp	ctc Leu	cga Arg	aag Lys 620	agc Ser	atg Met	atc Ile	att Ile	1872
agc Ser 625	gcc Ala	acc Thr	atc Ile	cac His	atg Met 630	cag Gln	gtg Val	gtg Val	cgc Arg	aag Lys 635	acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 640	1920
ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	1968

Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly		
				645					650					655			
gtg	ggt	ggt	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac		2016
Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His		
			660					665					670				
gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg		2064
Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu		
		675					680					685					
cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta		2112
His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val		
		690				695					700						
gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac		2160
Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp		
705					710					715					720		
gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac		2208
Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp		
			725						730					735			
ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggt	aac	acc	att	aaa	gtg		2256
Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val		
			740					745					750				
ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg		2304
Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu		
		755					760					765					
ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc		2352
Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg		
	770					775					780						
agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat		2400
Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp		
785					790					795					800		
tcc	ttg	tcc															2409
Ser	Leu	Ser															

<210> 90
 <211> 803
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 90

Met	Asp	Pro	Leu	Asn	Leu	Ser	Trp	Tyr	Asp	Asp	Asp	Leu	Glu	Arg	Gln		
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Asn	Trp	Ser	Arg	Pro	Phe	Asn	Gly	Ser	Asp	Gly	Lys	Ala	Asp	Arg	Pro		
			20					25					30				

His	Tyr	Asn	Tyr	Tyr	Ala	Thr	Leu	Leu	Thr	Leu	Leu	Ile	Ala	Val	Ile		
		35					40					45					

Val	Phe	Gly	Asn	Val	Leu	Val	Cys	Met	Ala	Val	Ser	Arg	Glu	Lys	Ala		
	50					55					60						

Leu Gln Thr Thr Thr Asn Tyr Leu Ile Val Ser Leu Ala Val Ala Asp
 65 70 75 80
 Leu Leu Val Ala Thr Leu Val Met Pro Trp Val Val Tyr Leu Glu Val
 85 90 95
 Val Gly Glu Trp Lys Phe Ser Arg Ile His Cys Asp Ile Phe Val Thr
 100 105 110
 Leu Asp Val Met Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile
 115 120 125
 Ser Ile Asp Arg Tyr Thr Ala Val Ala Met Pro Met Leu Tyr Asn Thr
 130 135 140
 Arg Tyr Ser Ser Lys Arg Arg Val Thr Val Met Ile Ser Ile Val Trp
 145 150 155 160
 Val Leu Ser Phe Thr Ile Ser Cys Pro Leu Leu Phe Gly Leu Asn Asn
 165 170 175
 Ala Asp Gln Asn Glu Cys Ile Ile Ala Asn Pro Ala Phe Val Val Tyr
 180 185 190
 Ser Ser Ile Val Ser Phe Tyr Val Pro Phe Ile Val Thr Leu Leu Val
 195 200 205
 Tyr Ile Lys Ile Tyr Ile Val Leu Arg Arg Arg Arg Lys Arg Val Asn
 210 215 220
 Thr Lys Arg Ser Ser Arg Ala Phe Arg Ala His Leu Arg Ala Pro Leu
 225 230 235 240
 Lys Gly Asn Cys Thr His Pro Glu Asp Met Lys Leu Cys Thr Val Ile
 245 250 255
 Met Lys Ser Asn Gly Ser Phe Pro Val Asn Arg Arg Arg Val Glu Ala
 260 265 270
 Ala Arg Arg Ala Gln Glu Leu Glu Met Glu Met Leu Ser Ser Thr Ser
 275 280 285
 Pro Pro Glu Arg Thr Arg Tyr Ser Pro Ile Pro Pro Ser His His Gln
 290 295 300
 Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp
 305 310 315 320
 Ser Pro Ala Lys Pro Glu Lys Asn Gly His Ala Lys Asp His Pro Lys
 325 330 335

Ile Ala Lys Ile Phe Glu Ile Gln Thr Met Pro Asn Gly Lys Thr Arg
 340 345 254 350
 Thr Ser Leu Lys Thr Met Ser Arg Arg Lys Leu Ser Gln Gln Lys Glu
 355 360
 Lys Lys Ala Thr Gln Met Leu Ala Ile Val Leu Gly Val Phe Ile Ile
 370 375 380
 Cys Trp Leu Pro Phe Phe Ile Thr His Ile Leu Asn Ile His Cys Asp
 385 390 395 400
 Cys Asn Ile Pro Pro Val Leu Tyr Ser Ala Phe Thr Trp Leu Gly Tyr
 405 410 415
 Val Asn Ser Ala Val Asn Pro Ile Ile Tyr Thr Thr Phe Asn Ile Glu
 420 425 430
 Phe Arg Lys Ala Phe Leu Lys Ile Leu His Cys Arg Arg Ala Arg Phe
 435 440 445
 Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu
 450 455 460
 Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys
 465 470 475 480
 Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp
 485 490 495
 Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp
 500 505 510
 Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His
 515 520 525
 Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile
 530 535 540
 Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu
 545 550 555 560
 Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met
 565 570 575
 Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu
 580 585 590
 Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg
 595 600 605
 Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile

610 615 255 620
 Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
 625 630 635 640
 Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
 645 650 655
 Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
 660 665 670
 Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
 675 680 685
 His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
 690 695 700
 Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
 705 710 715 720
 Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
 725 730 735
 Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val
 740 745 750
 Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu
 755 760 765
 Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg
 770 775 780
 Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp
 785 790 795 800
 Ser Leu Ser

<210> 91
 <211> 2301
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2301)

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 1 5 10 15

256																96
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cac His	tac Tyr	aac Asn 35	tac Tyr	tat Tyr	gcc Ala	aca Thr	ctg Leu 40	ctc Leu	acc Thr	ctg Leu	ctc Leu	atc Ile 45	gct Ala	gtc Val	atc Ile	144
gtc Val	ttc Phe 50	ggc Gly	aac Asn	gtg Val	ctg Leu	gtg Val 55	tgc Cys	atg Met	gct Ala	gtg Val	tcc Ser 60	cgc Arg	gag Glu	aag Lys	gcg Ala	192
ctg Leu 65	cag Gln	acc Thr	acc Thr	acc Thr	aac Asn 70	tac Tyr	ctg Leu	atc Ile	gtc Val	agc Ser 75	ctc Leu	gca Ala	gtg Val	gcc Ala	gac Asp 80	240
ctc Leu	ctc Leu	gtc Val	gcc Ala	aca Thr 85	ctg Leu	gtc Val	atg Met	ccc Pro	tgg Trp 90	gtt Val	gtc Val	tac Tyr	ctg Leu	gag Glu 95	gtg Val	288
gta Val	ggt Gly	gag Glu	tgg Trp 100	aaa Lys	ttc Phe	agc Ser	agg Arg	att Ile 105	cac His	tgt Cys	gac Asp	atc Ile	ttc Phe 110	gtc Val	act Thr	336
ctg Leu	gac Asp	gtc Val 115	atg Met	atg Met	tgc Cys	acg Thr	gcg Ala 120	agc Ser	atc Ile	ctg Leu	aac Asn	ttg Leu 125	tgt Cys	gcc Ala	atc Ile	384
agc Ser	atc Ile 130	gac Asp	agg Arg	tac Tyr	aca Thr	gct Ala 135	gtg Val	gcc Ala	atg Met	ccc Pro	atg Met 140	ctg Leu	tac Tyr	aat Asn	acg Thr	432
cgc Arg 145	tac Tyr	agc Ser	tcc Ser	aag Lys	cgc Arg 150	cgg Arg	gtc Val	acc Thr	gtc Val	atg Met 155	atc Ile	tcc Ser	atc Ile	gtc Val	tgg Trp 160	480
gtc Val	ctg Leu	tcc Ser	ttc Phe	acc Thr 165	atc Ile	tcc Ser	tgc Cys	cca Pro	ctc Leu 170	ctc Leu	ttc Phe	gga Gly	ctc Leu	aat Asn 175	aac Asn	528
gca Ala	gac Asp	cag Gln	aac Asn 180	gag Glu	tgc Cys	atc Ile	att Ile	gcc Ala 185	aac Asn	ccg Pro	gcc Ala	ttc Phe	gtg Val 190	gtc Val	tac Tyr	576
tcc Ser	tcc Ser	atc Ile 195	gtc Val	tcc Ser	ttc Phe	tac Tyr	gtg Val 200	ccc Pro	ttc Phe	att Ile	gtc Val	acc Thr 205	ctg Leu	ctg Leu	gtc Val	624
tac Tyr	atc Ile 210	aag Lys	atc Ile	tac Tyr	att Ile	gtc Val 215	ctc Leu	cgc Arg	aga Arg	cgc Arg	cgc Arg 220	aag Lys	cga Arg	gtc Val	aac Asn	672
acc Thr 225	aaa Lys	cgc Arg	agc Ser	agc Ser	cga Arg 230	gct Ala	ttc Phe	agg Arg	gcc Ala	cac His 235	ctg Leu	agg Arg	gct Ala	cca Pro	cta Leu 240	720
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atg Met	aag Lys	tct Ser	aat Asn 260	ggg Gly	agt Ser	ttc Phe	cca Pro	gtg Val 265	aac Asn	agg Arg	cgg Arg	aga Arg	gtg Val 270	gag Glu	gct Ala	816
gcc Ala	cgg Arg	cga Arg 275	gcc Ala	cag Gln	gag Glu	ctg Leu	gag Glu 280	atg Met	gag Glu	atg Met	ctc Leu	tcc Ser 285	agc Ser	acc Thr	agc Ser	864
cca	ccc	gag	agg	acc	cgg	tac	agc	ccc	atc	cca	ccc	agc	cac	cac	cag	912

257																960
Pro 290	Glu Arg	Thr Arg	Tyr 295	Ser Pro	Ile Pro	Pro 300	Ser His	His Gln								
ctg Leu 305	act Thr	ctc Leu	ccc Pro	gac Asp	ccg Pro 310	tcc Ser	cac His	cat His	ggg Gly	ctc Leu 315	cac His	agc Ser	act Thr	ccc Pro	gac Asp 320	1008
agc Ser	ccc Pro	gcc Ala	aaa Lys	cca Pro 325	gag Glu	aag Lys	aat Asn	ggg Gly	cat His 330	gcc Ala	aaa Lys	gac Asp	cac His	ccc Pro 335	aag Lys	
att Ile	gcc Ala	aag Lys	atc Ile 340	ttt Phe	gag Glu	atc Ile	cag Gln	acc Thr 345	atg Met	ccc Pro	aat Asn	ggc Gly	aaa Lys 350	acc Thr	cgg Arg	1104
acc Thr	tcc Ser	ctc Leu 355	aag Lys	acc Thr	atg Met	agc Ser	cgt Arg 360	agg Arg	aag Lys	ctc Leu	tcc Ser	cag Gln 365	cag Gln	aag Lys	gag Glu	
aag Lys	aaa Lys 370	gcc Ala	act Thr	cag Gln	atg Met	ctc Leu 375	gcc Ala	att Ile	gtt Val	ctc Leu	ggc Gly 380	gtg Val	ttc Phe	atc Ile	atc Ile	1200
tgc Cys 385	tgg Trp	ctg Leu	ccc Pro	ttc Phe	ttc Phe 390	atc Ile	aca Thr	cac His	atc Ile	ctg Leu 395	aac Asn	ata Ile	cac His	tgt Cys	gac Asp 400	
tgc Cys	aac Asn	atc Ile	ccg Pro	cct Pro 405	gtc Val	ctg Leu	tac Tyr	agc Ser	gcc Ala 410	ttc Phe	acg Thr	tgg Trp	ctg Leu	ggc Gly 415	tat Tyr	1296
gtc Val	aac Asn	agc Ser	gcc Ala 420	gtg Val	aac Asn	ccc Pro	atc Ile	atc Ile 425	tac Tyr	acc Thr	acc Thr	ttc Phe	aac Asn 430	att Ile	gag Glu	
ttc Phe	cgc Arg	aag Lys 435	gcc Ala	ttc Phe	ctg Leu	aag Lys	atc Ile 440	ctc Leu	cac His	tgc Cys	agg Arg 445	agg Arg 445	gcc Ala	cgc Arg	ttc Phe	1392
gtg Val	tcc Ser 450	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 455	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 460	aac Asn	att Ile	cga Arg	gag Glu	
cag Gln 465	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 470	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 475	ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 480	1488
tgg Trp	cca Pro	cac His	act Thr	ctg Leu 485	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 490	tcc Ser	ttc Phe	ctg Leu	tgc Cys	agc Ser 495	tgg Trp	
ctg Leu	ctc Leu	ttt Phe	gcc Ala 500	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 505	atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 510	ggg Gly	gac Asp	1584
ctg Leu	gcc Ala	ccc Pro 515	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 520	gtg Val	ccc Pro	tgc Cys	gtc Val	aca Thr 525	agc Ser	atc Ile	cac His	
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ggg Gly 545	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 550	gtg Val	aca Thr	gag Glu	gaa Glu	tgt Cys 555	ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 560	
att Ile	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met	1728

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agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	1920						
Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu							
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ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	1968						
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gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	2064						
Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu							
			675				680					685										
cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	2112						
His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val							
			690				695					700										
gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	2160						
Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp							
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gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	2208						
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ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt		2301						
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 <211> 767
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 92

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Asn	Trp	Ser	Arg	Pro	Phe	Asn	Gly	Ser	Asp	Gly	Lys	Ala	Asp	Arg	Pro
			20					25					30		

259

His Tyr Asn₃₅ Tyr Tyr Ala Thr Leu₄₀ Leu Thr Leu₄₅ Ile Ala Val Ile

Val Phe₅₀ Gly Asn Val Leu₅₅ Val Cys Met Ala Val Ser Arg Glu Lys Ala

Leu₆₅ Gln Thr Thr Thr Asn₇₀ Tyr Leu Ile Val Ser₇₅ Leu Ala Val Ala Asp₈₀

Leu Leu Val Ala Thr₈₅ Leu Val Met Pro Trp₉₀ Val Val Tyr Leu Glu₉₅ Val

Val Gly Glu Trp₁₀₀ Lys Phe Ser Arg Ile₁₀₅ His Cys Asp Ile Phe₁₁₀ Val Thr

Leu Asp Val₁₁₅ Met Met Cys Thr Ala₁₂₀ Ser Ile Leu Asn Leu₁₂₅ Cys Ala Ile

Ser Ile₁₃₀ Asp Arg Tyr Thr Ala₁₃₅ Val Ala Met Pro Met₁₄₀ Leu Tyr Asn Thr

Arg Tyr Ser Ser Lys Arg₁₅₀ Arg Val Thr Val Met₁₅₅ Ile Ser Ile Val Trp₁₆₀

Val Leu Ser Phe Thr₁₆₅ Ile Ser Cys Pro Leu₁₇₀ Leu Phe Gly Leu Asn₁₇₅ Asn

Ala Asp Gln Asn₁₈₀ Glu Cys Ile Ile Ala₁₈₅ Asn Pro Ala Phe Val₁₉₀ Val Tyr

Ser Ser Ile₁₉₅ Val Ser Phe Tyr Val₂₀₀ Pro Phe Ile Val Thr₂₀₅ Leu Leu Val

Tyr Ile₂₁₀ Lys Ile Tyr Ile Val₂₁₅ Leu Arg Arg Arg Arg₂₂₀ Lys Arg Val Asn

Thr Lys Arg Ser Ser Arg₂₃₀ Ala Phe Arg Ala His₂₃₅ Leu Arg Ala Pro Leu₂₄₀

Lys Gly Asn Cys Thr₂₄₅ His Pro Glu Asp Met₂₅₀ Lys Leu Cys Thr Val₂₅₅ Ile

Met Lys Ser Asn₂₆₀ Gly Ser Phe Pro Val₂₆₅ Asn Arg Arg Arg Val₂₇₀ Glu Ala

Ala Arg Arg₂₇₅ Ala Gln Glu Leu Glu₂₈₀ Met Glu Met Leu Ser₂₈₅ Ser Thr Ser

Pro Pro₂₉₀ Glu Arg Thr Arg Tyr₂₉₅ Ser Pro Ile Pro₃₀₀ Ser His His Gln

Leu Thr Leu Pro Asp Pro Ser His His Gly Leu His Ser Thr Pro Asp

305										260							320
										315							
Ser	Pro	Ala	Lys	Pro	Glu	Lys	Asn	Gly	His	Ala	Lys	Asp	His	Pro	Lys		
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Ile	Ala	Lys	Ile	Phe	Glu	Ile	Gln	Thr	Met	Pro	Asn	Gly	Lys	Thr	Arg		
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Thr	Ser	Leu	Lys	Thr	Met	Ser	Arg	Arg	Lys	Leu	Ser	Gln	Gln	Lys	Glu		
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Lys	Lys	Ala	Thr	Gln	Met	Leu	Ala	Ile	Val	Leu	Gly	Val	Phe	Ile	Ile		
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Cys	Trp	Leu	Pro	Phe	Phe	Ile	Thr	His	Ile	Leu	Asn	Ile	His	Cys	Asp		
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Cys	Asn	Ile	Pro	Pro	Val	Leu	Tyr	Ser	Ala	Phe	Thr	Trp	Leu	Gly	Tyr		
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Val	Asn	Ser	Ala	Val	Asn	Pro	Ile	Ile	Tyr	Thr	Thr	Phe	Asn	Ile	Glu		
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Phe	Arg	Lys	Ala	Phe	Leu	Lys	Ile	Leu	His	Cys	Arg	Arg	Ala	Arg	Phe		
		435					440					445					
Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His	Lys	Asn	Ile	Arg	Glu		
	450					455					460						
Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	Thr	Thr	Leu	Val	Asp	Leu	Lys		
465					470					475					480		
Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser	Phe	Leu	Cys	Ser	Trp		
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Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	Gly	Asp		
			500					505					510				
Leu	Ala	Pro	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His		
		515					520					525					
Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile		
	530					535					540						
Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu		
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Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met		
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Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu		
			580					585					590				

Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg
595 600 605

Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile
610 615 620

Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
625 630 635 640

Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
645 650 655

Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
660 665 670

Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
675 680 685

His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
690 695 700

Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
705 710 715 720

Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
725 730 735

Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val
740 745 750

Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
755 760 765

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agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg 96
Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
20 25 30

gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg 144

Val	Val	Gly 35	Met	Gly	Ile	Val	Met 40	Ser	262 Leu	Ile	Val	Leu 45	Ala	Ile	Val	
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cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp 110	act Thr 110	tcc Ser	att Ile	336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
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tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
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aag Lys	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly	960

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gaa Glu	cag Gln 370	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr	1152
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggg Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400	1200
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	610					615					620					
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Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	
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Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	
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Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	
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gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	2256
Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	
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Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	
		755					760					765				
ctc	gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	2352
Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	
	770					775					780					
aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc			2394
Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser			
					790					795						

<210> 94
 <211> 798
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 94

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
1 5 10 15

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp

20 25 265 30
 Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300

Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Gly Asn
 340 345 350
 Gly Tyr Ser Ser Asn Gly Asn Thr Gly Glu Gln Ser Gly Tyr His Val
 355 360 365
 Glu Gln Glu Lys Glu Asn Lys Leu Leu Cys Glu Asp Leu Pro Gly Thr
 370 375 380
 Glu Asp Phe Val Gly His Gln Gly Thr Val Pro Ser Asp Asn Ile Asp
 385 390 395 400
 Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu Tyr Arg Thr
 405 410 415
 Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val
 420 425 430
 Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe
 435 440 445
 Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr
 450 455 460
 Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu
 465 470 475 480
 Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile
 485 490 495
 Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu
 500 505 510
 Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala
 515 520 525
 Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg
 530 535 540
 Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln
 545 550 555 560
 Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe
 565 570 575

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

Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu
595 600 605

Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His
610 615 620

Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
625 630 635 640

Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
645 650 655

Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
660 665 670

Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
675 680 685

Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
690 695 700

Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
705 710 715 720

Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
725 730 735

Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
740 745 750

Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr
755 760 765

Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala
770 775 780

Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
785 790 795

<210> 95
<211> 2226
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2226)

<400>	95																
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agc Ser	cat His	gcg Ala	ccg Pro 20	gac Asp	cac His	gac Asp	gtc Val	acg Thr 25	cag Gln	caa Gln	agg Arg	gac Asp	gag Glu 30	gtg Val	tgg Trp		96
gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val		144
ttt Phe	ggc Gly 50	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu		192
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80		240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met		288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile		336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala		384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu		432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160		480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala		528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp		576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe		624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln		672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240		720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His		768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu		816

aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggg Gly 320	960
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe	1008
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	ggc Gly	aat Asn	1056
ggc Gly	tac Tyr	tcc Ser 355	agc Ser	aac Asn	ggc Gly	aac Asn	aca Thr 360	ggg Gly	gag Glu	cag Gln	agt Ser	gga Gly 365	tat Tyr	cac His	gtg Val	1104
gaa Glu	cag Gln 370	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr	1152
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggg Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400	1200
tca Ser	caa Gln	ggg Gly	agg Arg	aat Asn 405	tgt Cys	agt Ser	aca Thr	aat Asn	gac Asp 410	tca Ser	ctg Leu	cta Leu	tac Tyr	cgt Arg 415	act Thr	1248
cga Arg	gag Glu	agg Arg	agg Arg 420	gcc Ala	cgc Arg	ttc Phe	gtg Val	tcc Ser 425	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 430	aac Asn	gtc Val	1296
gcc Ala	cac His	aag Lys 435	aac Asn	att Ile	cga Arg	gag Glu	cag Gln 440	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 445	gat Asp	gtg Val	ttc Phe	1344
acc Thr	acg Thr 450	ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 455	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 460	ctc Leu	att Ile	ttc Phe	acc Thr	1392
atg Met 465	tcc Ser	ttc Phe	ctg Leu	tgc Cys	agc Ser 470	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 475	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 480	1440
atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 485	ggg Gly	gac Asp	ctg Leu	gcc Ala	ccc Pro 490	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 495	gtg Val	1488
ccc Pro	tgc Cys	gtc Val	aca Thr 500	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 505	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 510	ttc Phe	tcc Ser	1536
atc Ile	gag Glu	gtc Val 515	cag Gln	gtg Val	acc Thr	att Ile	ggg Gly 520	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 525	gtg Val	aca Thr	gag Glu	1584
gaa Glu	tgt Cys 530	ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 535	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 540	aat Asn	atc Ile	gtc Val	ggg Gly	1632

270

ctg Leu 545	atg Met	atc Ile	aac Asn	gcc Ala	atc Ile 550	atg Met	ctg Leu	ggc Gly	tgc Cys	atc Ile 555	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 560	1680
cag Gln	gca Ala	cat His	cgg Arg	cgg Arg 565	gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 570	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 575	gtg Val	1728
atc Ile	acc Thr	ctg Leu	cgc Arg 580	cat His	ggc Gly	cgc Arg	ctg Leu	tgc Cys 585	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 590	ggg Gly	gac Asp	1776
ctc Leu	cga Arg	aag Lys 595	agc Ser	atg Met	atc Ile	att Ile	agc Ser 600	gcc Ala	acc Thr	atc Ile	cac His	atg Met 605	cag Gln	gtg Val	gtg Val	1824
cgc Arg	aag Lys 610	acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 615	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 620	ctc Leu	cac His	cag Gln	gta Val	1872
gac Asp 625	atc Ile	ccc Pro	atg Met	gag Glu	aat Asn 630	ggc Gly	gtg Val	ggg Gly	ggg Gly	aac Asn 635	ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val 640	1920
gcc Ala	cca Pro	ctc Leu	atc Ile	atc Ile 645	tac Tyr	cac His	gtc Val	atc Ile	gac Asp 650	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu 655	tac Tyr	1968
gac Asp	ctg Leu	gct Ala	cct Pro 660	agt Ser	gac Asp	ctg Leu	cac His	cac His 665	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 670	atc Ile	att Ile	2016
gtc Val	atc Ile	ttg Leu 675	gaa Glu	ggc Gly	gtg Val	gta Val	gaa Glu 680	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr	cag Gln	gcc Ala	2064
cgc Arg	acc Thr 690	tcc Ser	tac Tyr	cta Leu	gct Ala	gac Asp 695	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly 700	cag Gln	cgc Arg	ttt Phe	gtc Val	2112
ccc Pro 705	att Ile	gtg Val	gcc Ala	gag Glu	gag Glu 710	gac Asp	ggc Gly	cgc Arg	tat Tyr	tct Ser 715	gtg Val	gac Asp	tac Tyr	tcc Ser	aaa Lys 720	2160
ttt Phe	ggg Gly	aac Asn	acc Thr	att Ile 725	aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro 730	ctc Leu	tgc Cys	aca Thr	gcc Ala	cgc Arg 735	cag Gln	2208
ctt Leu	gat Asp	gag Glu	gac Asp 740	cgc Arg	agt Ser											2226

<210> 96
 <211> 742
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 96

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

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300

Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Gly Asn
 340 345 350
 Gly Tyr Ser Ser Asn Gly Asn Thr Gly Glu Gln Ser Gly Tyr His Val
 355 360 365
 Glu Gln Glu Lys Glu Asn Lys Leu Leu Cys Glu Asp Leu Pro Gly Thr
 370 375 380
 Glu Asp Phe Val Gly His Gln Gly Thr Val Pro Ser Asp Asn Ile Asp
 385 390 395 400
 Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu Tyr Arg Thr
 405 410 415
 Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val
 420 425 430
 Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe
 435 440 445
 Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr
 450 455 460
 Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu
 465 470 475 480
 Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val
 485 490 495
 Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser
 500 505 510
 Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu
 515 520 525
 Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly
 530 535 540
 Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala
 545 550 555 560
 Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val
 565 570 575

273

Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp
580 585 590

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

Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val
610 615 620

Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val
625 630 635 640

Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr
645 650 655

Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile
660 665 670

Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala
675 680 685

Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val
690 695 700

Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys
705 710 715 720

Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln
725 730 735

Leu Asp Glu Asp Arg Ser
740

<210> 97
<211> 2334
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2334)

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1 5 10 15	
agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg	96
Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp	
20 25 30	
gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg	144
Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val	
35 40 45	

ttt	ggc	aat	gtg	ctg	gtc	atc	aca	gcc	att	gcc	aag	ttc	gag	cgt	ctg	192
Phe	Gly	Asn	Val	Leu	Val	Ile	Thr	Ala	Ile	Ala	Lys	Phe	Glu	Arg	Leu	
50						55					60					
cag	acg	gtc	acc	aac	tac	ttc	atc	act	tca	ctg	gcc	tgt	gct	gat	ctg	240
Gln	Thr	Val	Thr	Asn	Tyr	Phe	Ile	Thr	Ser	Leu	Ala	Cys	Ala	Asp	Leu	
65					70					75					80	
gtc	atg	ggc	cta	gca	gtg	gtg	ccc	ttt	ggg	gcc	gcc	cat	att	ctt	atg	288
Val	Met	Gly	Leu	Ala	Val	Val	Pro	Phe	Gly	Ala	Ala	His	Ile	Leu	Met	
				85					90					95		
aaa	atg	tgg	act	ttt	ggc	aac	ttc	tgg	tgc	gag	ttt	tgg	act	tcc	att	336
Lys	Met	Trp	Thr	Phe	Gly	Asn	Phe	Trp	Cys	Glu	Phe	Trp	Thr	Ser	Ile	
			100					105					110			
gat	gtg	ctg	tgc	gtc	acg	gcc	agc	att	gag	acc	ctg	tgc	gtg	atc	gca	384
Asp	Val	Leu	Cys	Val	Thr	Ala	Ser	Ile	Glu	Thr	Leu	Cys	Val	Ile	Ala	
		115					120					125				
gtg	gat	cgc	tac	ttt	gcc	att	act	tca	cct	ttc	aag	tac	cag	agc	ctg	432
Val	Asp	Arg	Tyr	Phe	Ala	Ile	Thr	Ser	Pro	Phe	Lys	Tyr	Gln	Ser	Leu	
	130					135					140					
ctg	acc	aag	aat	aag	gcc	cgg	gtg	atc	att	ctg	atg	gtg	tgg	att	gtg	480
Leu	Thr	Lys	Asn	Lys	Ala	Arg	Val	Ile	Ile	Leu	Met	Val	Trp	Ile	Val	
145					150					155					160	
tca	ggc	ctt	acc	tcc	ttc	ttg	ccc	att	cag	atg	cac	tgg	tac	agg	gcc	528
Ser	Gly	Leu	Thr	Ser	Phe	Leu	Pro	Ile	Gln	Met	His	Trp	Tyr	Arg	Ala	
				165					170					175		
acc	cac	cag	gaa	gcc	atc	aac	tgc	tat	gcc	aat	gag	acc	tgc	tgt	gac	576
Thr	His	Gln	Glu	Ala	Ile	Asn	Cys	Tyr	Ala	Asn	Glu	Thr	Cys	Cys	Asp	
			180					185					190			
ttc	ttc	acg	aac	caa	gcc	tat	gcc	att	gcc	tct	tcc	atc	gtg	tcc	ttc	624
Phe	Phe	Thr	Asn	Gln	Ala	Tyr	Ala	Ile	Ala	Ser	Ser	Ile	Val	Ser	Phe	
		195					200					205				
tac	gtt	ccc	ctg	gtg	atc	atg	gtc	ttc	gtc	tac	tcc	agg	gtc	ttt	cag	672
Tyr	Val	Pro	Leu	Val	Ile	Met	Val	Phe	Val	Tyr	Ser	Arg	Val	Phe	Gln	
	210					215					220					
gag	gcc	aaa	agg	cag	ctc	cag	aag	att	gac	aaa	tct	gag	ggc	cgc	ttc	720
Glu	Ala	Lys	Arg	Gln	Leu	Gln	Lys	Ile	Asp	Lys	Ser	Glu	Gly	Arg	Phe	
225					230					235					240	
cat	gtc	cag	aac	ctt	agc	cag	gtg	gag	cag	gat	ggg	cgg	acg	ggg	cat	768
His	Val	Gln	Asn	Leu	Ser	Gln	Val	Glu	Gln	Asp	Gly	Arg	Thr	Gly	His	
				245					250					255		
gga	ctc	cgc	aga	tct	tcc	aag	ttc	tgc	ttg	aag	gag	cac	aaa	gcc	ctc	816
Gly	Leu	Arg	Arg	Ser	Ser	Lys	Phe	Cys	Leu	Lys	Glu	His	Lys	Ala	Leu	
			260					265					270			
aag	acg	tta	ggc	atc	atc	atg	ggc	act	ttc	acc	ctc	tgc	tgg	ctg	ccc	864
Lys	Thr	Leu	Gly	Ile	Ile	Met	Gly	Thr	Phe	Thr	Leu	Cys	Trp	Leu	Pro	
		275					280					285				
ttc	ttc	atc	gtt	aac	att	gtg	cat	gtg	atc	cag	gat	aac	ctc	atc	cgt	912
Phe	Phe	Ile	Val	Asn	Ile	Val	His	Val	Ile	Gln	Asp	Asn	Leu	Ile	Arg	
	290					295					300					
aag	gaa	gtt	tac	atc	ctc	cta	aat	tgg	ata	ggc	tat	gtc	aat	tct	ggt	960
Lys	Glu	Val	Tyr	Ile	Leu	Leu	Asn	Trp	Ile	Gly	Tyr	Val	Asn	Ser	Gly	
305					310					315					320	

275																1008
ttc	aat	ccc	ctt	atc	tac	tgc	cgg	agc	cca	gat	ttc	agg	att	gcc	ttc	
Phe	Asn	Pro	Leu	Ile	Tyr	Cys	Arg	Ser	Pro	Asp	Phe	Arg	Ile	Ala	Phe	
				325					330					335		
cag	gag	ctt	ctg	tgc	ctg	cgc	agg	tct	tct	ttg	aag	gcc	tat	ggc	aat	1056
Gln	Glu	Leu	Leu	Cys	Leu	Arg	Arg	Ser	Ser	Leu	Lys	Ala	Tyr	Gly	Asn	
			340					345					350			
ggc	tac	tcc	agc	aac	ggc	aac	aca	ggg	gag	cag	agt	gga	tat	cac	gtg	1104
Gly	Tyr	Ser	Ser	Asn	Gly	Asn	Thr	Gly	Glu	Gln	Ser	Gly	Tyr	His	Val	
		355					360					365				
gaa	cag	gag	aaa	gaa	aat	aaa	ctg	ctg	tgt	gaa	gac	ctc	cca	ggc	acg	1152
Glu	Gln	Glu	Lys	Glu	Asn	Lys	Leu	Leu	Cys	Glu	Asp	Leu	Pro	Gly	Thr	
	370					375					380					
gaa	gac	ttt	gtg	ggc	cat	caa	ggg	act	gtg	cct	agc	gat	aac	att	gat	1200
Glu	Asp	Phe	Val	Gly	His	Gln	Gly	Thr	Val	Pro	Ser	Asp	Asn	Ile	Asp	
385					390					395					400	
tca	caa	ggg	agg	aat	tgt	agt	aca	aat	gac	tca	ctg	cta	tac	cgt	act	1248
Ser	Gln	Gly	Arg	Asn	Cys	Ser	Thr	Asn	Asp	Ser	Leu	Leu	Tyr	Arg	Thr	
				405					410					415		
cga	gag	agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	1296
Arg	Glu	Arg	Arg	Ala	Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	
			420					425					430			
gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	1344
Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	
		435					440					445				
acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	acc	1392
Thr	Thr	Leu	Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	
	450					455					460					
atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	1440
Met	Ser	Phe	Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	
465					470					475					480	
atc	gcc	ttc	gcc	cac	ggg	gac	ctg	gcc	ccc	gga	gag	ggc	acc	aat	gtg	1488
Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Ala	Pro	Gly	Glu	Gly	Thr	Asn	Val	
				485					490					495		
ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	1536
Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	Ser	
			500					505					510			
atc	gag	gtc	cag	gtg	acc	att	ggg	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	1584
Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	Glu	
		515					520					525				
gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	1632
Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	Gly	
	530					535					540					
ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	1680
Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	
545					550					555					560	
cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	1728
Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	Val	
				565					570					575		
atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	1776
Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	
			580					585					590			
ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	1824

Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val		
		595					600			276		605					
cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta		1872
Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val		
	610					615					620						
gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc	atc	ttc	ctg	gtg		1920
Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val		
	625				630					635					640		
gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac		1968
Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr		
				645					650					655			
gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att		2016
Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile		
			660				665						670				
gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc		2064
Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala		
		675					680					685					
cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc		2112
Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val		
	690					695					700						
ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa		2160
Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys		
					710					715					720		
ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag		2208
Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln		
				725					730					735			
ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg		2256
Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser		
			740					745					750				
cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc		2304
Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro		
		755					760					765					
aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc								2334
Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser								
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 <212> PRT
 <213> Artificial sequence

<220>
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<400> 98

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Ser	His	Ala	Pro	Asp	His	Asp	Val	Thr	Gln	Gln	Arg	Asp	Glu	Val	Trp		
			20					25					30				
Val	Val	Gly	Met	Gly	Ile	Val	Met	Ser	Leu	Ile	Val	Leu	Ala	Ile	Val		
		35					40					45					

Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300
 Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320

Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335

Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Gly Asn
 340 345 350

Gly Tyr Ser Ser Asn Gly Asn Thr Gly Glu Gln Ser Gly Tyr His Val
 355 360 365

Glu Gln Glu Lys Glu Asn Lys Leu Leu Cys Glu Asp Leu Pro Gly Thr
 370 375 380

Glu Asp Phe Val Gly His Gln Gly Thr Val Pro Ser Asp Asn Ile Asp
 385 390 395 400

Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu Tyr Arg Thr
 405 410 415

Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val
 420 425 430

Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe
 435 440 445

Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr
 450 455 460

Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu
 465 470 475 480

Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val
 485 490 495

Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser
 500 505 510

Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu
 515 520 525

Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly
 530 535 540

Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala
 545 550 555 560

Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val
 565 570 575

Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp
 580 585 590

Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val

595 600 279 605
 Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val
 610 615 620
 Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val
 625 630 635 640
 Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr
 645 650 655
 Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile
 660 665 670
 Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala
 675 680 685
 Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val
 690 695 700
 Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys
 705 710 715 720
 Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln
 725 730 735
 Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser
 740 745 750
 Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro
 755 760 765
 Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
 770 775

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 <211> 2286
 <212> DNA
 <213> Artificial sequence

<220>
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<220>
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 <222> (1)..(2286)

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 agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg 96
 Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30

280																
gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val	144
ttt Phe	ggc Gly 50	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu	192
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile	336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag	gaa	gtt	tac	atc	ctc	cta	aat	tgg	ata	ggc	tat	gtc	aat	tct	ggt	960

Lys 305	Glu	Val	Tyr	Ile	Leu 310	Leu	Asn	Trp	Ile	281 Gly 315		Tyr	Val	Asn	Ser	Gly 320	
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cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	ggc Gly	aat Asn	1056	
ggc Gly	tac Tyr	tcc Ser 355	agc Ser	aac Asn	ggc Gly	aac Asn	aca Thr 360	ggg Gly	gag Glu	cag Gln	agt Ser	gga Gly 365	tat Tyr	cac His	gtg Val	1104	
gaa Glu	cag Gln 370	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr	1152	
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggg Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400	1200	
tca Ser	caa Gln	ggg Gly	agg Arg	aat Asn 405	tgt Cys	agt Ser	aca Thr	aat Asn	gac Asp 410	tca Ser	ctg Leu	cta Leu	tac Tyr	cgt Arg 415	act Thr	1248	
cga Arg	gag Glu	agg Arg	agg Arg 420	gcc Ala	cgc Arg	ttc Phe	gtg Val	tcc Ser 425	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 430	aac Asn	gtc Val	1296	
gcc Ala	cac His	aag Lys 435	aac Asn	att Ile	cga Arg	gag Glu	cag Gln 440	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 445	gat Asp	gtg Val	ttc Phe	1344	
acc Thr	acg Thr 450	ctg Leu	gtg Val	gac Asp	ctc Leu	aaa Lys 455	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 460	ctc Leu	att Ile	ttc Phe	acc Thr	1392	
atg Met 465	tcc Ser	ttc Phe	ctg Leu	tgc Cys	agc Ser 470	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 475	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 480	1440	
atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 485	ggg Gly	gat Asp	ctc Leu	tat Tyr	gct Ala 490	tac Tyr	atg Met	gag Glu	aaa Lys	ggc Gly 495	atc Ile	1488	
acg Thr	gac Asp	ctg Leu	gcc Ala 500	ccc Pro	tac Tyr	cca Pro	tac Tyr	gat Asp 505	gta Val	cca Pro	gat Asp	tac Tyr	gcc Ala 510	gga Gly	gag Glu	1536	
ggc Gly	acc Thr	aat Asn 515	gtg Val	ccc Pro	tgc Cys	gtc Val	aca Thr 520	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 525	tca Ser	tct Ser	gcc Ala	1584	
ttc Phe	ctt Leu 530	ttc Phe	tcc Ser	atc Ile	gag Glu	gtc Val 535	cag Gln	gtg Val	acc Thr	att Ile	ggg Gly 540	ttc Phe	ggc Gly	ggg Gly	cgc Arg	1632	
atg Met 545	gtg Val	aca Thr	gag Glu	gaa Glu	tgt Cys 550	ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 555	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 560	1680	
aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu 565	atg Met	atc Ile	aac Asn	gcc Ala	atc Ile 570	atg Met	ctg Leu	ggc Gly	tgc Cys	atc Ile 575	ttc Phe	1728	
atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser	1776	

580								282				585				590				
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Lys	His	Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu					
		595					600					605								
cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac		1872			
Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His					
	610					615					620									
atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct		1920			
Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro					
	625				630					635					640					
ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc		1968			
Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly					
				645					650					655						
atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac		2016			
Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn					
			660					665					670							
agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac		2064			
Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp					
		675					680					685								
ctg	gag	atc	att	gtc	atc	tgt	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc		2112			
Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile					
	690					695					700									
acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg		2160			
Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly					
	705				710				715						720					
cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg		2208			
Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val					
				725				730						735						
gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc		2256			
Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys					
			740					745					750							
aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt								2286			
Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser											
		755					760													

<210> 100
 <211> 762
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Synthetic Construct

 <400> 100

Met	Gly	Gln	Pro	Gly	Asn	Gly	Ser	Ala	Phe	Leu	Leu	Ala	Pro	Asn	Gly
1				5					10					15	
Ser	His	Ala	Pro	Asp	His	Asp	Val	Thr	Gln	Gln	Arg	Asp	Glu	Val	Trp
			20					25					30		
Val	Val	Gly	Met	Gly	Ile	Val	Met	Ser	Leu	Ile	Val	Leu	Ala	Ile	Val
		35					40					45			

Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala²⁸³ Lys Phe Glu Arg Leu
 50 55 60

Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95

Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110

Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125

Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140

Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160

Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175

Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190

Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205

Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220

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

His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255

Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270

Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285

Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300

Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320

Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe

[illegible]

Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His
610 615 620

Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
625 630 635 640

Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
645 650 655

Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
660 665 670

Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
675 680 685

Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
690 695 700

Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
705 710 715 720

Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
725 730 735

Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
740 745 750

Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
755 760

<210> 101
<211> 2205
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2205)

<400> 101	
atg ggg caa ccc ggg aac ggc agc gcc ttc ttg ctg gca ccc aat gga	48
Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly	
1 5 10 15	
agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg	96
Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp	
20 25 30	
gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg	144
Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val	
35 40 45	
ttt ggc aat gtg ctg gtc atc aca gcc att gcc aag ttc gag cgt ctg	192

286																
Phe	Gly 50	Asn	Val	Leu	Val	Ile 55	Thr	Ala	Ile	Ala	Lys 60	Phe	Glu	Arg	Leu	
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile	336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320	960
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala	ttc Phe	1008

325				330 ²⁸⁷				335									
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	tac Tyr	cgt Arg	1056	
act Thr	cga Arg	gag Glu 355	agg Arg	agg Arg	gcc Ala	cgc Arg	ttc Phe 360	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly 365	aac Asn	tgc Cys	aac Asn	1104	
gtc Val	gcc Ala 370	cac His	aag Lys	aac Asn	att Ile	cga Arg 375	gag Glu	cag Gln	ggc Gly	cgc Arg	ttc Phe 380	ctg Leu	cag Gln	gat Asp	gtg Val	1152	
ttc Phe 385	acc Thr	acg Thr	ctg Leu	gtg Val	gac Asp 390	ctc Leu	aaa Lys	tgg Trp	cca Pro	cac His 395	act Thr	ctg Leu	ctc Leu	att Ile	ttc Phe 400	1200	
acc Thr	atg Met	tcc Ser	ttc Phe	ctg Leu 405	tgc Cys	agc Ser	tgg Trp	ctg Leu	ctc Leu 410	ttt Phe	gcc Ala	atg Met	gtc Val	tgg Trp 415	tgg Trp	1248	
ctc Leu	atc Ile	gcc Ala	ttc Phe 420	gcc Ala	cac His	ggc Gly	gat Asp	ctc Leu 425	tat Tyr	gct Ala	tac Tyr	atg Met	gag Glu 430	aaa Lys	ggc Gly	1296	
atc Ile	acg Thr	gac Asp 435	ctg Leu	gcc Ala	ccc Pro	tac Tyr	cca Pro 440	tac Tyr	gat Asp	gta Val	cca Pro	gat Asp 445	tac Tyr	gcc Ala	gga Gly	1344	
gag Glu	ggc Gly 450	acc Thr	aat Asn	gtg Val	ccc Pro	tgc Cys 455	gtc Val	aca Thr	agc Ser	atc Ile	cac His 460	tcc Ser	ttt Phe	tca Ser	tct Ser	1392	
gcc Ala 465	ttc Phe	ctt Leu	ttc Phe	tcc Ser	atc Ile 470	gag Glu	gtc Val	cag Gln	gtg Val	acc Thr 475	att Ile	ggc Gly	ttc Phe	ggc Gly	ggg Gly 480	1440	
cgc Arg	atg Met	gtg Val	aca Thr	gag Glu 485	gaa Glu	tgt Cys	ccc Pro	ctg Leu	gcc Ala 490	atc Ile	ctc Leu	att Ile	ctc Leu	att Ile 495	gtg Val	1488	
cag Gln	aat Asn	atc Ile	gtc Val 500	ggg Gly	ctg Leu	atg Met	atc Ile	aac Asn 505	gcc Ala	atc Ile	atg Met	ctg Leu	ggc Gly 510	tgc Cys	atc Ile	1536	
ttc Phe	atg Met	aaa Lys 515	acg Thr	gcc Ala	cag Gln	gca Ala	cat His 520	cgg Arg	cgg Arg	gca Ala	gaa Glu	acc Thr 525	ctc Leu	atc Ile	ttc Phe	1584	
agc Ser	aag Lys 530	cat His	gct Ala	gtg Val	atc Ile	acc Thr 535	ctg Leu	cgc Arg	cat His	ggc Gly	cgc Arg 540	ctg Leu	tgc Cys	ttc Phe	atg Met	1632	
ctg Leu 545	cgc Arg	gta Val	ggg Gly	gac Asp	ctc Leu 550	cga Arg	aag Lys	agc Ser	atg Met	atc Ile 555	att Ile	agc Ser	gcc Ala	acc Thr	atc Ile 560	1680	
cac His	atg Met	cag Gln	gtg Val	gtg Val 565	cgc Arg	aag Lys	acc Thr	acc Thr	agc Ser 570	ccc Pro	gag Glu	ggc Gly	gaa Glu	gtt Val 575	gtg Val	1728	
cct Pro	ctc Leu	cac His	cag Gln 580	gta Val	gac Asp	atc Ile	ccc Pro	atg Met 585	gag Glu	aat Asn	ggc Gly	gtg Val	ggc Gly 590	ggc Gly	aac Asn	1776	
ggc Gly	atc Ile	ttc Phe 595	ctg Leu	gtg Val	gcc Ala	cca Pro	ctc Leu 600	atc Ile	atc Ile	tac Tyr	cac His	gtc Val 605	atc Ile	gac Asp	tcc Ser	1824	

aac agc ccg ctc tac gac ctg gct cct agt gac ctg cac cac cac cag	1872
Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln	
610 615 620	
gac ctg gag atc att gtc atc ttg gaa ggc gtg gta gaa acc acg ggc	1920
Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly	
625 630 635 640	
atc acc acc cag gcc cgc acc tcc tac cta gct gac gag att cta tgg	1968
Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp	
645 650 655	
ggg cag cgc ttt gtc ccc att gtg gcc gag gag gac ggc cgc tat tct	2016
Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser	
660 665 670	
gtg gac tac tcc aaa ttt ggt aac acc att aaa gtg ccc aca cca ctc	2064
Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu	
675 680 685	
tgc aca gcc cgc cag ctt gat gag gac cgc agt ctg ctg gat gcc ctg	2112
Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu	
690 695 700	
acc ctc gcc tcg tcg cgg ggg ccc ctg cgc aag cgc agt gtg gct gtg	2160
Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val	
705 710 715 720	
gcg aag gcc aag ccc aag ttt agc atc tct cca gat tcc ttg tcc	2205
Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser	
725 730 735	

<210> 102
 <211> 735
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 102

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

289

100	105	110
Asp Val Leu ₁₁₅ Cys Val Thr Ala Ser ₁₂₀ Ile Glu Thr Leu Cys ₁₂₅ Val Ile Ala		
Val Asp ₁₃₀ Arg Tyr Phe Ala Ile ₁₃₅ Thr Ser Pro Phe Lys ₁₄₀ Tyr Gln Ser Leu		
Leu ₁₄₅ Thr Lys Asn Lys Ala ₁₅₀ Arg Val Ile Ile Leu ₁₅₅ Met Val Trp Ile Val ₁₆₀		
Ser Gly Leu Thr Ser ₁₆₅ Phe Leu Pro Ile Gln ₁₇₀ Met His Trp Tyr Arg ₁₇₅ Ala		
Thr His Gln Glu ₁₈₀ Ala Ile Asn Cys Tyr ₁₈₅ Ala Asn Glu Thr Cys ₁₉₀ Cys Asp		
Phe Phe Thr ₁₉₅ Asn Gln Ala Tyr Ala ₂₀₀ Ile Ala Ser Ser Ile ₂₀₅ Val Ser Phe		
Tyr Val ₂₁₀ Pro Leu Val Ile Met ₂₁₅ Val Phe Val Tyr Ser ₂₂₀ Arg Val Phe Gln		
Glu ₂₂₅ Ala Lys Arg Gln Leu ₂₃₀ Gln Lys Ile Asp Lys ₂₃₅ Ser Glu Gly Arg Phe ₂₄₀		
His Val Gln Asn Leu ₂₄₅ Ser Gln Val Glu Gln ₂₅₀ Asp Gly Arg Thr Gly ₂₅₅ His		
Gly Leu Arg Arg ₂₆₀ Ser Ser Lys Phe Cys ₂₆₅ Leu Lys Glu His Lys ₂₇₀ Ala Leu		
Lys Thr Leu ₂₇₅ Gly Ile Ile Met Gly ₂₈₀ Thr Phe Thr Leu Cys ₂₈₅ Trp Leu Pro		
Phe Phe ₂₉₀ Ile Val Asn Ile Val ₂₉₅ His Val Ile Gln Asp ₃₀₀ Asn Leu Ile Arg		
Lys ₃₀₅ Glu Val Tyr Ile Leu ₃₁₀ Leu Asn Trp Ile Gly ₃₁₅ Tyr Val Asn Ser Gly ₃₂₀		
Phe Asn Pro Leu Ile ₃₂₅ Tyr Cys Arg Ser Pro ₃₃₀ Asp Phe Arg Ile Ala ₃₃₅ Phe		
Gln Glu Leu Leu ₃₄₀ Cys Leu Arg Arg Ser ₃₄₅ Ser Leu Lys Ala Tyr ₃₅₀ Tyr Arg		
Thr Arg Glu ₃₅₅ Arg Arg Ala Arg Phe ₃₆₀ Val Ser Lys Lys Gly ₃₆₅ Asn Cys Asn		
Val Ala ₃₇₀ His Lys Asn Ile Arg ₃₇₅ Glu Gln Gly Arg Phe ₃₈₀ Leu Gln Asp Val		

Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe
 385 390 395 400
 Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp
 405 410 415
 Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly
 420 425 430
 Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly
 435 440 445
 Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
 450 455 460
 Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly
 465 470 475 480
 Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val
 485 490 495
 Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile
 500 505 510
 Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe
 515 520 525
 Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met
 530 535 540
 Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile
 545 550 555 560
 His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val
 565 570 575
 Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn
 580 585 590
 Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser
 595 600 605
 Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln
 610 615 620
 Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly
 625 630 635 640
 Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp
 645 650 655

Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser
660 665 670

Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu
675 680 685

Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu
690 695 700

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

Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
725 730 735

<210> 103
<211> 2097
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2097)

<400> 103	
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agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp 20 25 30	96
gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val 35 40 45	144
ttt ggc aat gtg ctg gtc atc aca gcc att gcc aag ttc gag cgt ctg Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu 50 55 60	192
cag acg gtc acc aac tac ttc atc act tca ctg gcc tgt gct gat ctg Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu 65 70 75 80	240
gtc atg ggc cta gca gtg gtg ccc ttt ggg gcc gcc cat att ctt atg Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met 85 90 95	288
aaa atg tgg act ttt ggc aac ttc tgg tgc gag ttt tgg act tcc att Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile 100 105 110	336
gat gtg ctg tgc gtc acg gcc agc att gag acc ctg tgc gtg atc gca Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala 115 120 125	384
gtg gat cgc tac ttt gcc att act tca cct ttc aag tac cag agc ctg Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu	432

130			135			292			140									
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160			480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala			528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp			576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe			624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln			672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240			720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His			768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu			816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro			864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg			912
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320			960
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe			1008
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	tac Tyr	cgt Arg			1056
act Thr	cga Arg	gag Glu 355	agg Arg	agg Arg	gcc Ala	cgc Arg	ttc Phe 360	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly 365	aac Asn	tgc Cys	aac Asn			1104
gtc Val	gcc Ala 370	cac His	aag Lys	aac Asn	att Ile	cga Arg 375	gag Glu	cag Gln	ggc Gly	cgc Arg	ttc Phe 380	ctg Leu	cag Gln	gat Asp	gtg Val			1152
ttc Phe 385	acc Thr	acg Thr	ctg Leu	gtg Val	gac Asp 390	ctc Leu	aaa Lys	tgg Trp	cca Pro	cac His 395	act Thr	ctg Leu	ctc Leu	att Ile	ttc Phe 400			1200
acc Thr	atg Met	tcc Ser	ttc Phe	ctg Leu 405	tgc Cys	agc Ser	tgg Trp	ctg Leu	ctc Leu 410	ttt Phe	gcc Ala	atg Met	gtc Val	tgg Trp 415	tgg Trp			1248

ctc Leu	atc Ile	gcc Ala	ttc Phe 420	gcc Ala	cac His	ggg Gly	gat Asp	ctc Leu 425	tat Tyr	gct Ala	tac Tyr	atg Met	gag Glu 430	aaa Lys	ggc Gly	1296
atc Ile	acg Thr	gac Asp 435	ctg Leu	gcc Ala	ccc Pro	tac Tyr	cca Pro 440	tac Tyr	gat Asp	gta Val	cca Pro	gat Asp 445	tac Tyr	gcc Ala	gga Gly	1344
gag Glu	ggc Gly 450	acc Thr	aat Asn	gtg Val	ccc Pro	tgc Cys 455	gtc Val	aca Thr	agc Ser	atc Ile	cac His 460	tcc Ser	ttt Phe	tca Ser	tct Ser	1392
gcc Ala 465	ttc Phe	ctt Leu	ttc Phe	tcc Ser	atc Ile 470	gag Glu	gtc Val	cag Gln	gtg Val	acc Thr 475	att Ile	ggg Gly	ttc Phe	ggc Gly	ggg Gly 480	1440
cgc Arg	atg Met	gtg Val	aca Thr	gag Glu 485	gaa Glu	tgt Cys	ccc Pro	ctg Leu	gcc Ala 490	atc Ile	ctc Leu	att Ile	ctc Leu	att Ile 495	gtg Val	1488
cag Gln	aat Asn	atc Ile	gtc Val 500	ggg Gly	ctg Leu	atg Met	atc Ile	aac Asn 505	gcc Ala	atc Ile	atg Met	ctg Leu	ggc Gly 510	tgc Cys	atc Ile	1536
ttc Phe	atg Met	aaa Lys 515	acg Thr	gcc Ala	cag Gln	gca Ala	cat His 520	cgg Arg	cgg Arg	gca Ala	gaa Glu	acc Thr 525	ctc Leu	atc Ile	ttc Phe	1584
agc Ser	aag Lys 530	cat His	gct Ala	gtg Val	atc Ile	acc Thr 535	ctg Leu	cgc Arg	cat His	ggc Gly	cgc Arg 540	ctg Leu	tgc Cys	ttc Phe	atg Met	1632
ctg Leu 545	cgc Arg	gta Val	ggg Gly	gac Asp	ctc Leu 550	cga Arg	aag Lys	agc Ser	atg Met	atc Ile 555	att Ile	agc Ser	gcc Ala	acc Thr	atc Ile 560	1680
cac His	atg Met	cag Gln	gtg Val	gtg Val 565	cgc Arg	aag Lys	acc Thr	acc Thr	agc Ser 570	ccc Pro	gag Glu	ggc Gly	gaa Glu	gtt Val 575	gtg Val	1728
cct Pro	ctc Leu	cac His	cag Gln 580	gta Val	gac Asp	atc Ile	ccc Pro	atg Met 585	gag Glu	aat Asn	ggc Gly	gtg Val	ggg Gly 590	ggg Gly	aac Asn	1776
ggc Gly	atc Ile	ttc Phe 595	ctg Leu	gtg Val	gcc Ala	cca Pro	ctc Leu 600	atc Ile	atc Ile	tac Tyr	cac His	gtc Val 605	atc Ile	gac Asp	tcc Ser	1824
aac Asn	agc Ser 610	ccg Pro	ctc Leu	tac Tyr	gac Asp	ctg Leu 615	gct Ala	cct Pro	agt Ser	gac Asp	ctg Leu 620	cac His	cac His	cac His	cag Gln	1872
gac Asp 625	ctg Leu	gag Glu	atc Ile	att Ile	gtc Val 630	atc Ile	ttg Leu	gaa Glu	ggc Gly	gtg Val 635	gta Val	gaa Glu	acc Thr	acg Thr	ggc Gly 640	1920
atc Ile	acc Thr	acc Thr	cag Gln	gcc Ala 645	cgc Arg	acc Thr	tcc Ser	tac Tyr	cta Leu 650	gct Ala	gac Asp	gag Glu	att Ile	cta Leu 655	tgg Trp	1968
ggg Gly	cag Gln	cgc Arg	ttt Phe 660	gtc Val	ccc Pro	att Ile	gtg Val	gcc Ala 665	gag Glu	gag Glu	gac Asp	ggc Gly	cgc Arg 670	tat Tyr	tct Ser	2016
gtg Val	gac Asp	tac Tyr 675	tcc Ser	aaa Lys	ttt Phe	ggg Gly	aac Asn 680	acc Thr	att Ile	aaa Lys	gtg Val	ccc Pro 685	aca Thr	cca Pro	ctc Leu	2064

tgc aca gcc cgc cag ctt gat gag gac cgc agt
 Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
 690 695 294

2097

<210> 104
 <211> 699
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 104

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

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
35 40 45

Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
50 55 60

Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
65 70 75 80

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
85 90 95

Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
100 105 110

Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
115 120 125

Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
130 135 140

Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
145 150 155 160

Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
165 170 175

Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
180 185 190

Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
195 200 205

Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
210 215 220

Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300
 Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Tyr Arg
 340 345 350
 Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn
 355 360 365
 Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val
 370 375 380
 Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe
 385 390 395 400
 Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp
 405 410 415
 Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly
 420 425 430
 Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly
 435 440 445
 Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
 450 455 460
 Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly
 465 470 475 480
 Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val
 485 490 495

Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile
500 505 510

Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe
515 520 525

Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met
530 535 540

Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile
545 550 555 560

His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val
565 570 575

Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn
580 585 590

Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser
595 600 605

Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln
610 615 620

Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly
625 630 635 640

Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp
645 650 655

Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser
660 665 670

Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu
675 680 685

Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
690 695

<210> 105
<211> 2145
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2145)

<400> 105
atg ggg caa ccc ggg aac ggc agc gcc ttc ttg ctg gca ccc aat gga
Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly

297																
1			5				10						15			
agc Ser	cat His	gcg Ala	ccg Pro 20	gac Asp	cac His	gac Asp	gtc Val	acg Thr 25	cag Gln	caa Gln	agg Arg	gac Asp	gag Glu 30	gtg Val	tgg Trp	96
gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val	144
ttt Phe	ggc Gly 50	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu	192
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile	336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864

ttc	ttc	atc	gtt	aac	att	gtg	cat	gtg	atc	cag	gat	aac	ctc	atc	cgt	912
Phe	Phe	Ile	Val	Asn	Ile	Val	His	Val	Ile	Gln	Asp	Asn	Leu	Ile	Arg	
	290					295					300					
aag	gaa	gtt	tac	atc	ctc	cta	aat	tgg	ata	ggc	tat	gtc	aat	tct	ggc	960
Lys	Glu	Val	Tyr	Ile	Leu	Leu	Asn	Trp	Ile	Gly	Tyr	Val	Asn	Ser	Gly	
305					310					315					320	
ttc	aat	ccc	ctt	atc	tac	tgc	cgg	agc	cca	gat	ttc	agg	att	gcc	ttc	1008
Phe	Asn	Pro	Leu	Ile	Tyr	Cys	Arg	Ser	Pro	Asp	Phe	Arg	Ile	Ala	Phe	
				325					330					335		
cag	gag	ctt	ctg	tgc	ctg	cgc	agg	tct	tct	ttg	aag	gcc	tat	tac	cgt	1056
Gln	Glu	Leu	Leu	Cys	Leu	Arg	Arg	Ser	Ser	Leu	Lys	Ala	Tyr	Tyr	Arg	
			340					345					350			
act	cga	gag	agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	1104
Thr	Arg	Glu	Arg	Arg	Ala	Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	
		355					360					365				
gtc	gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	1152
Val	Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	
	370					375					380					
ttc	acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	1200
Phe	Thr	Thr	Leu	Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	
385					390					395					400	
acc	atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	1248
Thr	Met	Ser	Phe	Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	
				405				410					415			
ctc	atc	gcc	ttc	gcc	cac	ggc	gac	ctg	gcc	ccc	gga	gag	ggc	acc	aat	1296
Leu	Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Ala	Pro	Gly	Glu	Gly	Thr	Asn	
			420					425					430			
gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	1344
Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	
		435					440					445				
tcc	atc	gag	gtc	cag	gtg	acc	att	ggc	ttc	ggc	ggg	cgc	atg	gtg	aca	1392
Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	
	450					455					460					
gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	1440
Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	
465					470					475					480	
ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	1488
Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	
				485					490					495		
gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	1536
Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	
			500					505					510			
gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	1584
Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	
		515					520					525				
gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	1632
Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	
	530					535					540					
gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	1680
Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	
545					550					555					560	

gta gac atc ccc atg gag aat ggc gtg	299	
Val Asp Ile Pro Met 565	ggt ggt aac ggc atc ttc ctg	1728
	Gly Gly Asn Gly Ile Phe 575	
gtg gcc cca ctc atc atc tac cac gtc		
Val Ala Pro Leu 580	atc Ile Asp Ser Asn agc ccg ctc	1776
	Val 585 Ser 590 Pro Leu	
tac gac ctg gct cct agt gac ctg cac cac cac		
Tyr Asp Leu 595	gln Asp Leu Glu Ile	1824
	600 605	
att gtc atc ttg gaa ggc gtg gta gaa acc acg ggc atc acc acc cag		
Ile Val 610	Ile Thr Thr Gln	1872
	615 620	
gcc cgc acc tcc tac cta gct gac gag att cta tgg ggg cag cgc ttt		
Ala Arg Thr Ser Tyr Leu 630	Ile Leu 635 Trp Gly Gln Arg Phe 640	1920
gtc ccc att gtg gcc gag gag gac ggc cgc tat tct gtg gac tac tcc		
Val Pro Ile Val Ala 645	Arg Tyr Ser Val Asp Tyr Ser 655	1968
	650	
aaa ttt ggt aac acc att aaa gtg ccc aca cca ctc tgc aca gcc cgc		
Lys Phe Gly Asn 660	Thr Lys Val Pro Thr Pro Leu Cys Thr Ala Arg 670	2016
cag ctt gat gag gac cgc agt ctg ctg gat gcc ctg acc ctc gcc tcg		
Gln Leu Asp 675	Leu Asp Ala Leu Thr 685 Leu Ala Ser	2064
	680	
tcg cgg ggg ccc ctg cgc aag cgc agt gtg gct gtg gcg aag gcc aag		
Ser Arg Gly Pro Leu Arg 695	Lys Arg Ser Val Ala Val 700	2112
	690	
ccc aag ttt agc atc tct cca gat tcc ttg tcc		
Pro Lys Phe Ser Ile 710	Pro Asp Ser Leu Ser 715	2145

<210> 106
 <211> 715
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Synthetic Construct

 <400> 106

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
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Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
20 25 30
Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
35 40 45
Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
50 55 60
Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
65 70 75 80

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300
 Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Tyr Arg
 340 345 350

Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn
 355 360 365
 Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val
 370 375 380
 Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe
 385 390 395 400
 Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp
 405 410 415
 Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn
 420 425 430
 Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe
 435 440 445
 Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr
 450 455 460
 Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val
 465 470 475 480
 Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr
 485 490 495
 Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala
 500 505 510
 Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly
 515 520 525
 Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val
 530 535 540
 Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln
 545 550 555 560
 Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu
 565 570 575
 Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu
 580 585 590
 Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile
 595 600 605
 Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln
 610 615 620

Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile³⁰² Leu Trp Gly Gln Arg Phe
 625 630 635 640
 Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser
 645 650 655
 Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg
 660 665 670
 Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser
 675 680 685
 Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys
 690 695 700
 Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
 705 710 715

<210> 107
 <211> 2037
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2037)

<400> 107
 atg ggg caa ccc ggg aac ggc agc gcc ttc ttg ctg gca ccc aat gga 48
 Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
 1 5 10 15
 agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg 96
 Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30
 gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg 144
 Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 ttt ggc aat gtg ctg gtc atc aca gcc att gcc aag ttc gag cgt ctg 192
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 cag acg gtc acc aac tac ttc atc act tca ctg gcc tgt gct gat ctg 240
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 gtc atg ggc cta gca gtg gtg ccc ttt ggg gcc gcc cat att ctt atg 288
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 aaa atg tgg act ttt ggc aac ttc tgg tgc gag ttt tgg act tcc att 336
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 gat gtg ctg tgc gtc acg gcc agc att gag acc ctg tgc gtg atc gca 384
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125

gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala 135	att Ile	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320	960
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe	1008
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	tac Tyr	cgt Arg	1056
act Thr	cga Arg	gag Glu 355	agg Arg	agg Arg	gcc Ala	cgc Arg	ttc Phe 360	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly 365	aac Asn	tgc Cys	aac Asn	1104
gtc Val	gcc Ala 370	cac His	aag Lys	aac Asn	att Ile	cga Arg 375	gag Glu	cag Gln	ggc Gly	cgc Arg	ttc Phe 380	ctg Leu	cag Gln	gat Asp	gtg Val	1152
ttc Phe 385	acc Thr	acg Thr	ctg Leu	gtg Val	gac Asp 390	ctc Leu	aaa Lys	tgg Trp	cca Pro	cac His 395	act Thr	ctg Leu	ctc Leu	att Ile	ttc Phe 400	1200

[illegible]

Gln Leu Asp Glu Asp Arg Ser
675

<210> 108
<211> 679
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic Construct

<400> 108

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
1 5 10 15

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
20 25 30

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
35 40 45

Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
50 55 60

Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
65 70 75 80

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
85 90 95

Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
100 105 110

Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
115 120 125

Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
130 135 140

Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
145 150 155 160

Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
165 170 175

Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
180 185 190

Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
195 200 205

Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
210 215 220

Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300
 Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Tyr Arg
 340 345 350
 Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn
 355 360 365
 Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val
 370 375 380
 Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe
 385 390 395 400
 Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp
 405 410 415
 Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn
 420 425 430
 Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe
 435 440 445
 Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr
 450 455 460
 Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val
 465 470 475 480
 Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr
 485 490 495

Ala Gln Ala His Arg Arg Ala Glu Thr³⁰⁷ Leu Ile Phe Ser Lys His Ala
 500 505 510
 Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly
 515 520 525
 Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val
 530 535 540
 Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln
 545 550 555 560
 Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu
 565 570 575
 Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu
 580 585 590
 Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile
 595 600 605
 Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln
 610 615 620
 Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe
 625 630 635 640
 Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser
 645 650 655
 Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg
 660 665 670
 Gln Leu Asp Glu Asp Arg Ser
 675

<210> 109
 <211> 2379
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2379)

<400> 109
 atg ggg caa ccc ggg aac ggc agc gcc ttc ttg ctg gca ccc aat gga
 Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
 1 5 10 15
 agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg
 Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30

48

96

gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val	144
ttt Phe	ggc Gly 50	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu	192
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile	336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912

															309															
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320	960														
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe	1008														
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	ggc Gly	aat Asn	1056														
ggc Gly	tac Tyr	tcc Ser 355	agc Ser	aac Asn	ggc Gly	aac Asn	aca Thr 360	ggg Gly	gag Glu	cag Gln	agt Ser	gga Gly 365	tat Tyr	cac His	gtg Val	1104														
gaa Glu	cag Gln 370	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr	1152														
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggc Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400	1200														
tca Ser	caa Gln	ggg Gly	agg Arg	aat Asn 405	tgt Cys	agt Ser	aca Thr	aat Asn	gac Asp 410	tca Ser	ctg Leu	cta Leu	agg Arg	agg Arg 415	gcc Ala	1248														
cgc Arg	ttc Phe	gtg Val	tcc Ser 420	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 425	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 430	aac Asn	att Ile	1296														
cga Arg	gag Glu	cag Gln 435	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 440	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 445	ctg Leu	gtg Val	gac Asp	1344														
ctc Leu	aaa Lys 450	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 455	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 460	tcc Ser	ttc Phe	ctg Leu	tgc Cys	1392														
agc Ser 465	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 470	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 475	atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 480	1440														
ggt Gly	gat Asp	ctc Leu	tat Tyr	gct Ala 485	tac Tyr	atg Met	gag Glu	aaa Lys	ggc Gly 490	atc Ile	acg Thr	gac Asp	ctg Leu	gcc Ala 495	ccc Pro	1488														
tac Tyr	cca Pro	tac Tyr	gat Asp 500	gta Val	cca Pro	gat Asp	tac Tyr	gcc Ala 505	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 510	gtg Val	ccc Pro	1536														
tgc Cys	gtc Val	aca Thr 515	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 520	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 525	ttc Phe	tcc Ser	atc Ile	1584														
gag Glu	gtc Val 530	cag Gln	gtg Val	acc Thr	att Ile	ggc Gly 535	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 540	gtg Val	aca Thr	gag Glu	gaa Glu	1632														
tgt Cys 545	ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 550	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 555	aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu 560	1680														
atg Met	atc Ile	aac Asn	gcc Ala	atc Ile 565	atg Met	ctg Leu	ggc Gly	tgc Cys	atc Ile 570	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 575	cag Gln	1728														
gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	atc	1776														

Ala	His	Arg	Arg 580	Ala	Glu	Thr	Leu	Ile 585	Phe	Ser	Lys	His	Ala 590	Val	Ile	
acc Thr	ctg Leu	cgc Arg 595	cat His	ggc Gly	cgc Arg	ctg Leu	tgc Cys 600	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 605	ggg Gly	gac Asp	ctc Leu	1824
cga Arg	aag Lys 610	agc Ser	atg Met	atc Ile	att Ile	agc Ser 615	gcc Ala	acc Thr	atc Ile	cac His	atg Met 620	cag Gln	gtg Val	gtg Val	cgc Arg	1872
aag Lys 625	acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 630	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 635	ctc Leu	cac His	cag Gln	gta Val	gac Asp 640	1920
atc Ile	ccc Pro	atg Met	gag Glu	aat Asn 645	ggc Gly	gtg Val	ggg Gly	ggg Gly	aac Asn 650	ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val 655	gcc Ala	1968
cca Pro	ctc Leu	atc Ile	atc Ile 660	tac Tyr	cac His	gtc Val	atc Ile	gac Asp 665	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu 670	tac Tyr	gac Asp	2016
ctg Leu	gct Ala	cct Pro 675	agt Ser	gac Asp	ctg Leu	cac His	cac His 680	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 685	atc Ile	att Ile	gtc Val	2064
atc Ile	ttg Leu 690	gaa Glu	ggc Gly	gtg Val	gta Val	gaa Glu 695	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr 700	acc Thr	cag Gln	gcc Ala	cgc Arg	2112
acc Thr 705	tcc Ser	tac Tyr	cta Leu	gct Ala	gac Asp 710	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly 715	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro 720	2160
att Ile	gtg Val	gcc Ala	gag Glu	gag Glu 725	gac Asp	ggc Gly	cgc Arg	tat Tyr	tct Ser 730	gtg Val	gac Asp	tac Tyr	tcc Ser	aaa Lys 735	ttt Phe	2208
ggg Gly	aac Asn	acc Thr	att Ile 740	aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro 745	ctc Leu	tgc Cys	aca Thr	gcc Ala	cgc Arg 750	cag Gln	ctt Leu	2256
gat Asp	gag Glu	gac Asp 755	cgc Arg	agt Ser	ctg Leu	ctg Leu	gat Asp 760	gcc Ala	ctg Leu	acc Thr	ctc Leu	gcc Ala 765	tgc Ser	tgc Ser	cgg Arg	2304
ggg Gly	ccc Pro 770	ctg Leu	cgc Arg	aag Lys	cgc Arg	agt Ser 775	gtg Val	gct Ala	gtg Val	gcg Ala	aag Lys 780	gcc Ala	aag Lys	ccc Pro	aag Lys	2352
ttt Phe 785	agc Ser	atc Ile	tct Ser	cca Pro	gat Asp 790	tcc Ser	ttg Leu	tcc Ser								2379

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
1 5 10 15

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30
 Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285

Phe Phe Ile Val Asn Ile Val His Val Ile Gln³¹² Asp Asn Leu Ile Arg
 290 295 300

Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320

Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335

Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Gly Asn
 340 345 350

Gly Tyr Ser Ser Asn Gly Asn Thr Gly Glu Gln Ser Gly Tyr His Val
 355 360 365

Glu Gln Glu Lys Glu Asn Lys Leu Leu Cys Glu Asp Leu Pro Gly Thr
 370 375 380

Glu Asp Phe Val Gly His Gln Gly Thr Val Pro Ser Asp Asn Ile Asp
 385 390 395 400

Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu Arg Arg Ala
 405 410 415

Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile
 420 425 430

Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp
 435 440 445

Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys
 450 455 460

Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His
 465 470 475 480

Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro
 485 490 495

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro
 500 505 510

Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile
 515 520 525

Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu
 530 535 540

Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu
 545 550 555 560

Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln

565 313 570 575
 Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile
 580 585 590
 Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu
 595 600 605
 Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg
 610 615 620
 Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp
 625 630 635 640
 Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala
 645 650 655
 Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp
 660 665 670
 Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val
 675 680 685
 Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg
 690 695 700
 Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro
 705 710 715 720
 Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe
 725 730 735
 Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu
 740 745 750
 Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg
 755 760 765
 Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys
 770 775 780
 Phe Ser Ile Ser Pro Asp Ser Leu Ser
 785 790

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 <211> 2271
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>

<221> CDS
 <222> (1)..(2271)

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 1 5 10 15
 agc cat gcg ccg gac cac gac gtc acg cag caa agg gac gag gtg tgg 96
 Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
 20 25 30
 gtg gtg ggc atg ggc atc gtc atg tct ctc atc gtc ctg gcc atc gtg 144
 Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 ttt ggc aat gtg ctg gtc atc aca gcc att gcc aag ttc gag cgt ctg 192
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 cag acg gtc acc aac tac ttc atc act tca ctg gcc tgt gct gat ctg 240
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 gtc atg ggc cta gca gtg gtg ccc ttt ggg gcc gcc cat att ctt atg 288
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 aaa atg tgg act ttt ggc aac ttc tgg tgc gag ttt tgg act tcc att 336
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 gat gtg ctg tgc gtc acg gcc agc att gag acc ctg tgc gtg atc gca 384
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 gtg gat cgc tac ttt gcc att act tca cct ttc aag tac cag agc ctg 432
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 ctg acc aag aat aag gcc cgg gtg atc att ctg atg gtg tgg att gtg 480
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 tca ggc ctt acc tcc ttc ttg ccc att cag atg cac tgg tac agg gcc 528
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 acc cac cag gaa gcc atc aac tgc tat gcc aat gag acc tgc tgt gac 576
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 ttc ttc acg aac caa gcc tat gcc att gcc tct tcc atc gtg tcc ttc 624
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 tac gtt ccc ctg gtg atc atg gtc ttc gtc tac tcc agg gtc ttt cag 672
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 gag gcc aaa agg cag ctc cag aag att gac aaa tct gag ggc cgc ttc 720
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 cat gtc cag aac ctt agc cag gtg gag cag gat ggg cgg acg ggg cat 768
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 gga ctc cgc aga tct tcc aag ttc tgc ttg aag gag cac aaa gcc ctc 816

315															
Gly	Leu	Arg	Arg 260	Ser	Ser	Lys	Phe	Cys 265	Leu	Lys	Glu	His	Lys 270	Ala	Leu
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	ggc Gly	aat Asn
ggc Gly	tac Tyr	tcc Ser 355	agc Ser	aac Asn	ggc Gly	aac Asn	aca Thr 360	ggg Gly	gag Glu	cag Gln	agt Ser	gga Gly 365	tat Tyr	cac His	gtg Val
gaa Glu	cag Gln 370	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggt Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400
tca Ser	caa Gln	ggg Gly	agg Arg	aat Asn 405	tgt Cys	agt Ser	aca Thr	aat Asn	gac Asp 410	tca Ser	ctg Leu	cta Leu	agg Arg	agg Arg 415	gcc Ala
cgc Arg	ttc Phe	gtg Val	tcc Ser 420	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 425	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 430	aac Asn	att Ile
cga Arg	gag Glu	cag Gln 435	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 440	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 445	ctg Leu	gtg Val	gac Asp
ctc Leu	aaa Lys 450	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 455	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 460	tcc Ser	ttc Phe	ctg Leu	tgc Cys
agc Ser 465	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 470	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 475	atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 480
ggt Gly	gat Asp	ctc Leu	tat Tyr	gct Ala 485	tac Tyr	atg Met	gag Glu	aaa Lys	ggc Gly 490	atc Ile	acg Thr	gac Asp	ctg Leu	gcc Ala 495	ccc Pro
tac Tyr	cca Pro	tac Tyr	gat Asp 500	gta Val	cca Pro	gat Asp	tac Tyr	gcc Ala 505	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 510	gtg Val	ccc Pro
tgc Cys	gtc Val	aca Thr 515	agc Ser	atc Ile	cac His	tcc Ser	ttt Phe 520	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 525	ttc Phe	tcc Ser	atc Ile
gag Glu	gtc Val	cag Gln	gtg Val	acc Thr	att Ile	ggt Gly	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr	gag Glu	gaa Glu

530	535	316	540													
tgt Cys 545	ccc Pro	ctg Leu	gcc Ala	atc Ile	ctc Leu 550	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 555	aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu 560	1680
atg Met	atc Ile	aac Asn	gcc Ala	atc Ile 565	atg Met	ctg Leu	ggc Gly	tgc Cys	atc Ile 570	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 575	cag Gln	1728
gca Ala	cat His	cgg Arg	cgg Arg 580	gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 585	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 590	gtg Val	atc Ile	1776
acc Thr	ctg Leu	cgc Arg 595	cat His	ggc Gly	cgc Arg	ctg Leu	tgc Cys 600	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 605	ggg Gly	gac Asp	ctc Leu	1824
cga Arg	aag Lys 610	agc Ser	atg Met	atc Ile	att Ile	agc Ser 615	gcc Ala	acc Thr	atc Ile	cac His	atg Met 620	cag Gln	gtg Val	gtg Val	cgc Arg	1872
aag Lys 625	acc Thr	acc Thr	agc Ser	ccc Pro	gag Glu 630	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 635	ctc Leu	cac His	cag Gln	gta Val	gac Asp 640	1920
atc Ile	ccc Pro	atg Met	gag Glu	aat Asn 645	ggc Gly	gtg Val	ggt Gly	ggt Gly	aac Asn 650	ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val 655	gcc Ala	1968
cca Pro	ctc Leu	atc Ile	atc Ile 660	tac Tyr	cac His	gtc Val	atc Ile	gac Asp 665	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu 670	tac Tyr	gac Asp	2016
ctg Leu	gct Ala	cct Pro 675	agt Ser	gac Asp	ctg Leu	cac His	cac His 680	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 685	atc Ile	att Ile	gtc Val	2064
atc Ile 690	ttg Leu	gaa Glu	ggc Gly	gtg Val	gta Val	gaa Glu 695	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr 700	acc Thr	cag Gln	gcc Ala	cgc Arg	2112
acc Thr 705	tcc Ser	tac Tyr	cta Leu	gct Ala	gac Asp 710	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly 715	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro 720	2160
att Ile	gtg Val	gcc Ala	gag Glu	gag Glu 725	gac Asp	ggc Gly	cgc Arg	tat Tyr	tct Ser 730	gtg Val	gac Asp	tac Tyr	tcc Ser	aaa Lys 735	ttt Phe	2208
ggt Gly	aac Asn	acc Thr	att Ile 740	aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro 745	ctc Leu	tgc Cys	aca Thr	gcc Ala	cgc Arg 750	cag Gln	ctt Leu	2256
gat Asp	gag Glu	gac Asp 755	cgc Arg	agt Ser												2271

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 <211> 757
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Synthetic Construct

 <400> 112

317

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Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
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Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
35 40 45

Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
50 55 60

Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
65 70 75 80

Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
85 90 95

Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
100 105 110

Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
115 120 125

Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
130 135 140

Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
145 150 155 160

Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
165 170 175

Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
180 185 190

Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
195 200 205

Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
210 215 220

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

His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
245 250 255

Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
260 265 270

Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro

275					280					318			285				
Phe	Phe 290	Ile	Val	Asn	Ile	Val 295	His	Val	Ile	Gln	Asp 300	Asn	Leu	Ile	Arg		
Lys 305	Glu	Val	Tyr	Ile	Leu 310	Leu	Asn	Trp	Ile	Gly 315	Tyr	Val	Asn	Ser	Gly 320		
Phe	Asn	Pro	Leu	Ile 325	Tyr	Cys	Arg	Ser	Pro 330	Asp	Phe	Arg	Ile	Ala 335	Phe		
Gln	Glu	Leu	Leu 340	Cys	Leu	Arg	Arg	Ser 345	Ser	Leu	Lys	Ala	Tyr 350	Gly	Asn		
Gly	Tyr	Ser 355	Ser	Asn	Gly	Asn	Thr 360	Gly	Glu	Gln	Ser	Gly 365	Tyr	His	Val		
Glu	Gln 370	Glu	Lys	Glu	Asn	Lys 375	Leu	Leu	Cys	Glu	Asp 380	Leu	Pro	Gly	Thr		
Glu 385	Asp	Phe	Val	Gly	His 390	Gln	Gly	Thr	Val	Pro 395	Ser	Asp	Asn	Ile	Asp 400		
Ser	Gln	Gly	Arg	Asn 405	Cys	Ser	Thr	Asn	Asp 410	Ser	Leu	Leu	Arg	Arg 415	Ala		
Arg	Phe	Val	Ser 420	Lys	Lys	Gly	Asn	Cys 425	Asn	Val	Ala	His	Lys 430	Asn	Ile		
Arg	Glu	Gln 435	Gly	Arg	Phe	Leu	Gln 440	Asp	Val	Phe	Thr	Thr 445	Leu	Val	Asp		
Leu	Lys 450	Trp	Pro	His	Thr	Leu 455	Leu	Ile	Phe	Thr	Met 460	Ser	Phe	Leu	Cys		
Ser 465	Trp	Leu	Leu	Phe	Ala 470	Met	Val	Trp	Trp	Leu 475	Ile	Ala	Phe	Ala	His 480		
Gly	Asp	Leu	Tyr	Ala 485	Tyr	Met	Glu	Lys	Gly 490	Ile	Thr	Asp	Leu	Ala 495	Pro		
Tyr	Pro	Tyr	Asp 500	Val	Pro	Asp	Tyr	Ala 505	Gly	Glu	Gly	Thr	Asn 510	Val	Pro		
Cys	Val	Thr 515	Ser	Ile	His	Ser	Phe 520	Ser	Ser	Ala	Phe	Leu 525	Phe	Ser	Ile		
Glu	Val 530	Gln	Val	Thr	Ile	Gly 535	Phe	Gly	Gly	Arg	Met 540	Val	Thr	Glu	Glu		
Cys 545	Pro	Leu	Ala	Ile	Leu 550	Ile	Leu	Ile	Val	Gln 555	Asn	Ile	Val	Gly	Leu 560		

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320															
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agc Ser	cat His	gcg Ala	ccg Pro 20	gac Asp	cac His	gac Asp	gtc Val	acg Thr 25	cag Gln	caa Gln	agg Arg	gac Asp	gag Glu 30	gtg Val	tgg Trp
gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val
ttt Phe	ggc Gly 50	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His
gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu
aag Lys	acg Thr	tta Leu	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro

275					280					321	285					
ttc	ttc	atc	gtt	aac	att	gtg	cat	gtg	atc	cag	gat	aac	ctc	atc	cg	912
Phe	Phe	Ile	Val	Asn	Ile	Val	His	Val	Ile	Gln	Asp	Asn	Leu	Ile	Arg	
	290					295					300					
aag	gaa	gtt	tac	atc	ctc	cta	aat	tgg	ata	ggc	tat	gtc	aat	tct	gg	960
Lys	Glu	Val	Tyr	Ile	Leu	Leu	Asn	Trp	Ile	Gly	Tyr	Val	Asn	Ser	Gly	
305					310					315					320	
ttc	aat	ccc	ctt	atc	tac	tgc	cgg	agc	cca	gat	ttc	agg	att	gcc	ttc	1008
Phe	Asn	Pro	Leu	Ile	Tyr	Cys	Arg	Ser	Pro	Asp	Phe	Arg	Ile	Ala	Phe	
				325					330					335		
cag	gag	ctt	ctg	tgc	ctg	cgc	agg	tct	tct	ttg	aag	gcc	tat	ggc	aat	1056
Gln	Glu	Leu	Leu	Cys	Leu	Arg	Arg	Ser	Ser	Leu	Lys	Ala	Tyr	Gly	Asn	
			340					345					350			
ggc	tac	tcc	agc	aac	ggc	aac	aca	ggg	gag	cag	agt	gga	tat	cac	gtg	1104
Gly	Tyr	Ser	Ser	Asn	Gly	Asn	Thr	Gly	Glu	Gln	Ser	Gly	Tyr	His	Val	
		355					360					365				
gaa	cag	gag	aaa	gaa	aat	aaa	ctg	ctg	tgt	gaa	gac	ctc	cca	ggc	acg	1152
Glu	Gln	Glu	Lys	Glu	Asn	Lys	Leu	Leu	Cys	Glu	Asp	Leu	Pro	Gly	Thr	
	370					375					380					
gaa	gac	ttt	gtg	ggc	cat	caa	gg	act	gtg	cct	agc	gat	aac	att	gat	1200
Glu	Asp	Phe	Val	Gly	His	Gln	Gly	Thr	Val	Pro	Ser	Asp	Asn	Ile	Asp	
385					390					395					400	
tca	caa	ggg	agg	aat	tgt	agt	aca	aat	gac	tca	ctg	cta	agg	agg	gcc	1248
Ser	Gln	Gly	Arg	Asn	Cys	Ser	Thr	Asn	Asp	Ser	Leu	Leu	Arg	Arg	Ala	
				405					410					415		
cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	gcc	cac	aag	aac	att	1296
Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His	Lys	Asn	Ile	
			420					425					430			
cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	acc	acg	ctg	gtg	gac	1344
Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	Thr	Thr	Leu	Val	Asp	
		435					440					445				
ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	acc	atg	tcc	ttc	ctg	tgc	1392
Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser	Phe	Leu	Cys	
	450					455					460					
agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	1440
Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	
465					470					475					480	
gg	gac	ctg	gcc	ccc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	aca	agc	1488
Gly	Asp	Leu	Ala	Pro	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	
				485					490					495		
atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	1536
Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	
			500					505					510			
acc	att	gg	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	1584
Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	
		515					520					525				
atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	1632
Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	
	530					535					540					
atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg	1680
Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	
545					550					555					560	

gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 565	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 570	gtg Val	atc Ile	acc Thr	ctg Leu	cgc Arg 575	cat His	1728
ggc Gly	cgc Arg	ctg Leu	tgc Cys 580	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 585	ggg Gly	gac Asp	ctc Leu	cga Arg	aag Lys 590	agc Ser	atg Met	1776
atc Ile	att Ile	agc Ser 595	gcc Ala	acc Thr	atc Ile	cac His	atg Met 600	cag Gln	gtg Val	gtg Val	cgc Arg	aag Lys 605	acc Thr	acc Thr	agc Ser	1824
ccc Pro	gag Glu 610	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 615	ctc Leu	cac His	cag Gln	gta Val	gac Asp 620	atc Ile	ccc Pro	atg Met	gag Glu	1872
aat Asn 625	ggc Gly	gtg Val	ggt Gly	ggt Gly	aac Asn 630	ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val 635	gcc Ala	cca Pro	ctc Leu	atc Ile	atc Ile 640	1920
tac Tyr	cac His	gtc Val	atc Ile	gac Asp 645	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu 650	tac Tyr	gac Asp	ctg Leu	gct Ala	cct Pro 655	agt Ser	1968
gac Asp	ctg Leu	cac His	cac His 660	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 665	atc Ile	att Ile	gtc Val	atc Ile	ttg Leu 670	gaa Glu	ggc Gly	2016
gtg Val	gta Val	gaa Glu 675	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr 680	acc Thr	cag Gln	gcc Ala	cgc Arg	acc Thr 685	tcc Ser	tac Tyr	cta Leu	2064
gct Ala	gac Asp 690	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly 695	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro 700	att Ile	gtg Val	gcc Ala	gag Glu	2112
gag Glu 705	gac Asp	ggc Gly	cgc Arg	tat Tyr	tct Ser 710	gtg Val	gac Asp	tac Tyr	tcc Ser	aaa Lys 715	ttt Phe	ggg Gly	aac Asn	acc Thr	att Ile 720	2160
aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro 725	ctc Leu	tgc Cys	aca Thr	gcc Ala	cgc Arg 730	cag Gln	ctt Leu	gat Asp	gag Glu	gac Asp 735	cgc Arg	2208
agt Ser	ctg Leu	ctg Leu	gat Asp 740	gcc Ala	ctg Leu	acc Thr	ctc Leu	gcc Ala 745	tgc Ser	tgc Ser	cgg Arg	ggg Gly	ccc Pro 750	ctg Leu	cgc Arg	2256
aag Lys	cgc Arg	agt Ser 755	gtg Val	gct Ala	gtg Val	gcg Ala	aag Lys 760	gcc Ala	aag Lys	ccc Pro	aag Lys	ttt Phe 765	agc Ser	atc Ile	tct Ser	2304
cca Pro	gat Asp 770	tcc Ser	ttg Leu	tcc Ser												2319

<210> 114
 <211> 773
 <212> PRT
 <213> Artificial sequence

 <220>
 <223> Synthetic Construct

 <400> 114

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly

1	5				10				15						
Ser	His	Ala	Pro 20	Asp	His	Asp	Val	Thr 25	Gln	Gln	Arg	Asp	Glu 30	Val	Trp
Val	Val	Gly 35	Met	Gly	Ile	Val	Met 40	Ser	Leu	Ile	Val	Leu 45	Ala	Ile	Val
Phe	Gly 50	Asn	Val	Leu	Val	Ile 55	Thr	Ala	Ile	Ala	Lys 60	Phe	Glu	Arg	Leu
Gln 65	Thr	Val	Thr	Asn	Tyr 70	Phe	Ile	Thr	Ser	Leu 75	Ala	Cys	Ala	Asp	Leu 80
Val	Met	Gly	Leu	Ala 85	Val	Val	Pro	Phe	Gly 90	Ala	Ala	His	Ile	Leu 95	Met
Lys	Met	Trp	Thr 100	Phe	Gly	Asn	Phe	Trp 105	Cys	Glu	Phe	Trp	Thr 110	Ser	Ile
Asp	Val	Leu 115	Cys	Val	Thr	Ala	Ser 120	Ile	Glu	Thr	Leu	Cys 125	Val	Ile	Ala
Val	Asp 130	Arg	Tyr	Phe	Ala	Ile 135	Thr	Ser	Pro	Phe	Lys 140	Tyr	Gln	Ser	Leu
Leu 145	Thr	Lys	Asn	Lys	Ala 150	Arg	Val	Ile	Ile	Leu 155	Met	Val	Trp	Ile	Val 160
Ser	Gly	Leu	Thr	Ser 165	Phe	Leu	Pro	Ile	Gln 170	Met	His	Trp	Tyr	Arg 175	Ala
Thr	His	Gln	Glu 180	Ala	Ile	Asn	Cys	Tyr 185	Ala	Asn	Glu	Thr	Cys 190	Cys	Asp
Phe	Phe	Thr 195	Asn	Gln	Ala	Tyr	Ala 200	Ile	Ala	Ser	Ser	Ile 205	Val	Ser	Phe
Tyr	Val 210	Pro	Leu	Val	Ile	Met 215	Val	Phe	Val	Tyr	Ser 220	Arg	Val	Phe	Gln
Glu 225	Ala	Lys	Arg	Gln	Leu 230	Gln	Lys	Ile	Asp	Lys 235	Ser	Glu	Gly	Arg	Phe 240
His	Val	Gln	Asn	Leu 245	Ser	Gln	Val	Glu	Gln 250	Asp	Gly	Arg	Thr	Gly 255	His
Gly	Leu	Arg	Arg 260	Ser	Ser	Lys	Phe	Cys 265	Leu	Lys	Glu	His	Lys 270	Ala	Leu
Lys	Thr	Leu 275	Gly	Ile	Ile	Met	Gly 280	Thr	Phe	Thr	Leu	Cys 285	Trp	Leu	Pro

Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300
 Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Gly Asn
 340 345 350
 Gly Tyr Ser Ser Asn Gly Asn Thr Gly Glu Gln Ser Gly Tyr His Val
 355 360 365
 Glu Gln Glu Lys Glu Asn Lys Leu Leu Cys Glu Asp Leu Pro Gly Thr
 370 375 380
 Glu Asp Phe Val Gly His Gln Gly Thr Val Pro Ser Asp Asn Ile Asp
 385 390 395 400
 Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu Arg Arg Ala
 405 410 415
 Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile
 420 425 430
 Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp
 435 440 445
 Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys
 450 455 460
 Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His
 465 470 475 480
 Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser
 485 490 495
 Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val
 500 505 510
 Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala
 515 520 525
 Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala
 530 535 540
 Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg
 545 550 555 560

Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His
565 570 575

Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met
580 585 590

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

Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu
610 615 620

Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile
625 630 635 640

Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser
645 650 655

Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly
660 665 670

Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu
675 680 685

Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu
690 695 700

Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile
705 710 715 720

Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg
725 730 735

Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg
740 745 750

Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser

Pro Asp Ser Leu Ser
770

<210>	115
<211>	2211
<212>	DNA
<213>	Artificial sequence

<220>
<223> hybrid sequence

$\langle 220 \rangle$
 $\langle 221 \rangle$ CDS
 $\langle 222 \rangle$ (1).. $\langle 2211 \rangle$

<400>	atg Met 1	ggg Gly	caa Gln 115	ccc Pro	ggg Gly 5	aac Asn	ggc Gly	agc Ser	gcc Ala	ttc Phe 10	ttg Leu	ctg Leu	gca Ala	ccc Pro	aat Asn 15	gga Gly	48
	agc Ser	cat His	gcg Ala	ccg Pro 20	gac Asp	cac His	gac Asp	gtc Val	acg Thr 25	cag Gln	caa Gln	agg Arg	gac Asp	gag Glu 30	gtg Val	tgg Trp	96
	gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val	144
	ttt Phe	ggc Gly 50	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu	192
	cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
	gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
	aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile	336
	gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
	gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
	ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
	tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
	acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
	ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr	gcc Ala 200	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
	tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
	gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
	cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
	gga Gly	ctc Leu	cgc Arg	aga Arg 260	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys 265	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys 270	gcc Ala	ctc Leu	816

aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	gtt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag Lys 305	gaa Glu	gtt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggc Gly 320	960
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe	1008
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	ctg Leu	cgc Arg	agg Arg	tct Ser 345	tct Ser	ttg Leu	aag Lys	gcc Ala	tat Tyr 350	ggc Gly	aat Asn	1056
ggc Gly	tac Tyr	tcc Ser 355	agc Ser	aac Asn	ggc Gly	aac Asn	aca Thr 360	ggg Gly	gag Glu	cag Gln	agt Ser	gga Gly 365	tat Tyr	cac His	gtg Val	1104
gaa Glu	cag Gln 370	gag Glu	aaa Lys	gaa Glu	aat Asn	aaa Lys 375	ctg Leu	ctg Leu	tgt Cys	gaa Glu	gac Asp 380	ctc Leu	cca Pro	ggc Gly	acg Thr	1152
gaa Glu 385	gac Asp	ttt Phe	gtg Val	ggc Gly	cat His 390	caa Gln	ggc Gly	act Thr	gtg Val	cct Pro 395	agc Ser	gat Asp	aac Asn	att Ile	gat Asp 400	1200
tca Ser	caa Gln	ggg Gly	agg Arg	aat Asn 405	tgt Cys	agt Ser	aca Thr	aat Asn	gac Asp 410	tca Ser	ctg Leu	cta Leu	agg Arg	agg Arg 415	gcc Ala	1248
cgc Arg	ttc Phe	gtg Val	tcc Ser 420	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys 425	aac Asn	gtc Val	gcc Ala	cac His	aag Lys 430	aac Asn	att Ile	1296
cga Arg	gag Glu	cag Gln 435	ggc Gly	cgc Arg	ttc Phe	ctg Leu	cag Gln 440	gat Asp	gtg Val	ttc Phe	acc Thr	acg Thr 445	ctg Leu	gtg Val	gac Asp	1344
ctc Leu	aaa Lys 450	tgg Trp	cca Pro	cac His	act Thr	ctg Leu 455	ctc Leu	att Ile	ttc Phe	acc Thr	atg Met 460	tcc Ser	ttc Phe	ctg Leu	tgc Cys	1392
agc Ser 465	tgg Trp	ctg Leu	ctc Leu	ttt Phe	gcc Ala 470	atg Met	gtc Val	tgg Trp	tgg Trp	ctc Leu 475	atc Ile	gcc Ala	ttc Phe	gcc Ala	cac His 480	1440
ggc Gly	gac Asp	ctg Leu	gcc Ala	ccc Pro 485	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn 490	gtg Val	ccc Pro	tgc Cys	gtc Val	aca Thr 495	agc Ser	1488
atc Ile	cac His	tcc Ser	ttt Phe 500	tca Ser	tct Ser	gcc Ala	ttc Phe	ctt Leu 505	ttc Phe	tcc Ser	atc Ile	gag Glu	gtc Val 510	cag Gln	gtg Val	1536
acc Thr	att Ile	ggc Gly 515	ttc Phe	ggc Gly	ggg Gly	cgc Arg	atg Met 520	gtg Val	aca Thr	gag Glu	gaa Glu	tgt Cys 525	ccc Pro	ctg Leu	gcc Ala	1584
atc Ile 530	ctc Leu	att Ile	ctc Leu	att Ile	gtg Val	cag Gln 535	aat Asn	atc Ile	gtc Val	ggg Gly	ctg Leu 540	atg Met	atc Ile	aac Asn	gcc Ala	1632

328

atc Ile 545	atg Met	ctg Leu	ggc Gly	tgc Cys 550	atc Ile 550	ttc Phe	atg Met	aaa Lys	acg Thr	gcc Ala 555	cag Gln	gca Ala	cat His	cgg Arg	cgg Arg 560	1680
gca Ala	gaa Glu	acc Thr	ctc Leu	atc Ile 565	ttc Phe	agc Ser	aag Lys	cat His	gct Ala 570	gtg Val	atc Ile	acc Thr	ctg Leu	cgc Arg 575	cat His	1728
ggc Gly	cgc Arg	ctg Leu	tgc Cys 580	ttc Phe	atg Met	ctg Leu	cgc Arg	gta Val 585	ggg Gly	gac Asp	ctc Leu	cga Arg	aag Lys 590	agc Ser	atg Met	1776
atc Ile	att Ile	agc Ser 595	gcc Ala	acc Thr	atc Ile	cac His	atg Met 600	cag Gln	gtg Val	gtg Val	cgc Arg	aag Lys 605	acc Thr	acc Thr	agc Ser	1824
ccc Pro 610	gag Glu	ggc Gly	gaa Glu	gtt Val	gtg Val	cct Pro 615	ctc Leu	cac His	cag Gln	gta Val	gac Asp 620	atc Ile	ccc Pro	atg Met	gag Glu	1872
aat Asn 625	ggc Gly	gtg Val	ggt Gly	ggt Gly	aac Asn 630	ggc Gly	atc Ile	ttc Phe	ctg Leu	gtg Val 635	gcc Ala	cca Pro	ctc Leu	atc Ile	atc Ile 640	1920
tac Tyr	cac His	gtc Val	atc Ile	gac Asp 645	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu 650	tac Tyr	gac Asp	ctg Leu	gct Ala	cct Pro 655	agt Ser	1968
gac Asp	ctg Leu	cac His	cac His 660	cac His	cag Gln	gac Asp	ctg Leu	gag Glu 665	atc Ile	att Ile	gtc Val	atc Ile	ttg Leu 670	gaa Glu	ggc Gly	2016
gtg Val	gta Val	gaa Glu 675	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr 680	acc Thr	cag Gln	gcc Ala	cgc Arg	acc Thr 685	tcc Ser	tac Tyr	cta Leu	2064
gct Ala	gac Asp 690	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly 695	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro 700	att Ile	gtg Val	gcc Ala	gag Glu	2112
gag Glu 705	gac Asp	ggc Gly	cgc Arg	tat Tyr	tct Ser 710	gtg Val	gac Asp	tac Tyr	tcc Ser	aaa Lys 715	ttt Phe	ggt Gly	aac Asn	acc Thr	att Ile 720	2160
aaa Lys	gtg Val	ccc Pro	aca Thr	cca Pro 725	ctc Leu	tgc Cys	aca Thr	gcc Ala	cgc Arg 730	cag Gln	ctt Leu	gat Asp	gag Glu	gac Asp 735	cgc Arg	2208
agt Ser																2211

<210> 116
 <211> 737
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 116

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
1 5 10 15

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
20 25 30

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val
 35 40 45
 Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu
 50 55 60
 Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu
 65 70 75 80
 Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met
 85 90 95
 Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile
 100 105 110
 Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala
 115 120 125
 Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu
 130 135 140
 Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val
 145 150 155 160
 Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala
 165 170 175
 Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp
 180 185 190
 Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe
 195 200 205
 Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln
 210 215 220
 Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe
 225 230 235 240
 His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His
 245 250 255
 Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu
 260 265 270
 Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro
 275 280 285
 Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg
 290 295 300

Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly
 305 310 315 320
 Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Leu Arg Arg Ser Ser Leu Lys Ala Tyr Gly Asn
 340 345 350
 Gly Tyr Ser Ser Asn Gly Asn Thr Gly Glu Gln Ser Gly Tyr His Val
 355 360 365
 Glu Gln Glu Lys Glu Asn Lys Leu Leu Cys Glu Asp Leu Pro Gly Thr
 370 375 380
 Glu Asp Phe Val Gly His Gln Gly Thr Val Pro Ser Asp Asn Ile Asp
 385 390 395 400
 Ser Gln Gly Arg Asn Cys Ser Thr Asn Asp Ser Leu Leu Arg Arg Ala
 405 410 415
 Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile
 420 425 430
 Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp
 435 440 445
 Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys
 450 455 460
 Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His
 465 470 475 480
 Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser
 485 490 495
 Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val
 500 505 510
 Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala
 515 520 525
 Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala
 530 535 540
 Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg
 545 550 555 560
 Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His
 565 570 575

Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met
 580 585 590 331
 Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser
 595 600 605
 Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu
 610 615 620
 Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile
 625 630 635 640
 Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser
 645 650 655
 Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly
 660 665 670
 Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu
 675 680 685
 Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu
 690 695 700
 Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile
 705 710 715 720
 Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg
 725 730 735

Ser

<210> 117
 <211> 2421
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2421)

<400> 117	
atg gat gtg ctc agc cct ggt cag ggc aac aac acc aca tca cca ccg	48
Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro	
1 5 10 15	
gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
35 40 45	

tgc Cys	gcg Ala 50	gtg Val	ctg Leu	ggc Gly	aat Asn	gcg Ala 55	tgc Cys	gtg Val	gtg Val	gct Ala	gcc Ala 60	atc Ile	gcc Ala	ttg Leu	gag Glu	192
cgc Arg 65	tcc Ser	ctg Leu	cag Gln	aac Asn	gtg Val 70	gcc Ala	aat Asn	tat Tyr	ctt Leu	att Ile 75	ggc Gly	tct Ser	ttg Leu	gcg Ala	gtc Val 80	240
acc Thr	gac Asp	ctc Leu	atg Met	gtg Val 85	tgc Ser	gtg Val	ttg Leu	gtg Val	ctg Leu 90	ccc Pro	atg Met	gcc Ala	gcg Ala	ctg Leu 95	tat Tyr	288
cag Gln	gtg Val	ctc Leu	aac Asn 100	aag Lys	tgg Trp	aca Thr	ctg Leu	ggc Gly 105	cag Gln	gta Val	acc Thr	tgc Cys	gac Asp 110	ctg Leu	ttc Phe	336
atc Ile	gcc Ala	ctc Leu 115	gac Asp	gtg Val	ctg Leu	tgc Cys	tgc Cys 120	acc Thr	tca Ser	tcc Ser	atc Ile	ttg Leu 125	cac His	ctg Leu	tgc Cys	384
gcc Ala	atc Ile 130	gcg Ala	ctg Leu	gac Asp	agg Arg	tac Tyr 135	tgg Trp	gcc Ala	atc Ile	acg Thr	gac Asp 140	ccc Pro	atc Ile	gac Asp	tac Tyr	432
gtg Val 145	aac Asn	aag Lys	agg Arg	acg Thr	ccc Pro 150	cgg Arg	cgc Arg	gcc Ala	gct Ala	gcg Ala 155	ctc Leu	atc Ile	tcg Ser	ctc Leu	act Thr 160	480
tgg Trp	ctt Leu	att Ile	ggc Gly	ttc Phe 165	ctc Leu	atc Ile	tct Ser	atc Ile	ccg Pro 170	ccc Pro	atg Met	ctg Leu	ggc Gly	tgg Trp 175	cgc Arg	528
acc Thr	ccg Pro	gaa Glu	gac Asp 180	cgc Arg	tgc Ser	gac Asp	ccc Pro	gac Asp 185	gca Ala	tgc Cys	acc Thr	att Ile	agc Ser 190	aag Lys	gat Asp	576
cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser	acc Thr 200	ttt Phe	gga Gly	gct Ala	ttc Phe	tac Tyr 205	atc Ile	ccg Pro	ctg Leu	624
ctg Leu	ctc Leu 210	atg Met	ctg Leu	gtt Val	ctc Leu	tat Tyr 215	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe	672
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240	720
cgc Arg	cat His	gga Gly	gca Ala	tct Ser 245	ccc Pro	gcc Ala	ccg Pro	cag Gln	ccc Pro 250	aag Lys	aag Lys	agt Ser	gtg Val	aat Asn 255	gga Gly	768
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly	816
ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
gcc Ala	ctg Leu 290	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His	912
ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggt Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320	960

ttc	gag	agg	aaa	aat	gag	cgc	aac	gcc	333			aag	cgc	aag	atg	gcc	1008
Phe	Glu	Arg	Lys	Asn 325	Glu	Arg	Asn	Ala	gag	gcg	Ala	Lys	Arg	Lys	Met 335	Ala	
ctg	gcc	cga	gag	agg	aag	aca	gtg	aag	acg	ctg	ggc	atc	atc	atg	ggc	1056	
Leu	Ala	Arg	Glu 340	Arg	Lys	Thr	Val	Lys 345	Thr	Leu	Gly	Ile	Ile 350	Met	Gly		
acc	ttc	atc	ctc	tgc	tgg	ctg	ccc	ttc	ttc	atc	gtg	gct	ctt	gtt	ctg	1104	
Thr	Phe	Ile 355	Leu	Cys	Trp	Leu	Pro 360	Phe	Phe	Ile	Val	Ala 365	Leu	Val	Leu		
ccc	ttc	tgc	gag	agc	agc	tgc	cac	atg	ccc	acc	ctg	ttg	ggc	gcc	ata	1152	
Pro	Phe 370	Cys	Glu	Ser	Ser	Cys 375	His	Met	Pro	Thr	Leu 380	Leu	Gly	Ala	Ile		
atc	aat	tgg	ctg	ggc	tac	tcc	aac	tct	ctg	ctt	aac	ccc	gtc	att	tac	1200	
Ile 385	Asn	Trp	Leu	Gly	Tyr 390	Ser	Asn	Ser	Leu	Leu 395	Asn	Pro	Val	Ile	Tyr 400		
gca	tac	ttc	aac	aag	gac	ttt	caa	aac	gcg	ttt	aag	aag	atc	att	aag	1248	
Ala	Tyr	Phe	Asn	Lys 405	Asp	Phe	Gln	Asn	Ala 410	Phe	Lys	Lys	Ile	Ile 415	Lys		
tgt	aag	ttc	tgc	cgc	cag	tac	cgt	act	cga	gag	agg	agg	gcc	cgc	ttc	1296	
Cys	Lys	Phe	Cys 420	Arg	Gln	Tyr	Arg	Thr 425	Arg	Glu	Arg	Arg	Ala 430	Arg	Phe		
gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	gcc	cac	aag	aac	att	cga	gag	1344	
Val	Ser	Lys 435	Lys	Gly	Asn	Cys	Asn 440	Val	Ala	His	Lys	Asn 445	Ile	Arg	Glu		
cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	acc	acg	ctg	gtg	gac	ctc	aaa	1392	
Gln	Gly 450	Arg	Phe	Leu	Gln	Asp 455	Val	Phe	Thr	Thr	Leu 460	Val	Asp	Leu	Lys		
tgg	cca	cac	act	ctg	ctc	att	ttc	acc	atg	tcc	ttc	ctg	tgc	agc	tgg	1440	
Trp 465	Pro	His	Thr	Leu	Leu 470	Ile	Phe	Thr	Met	Ser 475	Phe	Leu	Cys	Ser	Trp 480		
ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	ggt	gat	1488	
Leu	Leu	Phe	Ala	Met 485	Val	Trp	Trp	Leu	Ile 490	Ala	Phe	Ala	His	Gly 495	Asp		
ctc	tat	gct	tac	atg	gag	aaa	ggc	atc	acg	gac	ctg	gcc	ccc	tac	cca	1536	
Leu	Tyr	Ala	Tyr 500	Met	Glu	Lys	Gly	Ile 505	Thr	Asp	Leu	Ala	Pro 510	Tyr	Pro		
tac	gat	gta	cca	gat	tac	gcc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	1584	
Tyr	Asp	Val 515	Pro	Asp	Tyr	Ala	Gly 520	Glu	Gly	Thr	Asn	Val 525	Pro	Cys	Val		
aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	1632	
Thr	Ser 530	Ile	His	Ser	Phe	Ser 535	Ser	Ala	Phe	Leu	Phe 540	Ser	Ile	Glu	Val		
cag	gtg	acc	att	ggt	ttc	ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	1680	
Gln 545	Val	Thr	Ile	Gly	Phe 550	Gly	Gly	Arg	Met	Val 555	Thr	Glu	Glu	Cys	Pro 560		
ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	1728	
Leu	Ala	Ile	Leu	Ile 565	Leu	Ile	Val	Gln	Asn 570	Ile	Val	Gly	Leu	Met 575	Ile		
aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	1776	
Asn	Ala	Ile	Met 580	Leu	Gly	Cys	Ile	Phe 585	Met	Lys	Thr	Ala	Gln 590	Ala	His		
cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	1824	

Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	Val	Ile	Thr	Leu		
		595					600					605					
cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	1872	
Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys		
	610					615					620						
agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	1920	
Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr		
	625				630					635					640		
acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	1968	
Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro		
				645					650					655			
atg	gag	aat	ggc	gtg	ggt	ggt	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	2016	
Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu		
			660					665					670				
atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	2064	
Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala		
		675					680					685					
cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	2112	
Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu		
	690					695					700						
gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	2160	
Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser		
	705				710				715						720		
tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	2208	
Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val		
				725				730						735			
gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggt	aac	2256	
Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn		
			740					745					750				
acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	2304	
Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu		
		755					760					765					
gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	ggg	ccc	2352	
Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro		
	770					775					780						
ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	2400	
Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser		
					790				795						800		
atc	tct	cca	gat	tcc	ttg	tcc										2421	
Ile	Ser	Pro	Asp	Ser	Leu	Ser											
				805													

<210> 118
 <211> 807
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 118

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 20 25 30
 Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
 35 40 45
 Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
 50 55 60
 Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
 65 70 75 80
 Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
 85 90 95
 Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
 100 105 110
 Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
 115 120 125
 Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140
 Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
 145 150 155 160
 Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
 165 170 175
 Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
 180 185 190
 His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
 195 200 205
 Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220
 Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240
 Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255
 Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270
 Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285

Ala Leu Glu Val Ile Glu Val His Arg Val Gly³³⁶ Asn Ser Lys Glu His
 290 295 300

Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320

Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335

Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350

Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365

Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380

Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400

Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415

Cys Lys Phe Cys Arg Gln Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe
 420 425 430

Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu
 435 440 445

Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys
 450 455 460

Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp
 465 470 475 480

Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp
 485 490 495

Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro
 500 505 510

Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val
 515 520 525

Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val
 530 535 540

Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro
 545 550 555 560

Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile

565 337 570 575
 Asn Ala Ile Met₅₈₀ Leu Gly Cys Ile Phe₅₈₅ Met Lys Thr Ala Gln₅₉₀ Ala His
 Arg Arg Ala₅₉₅ Glu Thr Leu Ile Phe₆₀₀ Ser Lys His Ala Val₆₀₅ Ile Thr Leu
 Arg His₆₁₀ Gly Arg Leu Cys Phe₆₁₅ Met Leu Arg Val Gly₆₂₀ Asp Leu Arg Lys
 Ser Met Ile Ile Ser Ala₆₃₀ Thr Ile His Met Gln₆₃₅ Val Val Arg Lys Thr₆₄₀
 Thr Ser Pro Glu Gly₆₄₅ Glu Val Val Pro Leu₆₅₀ His Gln Val Asp Ile₆₅₅ Pro
 Met Glu Asn Gly₆₆₀ Val Gly Gly Asn Gly₆₆₅ Ile Phe Leu Val Ala₆₇₀ Pro Leu
 Ile Ile Tyr₆₇₅ His Val Ile Asp Ser₆₈₀ Asn Ser Pro Leu Tyr₆₈₅ Asp Leu Ala
 Pro Ser₆₉₀ Asp Leu His His His₆₉₅ Gln Asp Leu Glu Ile₇₀₀ Ile Val Ile Leu
 Glu Gly Val Val Glu Thr₇₁₀ Thr Gly Ile Thr Thr₇₁₅ Gln Ala Arg Thr Ser₇₂₀
 Tyr Leu Ala Asp Glu₇₂₅ Ile Leu Trp Gly Gln₇₃₀ Arg Phe Val Pro Ile₇₃₅ Val
 Ala Glu Glu Asp₇₄₀ Gly Arg Tyr Ser Val₇₄₅ Asp Tyr Ser Lys Phe₇₅₀ Gly Asn
 Thr Ile Lys₇₅₅ Val Pro Thr Pro Leu₇₆₀ Cys Thr Ala Arg Gln₇₆₅ Leu Asp Glu
 Asp Arg₇₇₀ Ser Leu Leu Asp Ala₇₇₅ Leu Thr Leu Ala Ser₇₈₀ Ser Arg Gly Pro
 Leu Arg Lys Arg Ser Val₇₉₀ Ala Val Ala Lys Ala₇₉₅ Lys Pro Lys Phe Ser₈₀₀
 Ile Ser Pro Asp Ser₈₀₅ Leu Ser

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 <211> 2313
 <212> DNA
 <213> Artificial sequence
 <220>

<223> hybrid sequence

<220>

<221> CDS

<222> (1)..(2313)

<400> 119

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gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
35 40 45	
tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag	192
Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu	
50 55 60	
cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc	240
Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val	
65 70 75 80	
acc gac ctc atg gtg tcg gtg ttg gtg ctg ccc atg gcc gcg ctg tat	288
Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr	
85 90 95	
cag gtg ctc aac aag tgg aca ctg ggc cag gta acc tgc gac ctg ttc	336
Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe	
100 105 110	
atc gcc ctc gac gtg ctg tgc tgc acc tca tcc atc ttg cac ctg tgc	384
Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys	
115 120 125	
gcc atc gcg ctg gac agg tac tgg gcc atc acg gac ccc atc gac tac	432
Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr	
130 135 140	
gtg aac aag agg acg ccc cgg cgc gcc gct gcg ctc atc tcg ctc act	480
Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr	
145 150 155 160	
tgg ctt att ggc ttc ctc atc tct atc ccg ccc atg ctg ggc tgg cgc	528
Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg	
165 170 175	
acc ccg gaa gac cgc tcg gac ccc gac gca tgc acc att agc aag gat	576
Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp	
180 185 190	
cat ggc tac act atc tat tcc acc ttt gga gct ttc tac atc ccg ctg	624
His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu	
195 200 205	
ctg ctc atg ctg gtt ctc tat ggg cgc ata ttc cga gct gcg cgc ttc	672
Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe	
210 215 220	
cgc atc cgc aag acg gtc aaa aag gtg gag aag acc gga gcg gac acc	720
Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr	
225 230 235 240	
cgc cat gga gca tct ccc gcc ccg cag ccc aag aag agt gtg aat gga	768

339																
Arg	His	Gly	Ala	Ser 245	Pro	Ala	Pro	Gln	Pro 250	Lys	Lys	Ser	Val	Asn 255	Gly	
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly	816
ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
gcc Ala	ctg Leu 290	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His	912
ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggt Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320	960
ttc Phe	gag Glu	agg Arg	aaa Lys	aat Asn 325	gag Glu	cgc Arg	aac Asn	gcc Ala	gag Glu 330	gcg Ala	aag Lys	cgc Arg	aag Lys	atg Met 335	gcc Ala	1008
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys	1248
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	tac Tyr	cgt Arg	act Thr 425	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 430	cgc Arg	ttc Phe	1296
gtg Val	tcc Ser	aag Lys 435	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 440	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 445	att Ile	cga Arg	gag Glu	1344
cag Gln	ggc Gly 450	cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 455	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 460	gtg Val	gac Asp	ctc Leu	aaa Lys	1392
tgg Trp 465	cca Pro	cac His	act Thr	ctg Leu	ctc Leu 470	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 475	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 480	1440
ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 485	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 490	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 495	gat Asp	1488
ctc Leu	tat Tyr	gct Ala	tac Tyr 500	atg Met	gag Glu	aaa Lys	ggc Gly	atc Ile 505	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 510	tac Tyr	cca Pro	1536
tac Tyr	gat Asp	gta Val	cca Pro	gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro	tgc Cys	gtc Val	1584

340																
515						520					525					
aca Thr	agc Ser 530	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 535	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 540	tcc Ser	atc Ile	gag Glu	gtc Val	1632
cag Gln 545	gtg Val	acc Thr	att Ile	ggg Gly	ttc Phe 550	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 555	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 560	1680
ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 565	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 570	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 575	atc Ile	1728
aac Asn	gcc Ala	atc Ile	atg Met 580	ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 585	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 590	gca Ala	cat His	1776
cgg Arg	cgg Arg	gca Ala 595	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 600	agc Ser	aag Lys	cat His	gct Ala	gtg Val 605	atc Ile	acc Thr	ctg Leu	1824
cgc Arg	cat His 610	ggc Gly	cgc Arg	ctg Leu	tgc Cys	ttc Phe 615	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 620	gac Asp	ctc Leu	cga Arg	aag Lys	1872
agc Ser 625	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 630	acc Thr	atc Ile	cac His	atg Met	cag Gln 635	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 640	1920
acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 645	gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 650	cac His	cag Gln	gta Val	gac Asp	atc Ile 655	ccc Pro	1968
atg Met	gag Glu	aat Asn	ggc Gly 660	gtg Val	ggg Gly	ggg Gly	aac Asn	ggc Gly 665	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 670	cca Pro	ctc Leu	2016
atc Ile	atc Ile	tac Tyr 675	cac His	gtc Val	atc Ile	gac Asp	tcc Ser 680	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr 685	gac Asp	ctg Leu	gct Ala	2064
cct Pro	agt Ser 690	gac Asp	ctg Leu	cac His	cac His	cac His 695	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile 700	att Ile	gtc Val	atc Ile	ttg Leu	2112
gaa Glu 705	ggc Gly	gtg Val	gta Val	gaa Glu	acc Thr 710	acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr 715	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 720	2160
tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu 725	att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln 730	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile 735	gtg Val	2208
gcc Ala	gag Glu	gag Glu	gac Asp 740	ggc Gly	cgc Arg	tat Tyr	tct Ser	gtg Val 745	gac Asp	tac Tyr	tcc Ser	aaa Lys	ttt Phe 750	ggg Gly	aac Asn	2256
acc Thr	att Ile	aaa Lys 755	gtg Val	ccc Pro	aca Thr	cca Pro	ctc Leu 760	tgc Cys	aca Thr	gcc Ala	cgc Arg	cag Gln 765	ctt Leu	gat Asp	gag Glu	2304
gac Asp	cgc Arg 770	agt Ser														2313
<210>	120															
<211>	771															

<212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 120

Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
 1 5 10 15

Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
 20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
 35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
 50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
 65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
 85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
 100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
 115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
 145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
 165 170 175

Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
 180 185 190

His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
 195 200 205

Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220

Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240

Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly

245 250 342 255
 Glu Ser Gly Ser₂₆₀ Arg Asn Trp Arg Leu₂₆₅ Gly Val Glu Ser Lys₂₇₀ Ala Gly
 Gly Ala Leu₂₇₅ Cys Ala Asn Gly Ala₂₈₀ Val Arg Gln Gly Asp₂₈₅ Asp Gly Ala
 Ala Leu₂₉₀ Glu Val Ile Glu Val₂₉₅ His Arg Val Gly Asn₃₀₀ Ser Lys Glu His
 Leu₃₀₅ Pro Leu Pro Ser Glu₃₁₀ Ala Gly Pro Thr Pro₃₁₅ Cys Ala Pro Ala Ser₃₂₀
 Phe Glu Arg Lys Asn₃₂₅ Glu Arg Asn Ala Glu₃₃₀ Ala Lys Arg Lys Met₃₃₅ Ala
 Leu Ala Arg Glu₃₄₀ Arg Lys Thr Val Lys₃₄₅ Thr Leu Gly Ile Ile₃₅₀ Met Gly
 Thr Phe Ile₃₅₅ Leu Cys Trp Leu Pro Phe Phe Ile Val Ala₃₆₅ Leu Val Leu
 Pro Phe₃₇₀ Cys Glu Ser Ser Cys₃₇₅ His Met Pro Thr Leu₃₈₀ Leu Gly Ala Ile
 Ile₃₈₅ Asn Trp Leu Gly Tyr₃₉₀ Ser Asn Ser Leu Leu₃₉₅ Asn Pro Val Ile Tyr₄₀₀
 Ala Tyr Phe Asn Lys₄₀₅ Asp Phe Gln Asn Ala₄₁₀ Phe Lys Lys Ile Ile₄₁₅ Lys
 Cys Lys Phe Cys₄₂₀ Arg Gln Tyr Arg Thr₄₂₅ Arg Glu Arg Arg Ala₄₃₀ Arg Phe
 Val Ser Lys₄₃₅ Lys Gly Asn Cys Asn₄₄₀ Val Ala His Lys Asn₄₄₅ Ile Arg Glu
 Gln Gly₄₅₀ Arg Phe Leu Gln Asp₄₅₅ Val Phe Thr Thr Leu₄₆₀ Val Asp Leu Lys
 Trp₄₆₅ Pro His Thr Leu Leu₄₇₀ Ile Phe Thr Met Ser₄₇₅ Phe Leu Cys Ser Trp₄₈₀
 Leu Leu Phe Ala Met₄₈₅ Val Trp Trp Leu Ile₄₉₀ Ala Phe Ala His Gly₄₉₅ Asp
 Leu Tyr Ala Tyr₅₀₀ Met Glu Lys Gly Ile₅₀₅ Thr Asp Leu Ala Pro₅₁₀ Tyr Pro
 Tyr Asp Val₅₁₅ Pro Asp Tyr Ala Gly₅₂₀ Glu Gly Thr Asn Val₅₂₅ Pro Cys Val

Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val
 530 535 540

Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro
 545 550 555 560

Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile
 565 570 575

Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His
 580 585 590

Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu
 595 600 605

Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys
 610 615 620

Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr
 625 630 635 640

Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro
 645 650 655

Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu
 660 665 670

Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala
 675 680 685

Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu
 690 695 700

Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser
 705 710 715 720

Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val
 725 730 735

Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn
 740 745 750

Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu
 755 760 765

Asp Arg Ser
 770

<210> 121
 <211> 2361
 <212> DNA

<213> Artificial sequence

<220>

<223> hybrid sequence

<220>

<221> CDS

<222> (1)..(2361)

<400> 121

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

225				230				345 235				240				
cgc Arg	cat His	gga Gly	gca Ala	tct Ser 245	ccc Pro	gcc Ala	ccg Pro	cag Gln	ccc Pro 250	aag Lys	aag Lys	agt Ser	gtg Val	aat Asn 255	gga Gly	768
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly	816
ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
gcc Ala	ctg Leu 290	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His	912
ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggt Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320	960
ttc Phe	gag Glu	agg Arg	aaa Lys	aat Asn 325	gag Glu	cgc Arg	aac Asn	gcc Ala	gag Glu 330	gcg Ala	aag Lys	cgc Arg	aag Lys	atg Met 335	gcc Ala	1008
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys	1248
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	tac Tyr	cgt Arg	act Thr 425	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 430	cgc Arg	ttc Phe	1296
gtg Val	tcc Ser	aag Lys 435	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 440	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 445	att Ile	cga Arg	gag Glu	1344
cag Gln	ggc Gly 450	cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 455	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 460	gtg Val	gac Asp	ctc Leu	aaa Lys	1392
tgg Trp 465	cca Pro	cac His	act Thr	ctg Leu	ctc Leu 470	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 475	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 480	1440
ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 485	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 490	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 495	gac Asp	1488
ctg Leu	gcc Ala	ccc Pro	gga Gly 500	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 505	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 510	atc Ile	cac His	1536

tcc Ser	ttt Phe	tca Ser 515	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 520	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 525	gtg Val	acc Thr	att Ile	1584
ggt Gly	ttc Phe 530	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 535	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 540	ctg Leu	gcc Ala	atc Ile	ctc Leu	1632
att Ile 545	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 550	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 555	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 560	1680
ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 565	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 570	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 575	gaa Glu	1728
acc Thr	ctc Leu	atc Ile	ttc Phe 580	agc Ser	aag Lys	cat His	gct Ala	gtg Val 585	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 590	ggc Gly	cgc Arg	1776
ctg Leu	tgc Cys	ttc Phe 595	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 600	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 605	atg Met	atc Ile	att Ile	1824
agc Ser	gcc Ala 610	acc Thr	atc Ile	cac His	atg Met	cag Gln 615	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 620	acc Thr	agc Ser	ccc Pro	gag Glu	1872
ggc Gly 625	gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 630	cac His	cag Gln	gta Val	gac Asp	atc Ile 635	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 640	1920
gtg Val	ggt Gly	ggt Gly	aac Asn	ggc Gly 645	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 650	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 655	cac His	1968
gtc Val	atc Ile	gac Asp	tcc Ser 660	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr 665	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser 670	gac Asp	ctg Leu	2016
cac His	cac His	cac His 675	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile 680	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu 685	ggc Gly	gtg Val	gta Val	2064
gaa Glu	acc Thr 690	acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr 695	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 700	tac Tyr	cta Leu	gct Ala	gac Asp	2112
gag Glu 705	att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln 710	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile 715	gtg Val	gcc Ala	gag Glu	gag Glu	gac Asp 720	2160
ggc Gly	cgc Arg	tat Tyr	tct Ser	gtg Val 725	gac Asp	tac Tyr	tcc Ser	aaa Lys	ttt Phe 730	ggt Gly	aac Asn	acc Thr	att Ile	aaa Lys 735	gtg Val	2208
ccc Pro	aca Thr	cca Pro	ctc Leu 740	tgc Cys	aca Thr	gcc Ala	cgc Arg	cag Gln 745	ctt Leu	gat Asp	gag Glu	gac Asp	cgc Arg 750	agt Ser	ctg Leu	2256
ctg Leu	gat Asp	gcc Ala 755	ctg Leu	acc Thr	ctc Leu	gcc Ala	tgc Ser 760	tgc Ser	cgc Arg	ggg Gly	ccc Pro	ctg Leu 765	cgc Arg	aag Lys	cgc Arg	2304
agt Ser	gtg Val 770	gct Ala	gtg Val	gcg Ala	aag Lys	gcc Ala 775	aag Lys	ccc Pro	aag Lys	ttt Phe	agc Ser 780	atc Ile	tct Ser	cca Pro	gat Asp	2352

tcc ttg tcc
Ser Leu Ser
785

<210> 122
<211> 787
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic Construct

<400> 122

Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
1 5 10 15

Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
165 170 175

Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
180 185 190

His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
195 200 205

Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
210 215 220

Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240
 Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255
 Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270
 Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285
 Ala Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His
 290 295 300
 Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320
 Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335
 Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350
 Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365
 Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400
 Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415
 Cys Lys Phe Cys Arg Gln Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe
 420 425 430
 Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu
 435 440 445
 Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys
 450 455 460
 Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp
 465 470 475 480
 Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp
 485 490 495

Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His
 500 505 510
 Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile
 515 520 525
 Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu
 530 535 540
 Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met
 545 550 555 560
 Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu
 565 570 575
 Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg
 580 585 590
 Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile
 595 600 605
 Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
 610 615 620
 Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
 625 630 635 640
 Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
 645 650 655
 Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
 660 665 670
 His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
 675 680 685
 Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
 690 695 700
 Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
 705 710 715 720
 Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val
 725 730 735
 Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu
 740 745 750
 Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg
 755 760 765

350

Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp
 770 775 780

Ser Leu Ser
 785

<210> 123
 <211> 2253
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2253)

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

cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser 200	acc Thr	ttt Phe	gga Gly	gct Ala	ttc Phe 205	tac Tyr	atc Ile	ccg Pro	ctg Leu	624
ctg Leu 210	ctc Leu	atg Met	ctg Leu	gtt Val	ctc Leu 215	tat Tyr	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe	672
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240	720
cgc Arg	cat His	gga Gly	gca Ala	tct Ser 245	ccc Pro	gcc Ala	ccg Pro	cag Gln	ccc Pro 250	aag Lys	aag Lys	agt Ser	gtg Val	aat Asn 255	gga Gly	768
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly	816
ggc Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggc Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
gcc Ala 290	ctg Leu	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His	912
ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggc Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320	960
ttc Phe	gag Glu	agg Arg	aaa Lys	aat Asn 325	gag Glu	cgc Arg	aac Asn	gcc Ala	gag Glu 330	gcg Ala	aag Lys	cgc Arg	aag Lys	atg Met 335	gcc Ala	1008
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro 370	ttc Phe	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys	1248
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	tac Tyr	cgt Arg	act Thr 425	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 430	cgc Arg	ttc Phe	1296
gtg Val	tcc Ser	aag Lys 435	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 440	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 445	att Ile	cga Arg	gag Glu	1344
cag Gln	ggc Gly 450	cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 455	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 460	gtg Val	gac Asp	ctc Leu	aaa Lys	1392

352																
tgg Trp 465	cca Pro	cac His	act Thr	ctg Leu 470	ctc Leu 470	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 475	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 480	1440
ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 485	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 490	gcc Ala	ttc Phe	gcc Ala	cac His	ggg Gly 495	gac Asp	1488
ctg Leu	gcc Ala	ccc Pro	gga Gly 500	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 505	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 510	atc Ile	cac His	1536
tcc Ser	ttt Phe	tca Ser 515	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 520	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 525	gtg Val	acc Thr	att Ile	1584
ggg Gly	ttc Phe 530	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 535	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 540	ctg Leu	gcc Ala	atc Ile	ctc Leu	1632
att Ile 545	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 550	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 555	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 560	1680
ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 565	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 570	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 575	gaa Glu	1728
acc Thr	ctc Leu	atc Ile	ttc Phe 580	agc Ser	aag Lys	cat His	gct Ala	gtg Val 585	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 590	ggc Gly	cgc Arg	1776
ctg Leu	tgc Cys	ttc Phe 595	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 600	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 605	atg Met	atc Ile	att Ile	1824
agc Ser	gcc Ala 610	acc Thr	atc Ile	cac His	atg Met	cag Gln 615	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 620	acc Thr	agc Ser	ccc Pro	gag Glu	1872
ggc Gly 625	gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 630	cac His	cag Gln	gta Val	gac Asp 635	atc Ile 635	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 640	1920
gtg Val	ggg Gly	ggg Gly	aac Asn	ggc Gly 645	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 650	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 655	cac His	1968
gtc Val	atc Ile	gac Asp	tcc Ser 660	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr 665	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser 670	gac Asp	ctg Leu	2016
cac His	cac His	cac His 675	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile 680	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu 685	ggc Gly	gtg Val	gta Val	2064
gaa Glu 690	acc Thr	acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr 695	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 700	tac Tyr	cta Leu	gct Ala	gac Asp	2112
gag Glu 705	att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln 710	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile 715	gtg Val	gcc Ala	gag Glu	gag Glu	gac Asp 720	2160
ggc Gly	cgc Arg	tat Tyr	tct Ser	gtg Val 725	gac Asp	tac Tyr	tcc Ser	aaa Lys	ttt Phe 730	ggg Gly	aac Asn	acc Thr	att Ile	aaa Lys 735	gtg Val	2208
ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt		2253

Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
740 745 750 353

<210> 124
<211> 751
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic Construct

<400> 124

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Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
165 170 175

Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
180 185 190

His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
195 200 205

Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
210 215 220

Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240
 Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255
 Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270
 Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285
 Ala Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His
 290 295 300
 Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320
 Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335
 Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350
 Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365
 Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400
 Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415
 Cys Lys Phe Cys Arg Gln Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe
 420 425 430
 Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu
 435 440 445
 Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys
 450 455 460
 Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp
 465 470 475 480
 Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp
 485 490 495

Leu Ala Pro Gly Glu Gly Thr Asn Val³⁵⁵ Pro Cys Val Thr Ser Ile His
 500 505 510
 Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile
 515 520 525
 Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu
 530 535 540
 Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met
 545 550 555 560
 Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu
 565 570 575
 Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg
 580 585 590
 Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile
 595 600 605
 Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu
 610 615 620
 Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly
 625 630 635 640
 Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His
 645 650 655
 Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu
 660 665 670
 His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val
 675 680 685
 Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp
 690 695 700
 Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp
 705 710 715 720
 Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val
 725 730 735
 Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
 740 745 750

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 <211> 2433
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2433)

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

357																768
cgc	cat	gga	gca	tct	ccc	gcc	ccg	cag	ccc	aag	aag	agt	gtg	aat	gga	
Arg	His	Gly	Ala	Ser	Pro	Ala	Pro	Gln	Pro	Lys	Lys	Ser	Val	Asn	Gly	
245																
gag	tcg	ggg	agc	agg	aac	tgg	agg	ctg	ggc	gtg	gag	agc	aag	gct	ggg	816
Glu	Ser	Gly	Ser	Arg	Asn	Trp	Arg	Leu	Gly	Val	Glu	Ser	Lys	Ala	Gly	
260																
ggt	gct	ctg	tgc	gcc	aat	ggc	gcg	gtg	agg	caa	ggt	gac	gat	ggc	gcc	864
Gly	Ala	Leu	Cys	Ala	Asn	Gly	Ala	Val	Arg	Gln	Gly	Asp	Asp	Gly	Ala	
275																
gac	ctg	gag	gtg	atc	gag	gtg	cac	cga	gtg	ggc	aac	tcc	aaa	gag	cac	912
Ala	Leu	Glu	Val	Ile	Glu	Val	His	Arg	Val	Gly	Asn	Ser	Lys	Glu	His	
290																
ttg	cct	ctg	ccc	agc	gag	gct	ggt	cct	acc	cct	tgt	gcc	ccc	gcc	tct	960
Leu	Pro	Leu	Pro	Ser	Glu	Ala	Gly	Pro	Thr	Pro	Cys	Ala	Pro	Ala	Ser	
305																
ttc	gag	agg	aaa	aat	gag	cgc	aac	gcc	gag	gcg	aag	cgc	aag	atg	gcc	1008
Phe	Glu	Arg	Lys	Asn	Glu	Arg	Asn	Ala	Glu	Ala	Lys	Arg	Lys	Met	Ala	
325																
ctg	gcc	cga	gag	agg	aag	aca	gtg	aag	acg	ctg	ggc	atc	atc	atg	ggc	1056
Leu	Ala	Arg	Glu	Arg	Lys	Thr	Val	Lys	Thr	Leu	Gly	Ile	Ile	Met	Gly	
340																
acc	ttc	atc	ctc	tgc	tgg	ctg	ccc	ttc	ttc	atc	gtg	gct	ctt	gtt	ctg	1104
Thr	Phe	Ile	Leu	Cys	Trp	Leu	Pro	Phe	Phe	Ile	Val	Ala	Leu	Val	Leu	
355																
ccc	ttc	tgc	gag	agc	agc	tgc	cac	atg	ccc	acc	ctg	ttg	ggc	gcc	ata	1152
Pro	Phe	Cys	Glu	Ser	Ser	Cys	His	Met	Pro	Thr	Leu	Leu	Gly	Ala	Ile	
370																
atc	aat	tgg	ctg	ggc	tac	tcc	aac	tct	ctg	ctt	aac	ccc	gtc	att	tac	1200
Ile	Asn	Trp	Leu	Gly	Tyr	Ser	Asn	Ser	Leu	Leu	Asn	Pro	Val	Ile	Tyr	
385																
gca	tac	ttc	aac	aag	gac	ttt	caa	aac	gcg	ttt	aag	aag	atc	att	aag	1248
Ala	Tyr	Phe	Asn	Lys	Asp	Phe	Gln	Asn	Ala	Phe	Lys	Lys	Ile	Ile	Lys	
405																
tgt	aag	ttc	tgc	cgc	cag	ggc	gct	aca	agg	tac	cgt	act	cga	gag	agg	1296
Cys	Lys	Phe	Cys	Arg	Gln	Gly	Ala	Thr	Arg	Tyr	Arg	Thr	Arg	Glu	Arg	
420																
agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	gcc	cac	aag	1344
Arg	Ala	Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His	Lys	
435																
aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	acc	acg	ctg	1392
Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	Asp	Val	Phe	Thr	Thr	Leu	
450																
gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	att	ttc	acc	atg	tcc	ttc	1440
Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	Ile	Phe	Thr	Met	Ser	Phe	
465																
ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	tgg	tgg	ctc	atc	gcc	ttc	1488
Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	Trp	Trp	Leu	Ile	Ala	Phe	
485																
gcc	cac	ggt	gat	ctc	tat	gct	tac	atg	gag	aaa	ggc	atc	acg	gac	ctg	1536
Ala	His	Gly	Asp	Leu	Tyr	Ala	Tyr	Met	Glu	Lys	Gly	Ile	Thr	Asp	Leu	
500																
gcc	ccc	tac	cca	tac	gat	gta	cca	gat	tac	gcc	gga	gag	ggc	acc	aat	1584

Ala	Pro	Tyr 515	Pro	Tyr	Asp	Val	Pro 520	Asp	Tyr	Ala	Gly	Glu 525	Gly	Thr	Asn	
gtg Val	ccc Pro 530	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 535	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 540	gcc Ala	ttc Phe	ctt Leu	ttc Phe	1632
tcc Ser 545	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 550	acc Thr	att Ile	ggg Gly	ttc Phe	ggc Gly 555	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 560	1680
gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 565	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 570	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 575	gtc Val	1728
ggg Gly	ctg Leu	atg Met	atc Ile 580	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 585	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 590	aaa Lys	acg Thr	1776
gcc Ala	cag Gln	gca Ala 595	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 600	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 605	aag Lys	cat His	gct Ala	1824
gtg Val	atc Ile 610	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 615	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 620	ctg Leu	cgc Arg	gta Val	ggg Gly	1872
gac Asp 625	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 630	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 635	atc Ile	cac His	atg Met	cag Gln	gtg Val 640	1920
gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 645	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 650	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 655	cag Gln	1968
gta Val	gac Asp	atc Ile	ccc Pro 660	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 665	ggg Gly	ggg Gly	aac Asn	ggc Gly	atc Ile 670	ttc Phe	ctg Leu	2016
gtg Val	gcc Ala	cca Pro 675	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 680	gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn 685	agc Ser	ccg Pro	ctc Leu	2064
tac Tyr	gac Asp 690	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 695	ctg Leu	cac His	cac His	cac His	cag Gln 700	gac Asp	ctg Leu	gag Glu	atc Ile	2112
att Ile 705	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 710	gtg Val	gta Val	gaa Glu	acc Thr	acg Thr 715	ggc Gly	atc Ile	acc Thr	acc Thr	cag Gln 720	2160
gcc Ala	cgc Arg	acc Thr	tcc Ser	tac Tyr 725	cta Leu	gct Ala	gac Asp	gag Glu	att Ile 730	cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg 735	ttt Phe	2208
gtc Val	ccc Pro	att Ile	gtg Val 740	gcc Ala	gag Glu	gag Glu	gac Asp	ggc Gly 745	cgc Arg	tat Tyr	tct Ser	gtg Val	gac Asp 750	tac Tyr	tcc Ser	2256
aaa Lys	ttt Phe	ggg Gly 755	aac Asn	acc Thr	att Ile	aaa Lys	gtg Val 760	ccc Pro	aca Thr	cca Pro	ctc Leu	tgc Cys 765	aca Thr	gcc Ala	cgc Arg	2304
cag Gln	ctt Leu 770	gat Asp	gag Glu	gac Asp	cgc Arg	agt Ser 775	ctg Leu	ctg Leu	gat Asp	gcc Ala	ctg Leu 780	acc Thr	ctc Leu	gcc Ala	tcg Ser	2352
tcg Ser	cgg Arg	ggg Gly	ccc Pro	ctg Leu	cgc Arg	aag Lys	cgc Arg	agt Ser	gtg Val	gct Ala	gtg Val	gcg Ala	aag Lys	gcc Ala	aag Lys	2400

785		790		359 795		800	
ccc aag ttt agc atc tct cca gat tcc ttg tcc							2433
Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser							
		805		810			

<210> 126
 <211> 811
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 126

Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
1 5 10 15

Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
165 170 175

Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
180 185 190

His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
195 200 205

Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220 360

Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240

Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255

Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270

Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285

Ala Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His
 290 295 300

Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320

Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335

Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350

Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365

Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380

Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400

Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415

Cys Lys Phe Cys Arg Gln Gly Ala Thr Arg Tyr Arg Thr Arg Glu Arg
 420 425 430

Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys
 435 440 445

Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu
 450 455 460

Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe
 465 470 475 480

Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe

485
361
490
495

Ala His Gly Asp₅₀₀ Leu Tyr Ala Tyr Met₅₀₅ Glu Lys Gly Ile Thr₅₁₀ Asp Leu
 Ala Pro Tyr₅₁₅ Pro Tyr Asp Val₅₂₀ Pro Asp Tyr Ala Gly₅₂₅ Glu Gly Thr Asn
 Val₅₃₀ Pro Cys Val Thr Ser Ile₅₃₅ His Ser Phe Ser₅₄₀ Ser Ala Phe Leu Phe
 Ser₅₄₅ Ile Glu Val Gln Val₅₅₀ Thr Ile Gly Phe Gly₅₅₅ Gly Arg Met Val₅₆₀ Thr
 Glu Glu Cys Pro₅₆₅ Leu Ala Ile Leu Ile₅₇₀ Leu Ile Val Gln Asn Ile₅₇₅ Val
 Gly Leu Met Ile₅₈₀ Asn Ala Ile Met₅₈₅ Leu Gly Cys Ile Phe Met₅₉₀ Lys Thr
 Ala Gln Ala₅₉₅ His Arg Arg Ala Glu₆₀₀ Thr Leu Ile Phe Ser₆₀₅ Lys His Ala
 Val₆₁₀ Ile Thr Leu Arg His Gly₆₁₅ Arg Leu Cys Phe Met₆₂₀ Leu Arg Val Gly
 Asp₆₂₅ Leu Arg Lys Ser Met₆₃₀ Ile Ile Ser Ala Thr₆₃₅ Ile His Met Gln Val₆₄₀
 Val Arg Lys Thr₆₄₅ Thr Ser Pro Glu Gly₆₅₀ Glu Val Val Pro Leu His₆₅₅ Gln
 Val Asp Ile₆₆₀ Pro Met Glu Asn Gly₆₆₅ Val Gly Gly Asn Gly₆₇₀ Ile Phe Leu
 Val Ala Pro₆₇₅ Leu Ile Ile Tyr His₆₈₀ Val Ile Asp Ser₆₈₅ Asn Ser Pro Leu
 Tyr Asp₆₉₀ Leu Ala Pro Ser Asp₆₉₅ Leu His His His Gln₇₀₀ Asp Leu Glu Ile
 Ile₇₀₅ Val Ile Leu Glu Gly₇₁₀ Val Val Glu Thr Thr₇₁₅ Gly Ile Thr Thr Gln₇₂₀
 Ala Arg Thr Ser₇₂₅ Tyr Leu Ala Asp Glu₇₃₀ Ile Leu Trp Gly Gln₇₃₅ Arg Phe
 Val Pro Ile₇₄₀ Val Ala Glu Glu Asp Gly₇₄₅ Arg Tyr Ser Val Asp₇₅₀ Tyr Ser
 Lys Phe Gly₇₅₅ Asn Thr Ile Lys Val₇₆₀ Pro Thr Pro Leu Cys₇₆₅ Thr Ala Arg

Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser
770 775 780

Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys
785 790 795 800

Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
805 810

<210> 127
<211> 2325
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2325)

<400> 127	
atg gat gtg ctc agc cct ggt cag ggc aac aac acc aca tca cca ccg	48
Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro	
1 5 10 15	
gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
35 40 45	
tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag	192
Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu	
50 55 60	
cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc	240
Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val	
65 70 75 80	
acc gac ctc atg gtg tgc gtg ttg gtg ctg ccc atg gcc gcg ctg tat	288
Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr	
85 90 95	
cag gtg ctc aac aag tgg aca ctg ggc cag gta acc tgc gac ctg ttc	336
Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe	
100 105 110	
atc gcc ctc gac gtg ctg tgc tgc acc tca tcc atc ttg cac ctg tgc	384
Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys	
115 120 125	
gcc atc gcg ctg gac agg tac tgg gcc atc acg gac ccc atc gac tac	432
Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr	
130 135 140	
gtg aac aag agg acg ccc cgg cgc gcc gct gcg ctc atc tcg ctc act	480
Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Leu Ile Ser Leu Thr	
145 150 155 160	
tgg ctt att ggc ttc ctc atc tct atc ccg ccc atg ctg ggc tgg cgc	528

363															
Trp	Leu	Ile	Gly	Phe 165	Leu	Ile	Ser	Ile	Pro 170	Pro	Met	Leu	Gly	Trp 175	Arg
acc Thr	ccg Pro	gaa Glu	gac Asp 180	cgc Arg	tcg Ser	gac Asp	ccc Pro	gac Asp 185	gca Ala	tgc Cys	acc Thr	att Ile	agc Ser 190	aag Lys	gat Asp
cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser	acc Thr 200	ttt Phe	gga Gly	gct Ala	ttc Phe	tac Tyr 205	atc Ile	ccg Pro	ctg Leu
ctg Leu	ctc Leu 210	atg Met	ctg Leu	gtt Val	ctc Leu	tat Tyr 215	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240
cgc Arg	cat His	gga Gly	gca Ala	tct Ser 245	ccc Pro	gcc Ala	ccg Pro	cag Gln	ccc Pro 250	aag Lys	aag Lys	agt Ser	gtg Val	aat Asn 255	gga Gly
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly
ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala
gcc Ala	ctg Leu 290	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His
ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggt Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320
ttc Phe	gag Glu	agg Arg	aaa Lys	aat Asn 325	gag Glu	cgc Arg	aac Asn	gcc Ala	gag Glu 330	gcg Ala	aag Lys	cgc Arg	aag Lys	atg Met 335	gcc Ala
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	ggc Gly	gct Ala	aca Thr 425	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 430	gag Glu	agg Arg
agg Arg	gcc Ala	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val	gcc Ala	cac His	aag Lys

364																
435						440				445						
aac Asn	att Ile 450	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 455	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 460	ttc Phe	acc Thr	acg Thr	ctg Leu	1392
gtg Val 465	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 470	cac His	act Thr	ctg Leu	ctc Leu	att Ile 475	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 480	1440
ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 485	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 490	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 495	ttc Phe	1488
gcc Ala	cac His	ggt Gly	gat Asp 500	ctc Leu	tat Tyr	gct Ala	tac Tyr	atg Met 505	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 510	gac Asp	ctg Leu	1536
gcc Ala	ccc Pro	tac Tyr 515	cca Pro	tac Tyr	gat Asp	gta Val 520	cca Pro 520	gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 525	ggc Gly	acc Thr	aat Asn	1584
gtg Val 530	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser	atc Ile 535	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 540	gcc Ala	ttc Phe	ctt Leu	ttc Phe	1632
tcc Ser 545	atc Ile	gag Glu	gtc Val	cag Gln	gtg Val 550	acc Thr	att Ile	ggt Gly	ttc Phe	ggc Gly 555	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 560	1680
gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 565	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 570	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 575	gtc Val	1728
ggg Gly	ctg Leu	atg Met	atc Ile 580	aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 585	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 590	aaa Lys	acg Thr	1776
gcc Ala	cag Gln	gca Ala 595	cat His	cgg Arg	cgg Arg	gca Ala	gaa Glu 600	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 605	aag Lys	cat His	gct Ala	1824
gtg Val 610	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His	ggc Gly 615	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 620	ctg Leu	cgc Arg	gta Val	ggg Gly	1872
gac Asp 625	ctc Leu	cga Arg	aag Lys	agc Ser	atg Met 630	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 635	atc Ile	cac His	atg Met	cag Gln	gtg Val 640	1920
gtg Val	cgc Arg	aag Lys	acc Thr	acc Thr 645	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 650	ggt Val	gtg Val	cct Pro	ctc Leu	cac His 655	cag Gln	1968
gta Val	gac Asp	atc Ile	ccc Pro 660	atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 665	ggt Gly	ggt Gly	aac Asn	ggc Gly	atc Ile 670	ttc Phe	ctg Leu	2016
gtg Val	gcc Ala	cca Pro 675	ctc Leu	atc Ile	atc Ile	tac Tyr	cac His 680	gtc Val	atc Ile	gac Asp	tcc Ser	aac Asn 685	agc Ser	ccg Pro	ctc Leu	2064
tac Tyr	gac Asp 690	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp 695	ctg Leu	cac His	cac His	cac His	cag Gln 700	gac Asp	ctg Leu	gag Glu	atc Ile	2112
att Ile 705	gtc Val	atc Ile	ttg Leu	gaa Glu	ggc Gly 710	gtg Val	gta Val	gaa Glu	acc Thr	acg Thr 715	ggc Gly	atc Ile	acc Thr	acc Thr	cag Gln 720	2160

gcc cgc acc tcc tac cta gct gac gag att cta tgg ggg cag cgc ttt 2208
Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe
725 730 735

gtc ccc att gtg gcc gag gag gac ggc cgc tat tct gtg gac tac tcc 2256
Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser
740 745 750

aaa ttt ggt aac acc att aaa gtg ccc aca cca ctc tgc aca gcc cgc 2304
Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg
755 760 765

cag ctt gat gag gac cgc agt 2325
Gln Leu Asp Glu Asp Arg Ser
770 775

<210> 128
<211> 775
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic Construct

<400> 128

Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
1 5 10 15

Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
85 90 95

Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
100 105 110

Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
115 120 125

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
130 135 140

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
145 150 155 160

Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg

165
170
366
175

Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
 180 185 190

His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
 195 200 205

Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220

Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240

Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255

Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270

Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285

Ala Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His
 290 295 300

Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320

Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335

Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350

Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365

Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380

Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400

Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415

Cys Lys Phe Cys Arg Gln Gly Ala Thr Arg Tyr Arg Thr Arg Glu Arg
 420 425 430

Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys
 435 440 445

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

Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe
 725 730 735

Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser
 740 745 750

Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg
 755 760 765

Gln Leu Asp Glu Asp Arg Ser
 770 775

<210> 129
 <211> 2373
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2373)

<400> 129
 atg gat gtg ctc agc cct ggt cag ggc aac aac acc aca tca cca ccg 48
 Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
 1 5 10 15
 gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc 96
 Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
 20 25 30
 gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc 144
 Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
 35 40 45
 tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag 192
 Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
 50 55 60
 cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc 240
 Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
 65 70 75
 acc gac ctc atg gtg tcg gtg ttg gtg ctg ccc atg gcc gcg ctg tat 288
 Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
 85 90 95
 cag gtg ctc aac aag tgg aca ctg ggc cag gta acc tgc gac ctg ttc 336
 Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe
 100 105 110
 atc gcc ctc gac gtg ctg tgc tgc acc tca tcc atc ttg cac ctg tgc 384
 Ile Ala Leu Asp Val Leu Cys Cys Thr Ser Ser Ile Leu His Leu Cys
 115 120 125
 gcc atc gcg ctg gac agg tac tgg gcc atc acg gac ccc atc gac tac 432
 Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140
 gtg aac aag agg acg ccc cgg cgc gcc gct gcg ctc atc tcg ctc act 480
 Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr

145	369										155	160					
tgg	ctt	att	ggc	ttc	ctc	atc	tct	atc	ccg	ccc	atg	ctg	ggc	tgg	cgc		528
Trp	Leu	Ile	Gly	Phe	Leu	Ile	Ser	Ile	Pro	Pro	Met	Leu	Gly	Trp	Arg		
				165					170					175			
acc	ccg	gaa	gac	cgc	tcg	gac	ccc	gac	gca	tgc	acc	att	agc	aag	gat		576
Thr	Pro	Glu	Asp	Arg	Ser	Asp	Pro	Asp	Ala	Cys	Thr	Ile	Ser	Lys	Asp		
			180					185					190				
cat	ggc	tac	act	atc	tat	tcc	acc	ttt	gga	gct	ttc	tac	atc	ccg	ctg		624
His	Gly	Tyr	Thr	Ile	Tyr	Ser	Thr	Phe	Gly	Ala	Phe	Tyr	Ile	Pro	Leu		
		195					200					205					
ctg	ctc	atg	ctg	gtt	ctc	tat	ggg	cgc	ata	ttc	cga	gct	gcg	cgc	ttc		672
Leu	Leu	Met	Leu	Val	Leu	Tyr	Gly	Arg	Ile	Phe	Arg	Ala	Ala	Arg	Phe		
	210					215					220						
cgc	atc	cgc	aag	acg	gtc	aaa	aag	gtg	gag	aag	acc	gga	gcg	gac	acc		720
Arg	Ile	Arg	Lys	Thr	Val	Lys	Lys	Val	Glu	Lys	Thr	Gly	Ala	Asp	Thr		
225					230					235					240		
cgc	cat	gga	gca	tct	ccc	gcc	ccg	cag	ccc	aag	aag	agt	gtg	aat	gga		768
Arg	His	Gly	Ala	Ser	Pro	Ala	Pro	Gln	Pro	Lys	Lys	Ser	Val	Asn	Gly		
				245					250					255			
gag	tcg	ggg	agc	agg	aac	tgg	agg	ctg	ggc	gtg	gag	agc	aag	gct	ggg		816
Glu	Ser	Gly	Ser	Arg	Asn	Trp	Arg	Leu	Gly	Val	Glu	Ser	Lys	Ala	Gly		
			260					265					270				
ggt	gct	ctg	tgc	gcc	aat	ggc	gcg	gtg	agg	caa	ggt	gac	gat	ggc	gcc		864
Gly	Ala	Leu	Cys	Ala	Asn	Gly	Ala	Val	Arg	Gln	Gly	Asp	Asp	Gly	Ala		
		275					280					285					
gcc	ctg	gag	gtg	atc	gag	gtg	cac	cga	gtg	ggc	aac	tcc	aaa	gag	cac		912
Ala	Leu	Glu	Val	Ile	Glu	Val	His	Arg	Val	Gly	Asn	Ser	Lys	Glu	His		
	290					295					300						
ttg	cct	ctg	ccc	agc	gag	gct	ggt	cct	acc	cct	tgt	gcc	ccc	gcc	tct		960
Leu	Pro	Leu	Pro	Ser	Glu	Ala	Gly	Pro	Thr	Pro	Cys	Ala	Pro	Ala	Ser		
305					310					315					320		
ttc	gag	agg	aaa	aat	gag	cgc	aac	gcc	gag	gcg	aag	cgc	aag	atg	gcc		1008
Phe	Glu	Arg	Lys	Asn	Glu	Arg	Asn	Ala	Glu	Ala	Lys	Arg	Lys	Met	Ala		
				325					330					335			
ctg	gcc	cga	gag	agg	aag	aca	gtg	aag	acg	ctg	ggc	atc	atc	atg	ggc		1056
Leu	Ala	Arg	Glu	Arg	Lys	Thr	Val	Lys	Thr	Leu	Gly	Ile	Ile	Met	Gly		
			340					345					350				
acc	ttc	atc	ctc	tgc	tgg	ctg	ccc	ttc	ttc	atc	gtg	gct	ctt	gtt	ctg		1104
Thr	Phe	Ile	Leu	Cys	Trp	Leu	Pro	Phe	Phe	Ile	Val	Ala	Leu	Val	Leu		
		355					360					365					
ccc	ttc	tgc	gag	agc	agc	tgc	cac	atg	ccc	acc	ctg	ttg	ggc	gcc	ata		1152
Pro	Phe	Cys	Glu	Ser	Ser	Cys	His	Met	Pro	Thr	Leu	Leu	Gly	Ala	Ile		
	370					375					380						
atc	aat	tgg	ctg	ggc	tac	tcc	aac	tct	ctg	ctt	aac	ccc	gtc	att	tac		1200
Ile	Asn	Trp	Leu	Gly	Tyr	Ser	Asn	Ser	Leu	Leu	Asn	Pro	Val	Ile	Tyr		
385					390					395				400			
gca	tac	ttc	aac	aag	gac	ttt	caa	aac	gcg	ttt	aag	aag	atc	att	aag		1248
Ala	Tyr	Phe	Asn	Lys	Asp	Phe	Gln	Asn	Ala	Phe	Lys	Lys	Ile	Ile	Lys		
				405					410					415			
tgt	aag	ttc	tgc	cgc	cag	ggc	gct	aca	agg	tac	cgt	act	cga	gag	agg		1296
Cys	Lys	Phe	Cys	Arg	Gln	Gly	Ala	Thr	Arg	Tyr	Arg	Thr	Arg	Glu	Arg		
			420					425					430				

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

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Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val				
705					710					715					720				2160
gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac				
Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn				
				725					730					735					2208
acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag				
Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu				
			740					745					750						2256
gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	ggg	ccc				
Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro				
		755					760					765							2304
ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc				
Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser				
	770					775					780								2352
atc	tct	cca	gat	tcc	ttg	tcc													
Ile	Ser	Pro	Asp	Ser	Leu	Ser													
785					790														2373

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 <211> 791
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 130

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

Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
 145 150 155 160
 Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
 165 170 175
 Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
 180 185 190
 His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
 195 200 205
 Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220
 Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240
 Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255
 Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270
 Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285
 Ala Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His
 290 295 300
 Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320
 Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335
 Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350
 Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365
 Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400
 Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415

Cys Lys Phe Cys Arg Gln Gly Ala Thr Arg Tyr Arg Thr Arg Glu Arg
 420 425 430
 Arg Ala Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys
 435 440 445
 Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu
 450 455 460
 Val Asp Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe
 465 470 475 480
 Leu Cys Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe
 485 490 495
 Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val
 500 505 510
 Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val
 515 520 525
 Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro
 530 535 540
 Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile
 545 550 555 560
 Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His
 565 570 575
 Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu
 580 585 590
 Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys
 595 600 605
 Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr
 610 615 620
 Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro
 625 630 635 640
 Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu
 645 650 655
 Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala
 660 665 670
 Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu
 675 680 685

374

Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser
690 695 700

Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val
705 710 715 720

Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn
725 730 735

Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu
740 745 750

Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro
755 760 765

Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser
770 775 780

Ile Ser Pro Asp Ser Leu Ser
785 790

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<212> DNA
<213> Artificial sequence

<220>
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<220>
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<222> (1)..(2265)

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gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
35 40 45	
tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag	192
Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu	
50 55 60	
cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc	240
Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val	
65 70 75 80	
acc gac ctc atg gtg tcg gtg ttg gtg ctg ccc atg gcc gcg ctg tat	288
Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr	
85 90 95	
cag gtg ctc aac aag tgg aca ctg ggc cag gta acc tgc gac ctg ttc	336
Gln Val Leu Asn Lys Trp Thr Leu Gly Gln Val Thr Cys Asp Leu Phe	
100 105 110	

atc Ile	gcc Ala	ctc Leu 115	gac Asp	gtg Val	ctg Leu	tgc Cys	tgc Cys 120	acc Thr	tca Ser	tcc Ser	atc Ile	ttg Leu 125	cac His	ctg Leu	tgc Cys	384
gcc Ala	atc Ile 130	gcg Ala	ctg Leu	gac Asp	agg Arg	tac Tyr 135	tgg Trp	gcc Ala	atc Ile	acg Thr	gac Asp 140	ccc Pro	atc Ile	gac Asp	tac Tyr	432
gtg Val 145	aac Asn	aag Lys	agg Arg	acg Thr	ccc Pro 150	cgg Arg	cgc Arg	gcc Ala	gct Ala	gcg Ala 155	ctc Leu	atc Ile	tcg Ser	ctc Leu	act Thr 160	480
tgg Trp	ctt Leu	att Ile	ggc Gly	ttc Phe 165	ctc Leu	atc Ile	tct Ser	atc Ile	ccg Pro 170	ccc Pro	atg Met	ctg Leu	ggc Gly	tgg Trp 175	cgc Arg	528
acc Thr	ccg Pro	gaa Glu	gac Asp 180	cgc Arg	tcg Ser	gac Asp	ccc Pro	gac Asp 185	gca Ala	tgc Cys	acc Thr	att Ile	agc Ser 190	aag Lys	gat Asp	576
cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser	acc Thr 200	ttt Phe	gga Gly	gct Ala	ttc Phe	tac Tyr 205	atc Ile	ccg Pro	ctg Leu	624
ctg Leu	ctc Leu 210	atg Met	ctg Leu	gtt Val	ctc Leu	tat Tyr 215	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe	672
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240	720
cgc Arg	cat His	gga Gly	gca Ala	tct Ser 245	ccc Pro	gcc Ala	ccg Pro	cag Gln	ccc Pro 250	aag Lys	aag Lys	agt Ser	gtg Val	aat Asn 255	gga Gly	768
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly	816
ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
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ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggt Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320	960
ttc Phe	gag Glu	agg Arg	aaa Lys	aat Asn 325	gag Glu	cgc Arg	aac Asn	gcc Ala	gag Glu 330	gcg Ala	aag Lys	cgc Arg	aag Lys	atg Met 335	gcc Ala	1008
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe 355	atc Ile	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152

376																1200
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys	1248
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	ggc Gly	gct Ala	aca Thr 425	agg Arg	tac Tyr	cgt Arg	act Thr	cga Arg 430	gag Glu	agg Arg	1296
agg Arg	gcc Ala	cgc Arg 435	ttc Phe	gtg Val	tcc Ser	aag Lys	aaa Lys 440	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 445	gcc Ala	cac His	aag Lys	1344
aac Asn	att Ile 450	cga Arg	gag Glu	cag Gln	ggc Gly	cgc Arg 455	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 460	ttc Phe	acc Thr	acg Thr	ctg Leu	1392
gtg Val 465	gac Asp	ctc Leu	aaa Lys	tgg Trp	cca Pro 470	cac His	act Thr	ctg Leu	ctc Leu	att Ile 475	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 480	1440
ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 485	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 490	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 495	ttc Phe	1488
gcc Ala	cac His	ggt Gly	gac Asp 500	ctg Leu	gcc Ala	ccc Pro	gga Gly	gag Glu 505	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 510	tgc Cys	gtc Val	1536
aca Thr	agc Ser	atc Ile 515	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 520	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 525	atc Ile	gag Glu	gtc Val	1584
cag Gln	gtg Val 530	acc Thr	att Ile	ggt Gly	ttc Phe	ggc Gly 535	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 540	gag Glu	gaa Glu	tgt Cys	ccc Pro	1632
ctg Leu 545	gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 550	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 555	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 560	1680
aac Asn	gcc Ala	atc Ile	atg Met	ctg Leu 565	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 570	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 575	cat His	1728
cgg Arg	cgg Arg	gca Ala	gaa Glu 580	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 585	aag Lys	cat His	gct Ala	gtg Val	atc Ile 590	acc Thr	ctg Leu	1776
cgc Arg	cat His	ggc Gly 595	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 600	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 605	ctc Leu	cga Arg	aag Lys	1824
agc Ser	atg Met 610	atc Ile	att Ile	agc Ser	gcc Ala	acc Thr 615	atc Ile	cac His	atg Met	cag Gln	gtg Val 620	gtg Val	cgc Arg	aag Lys	acc Thr	1872
acc Thr 625	agc Ser	ccc Pro	gag Glu	ggc Gly	gaa Glu 630	gtt Val	gtg Val	cct Pro	ctc Leu	cac His 635	cag Gln	gta Val	gac Asp	atc Ile	ccc Pro 640	1920
atg Met	gag Glu	aat Asn	ggc Gly	gtg Val 645	ggc Gly	ggc Gly	aac Asn	ggc Gly	atc Ile 650	ttc Phe	ctg Leu	gtg Val	gcc Ala	cca Pro 655	ctc Leu	1968
atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	2016

377

Ile	Ile	Tyr	His 660	Val	Ile	Asp	Ser	Asn 665	Ser	Pro	Leu	Tyr	Asp 670	Leu	Ala		
cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg		2064
Pro	Ser	Asp 675	Leu	His	His	His	Gln 680	Asp	Leu	Glu	Ile	Ile 685	Val	Ile	Leu		
gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc		2112
Glu	Gly 690	Val	Val	Glu	Thr	Thr 695	Gly	Ile	Thr	Thr	Gln 700	Ala	Arg	Thr	Ser		
tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg		2160
Tyr	Leu	Ala	Asp	Glu	Ile 710	Leu	Trp	Gly	Gln 715	Arg	Phe	Val	Pro	Ile	Val 720		
gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggt	aac		2208
Ala	Glu	Glu	Asp	Gly 725	Arg	Tyr	Ser	Val	Asp 730	Tyr	Ser	Lys	Phe	Gly 735	Asn		
acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag		2256
Thr	Ile	Lys	Val 740	Pro	Thr	Pro	Leu	Cys 745	Thr	Ala	Arg	Gln	Leu 750	Asp	Glu		
gac	cgc	agt															2265
Asp	Arg	Ser 755															

<210> 132
 <211> 755
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 132

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

Ala Ile Ala Leu Asp Arg Tyr Trp Ala Ile Thr Asp Pro Ile Asp Tyr
 130 135 140
 Val Asn Lys Arg Thr Pro Arg Arg Ala Ala Ala Leu Ile Ser Leu Thr
 145 150 155
 Trp Leu Ile Gly Phe Leu Ile Ser Ile Pro Pro Met Leu Gly Trp Arg
 165 170 175
 Thr Pro Glu Asp Arg Ser Asp Pro Asp Ala Cys Thr Ile Ser Lys Asp
 180 185 190
 His Gly Tyr Thr Ile Tyr Ser Thr Phe Gly Ala Phe Tyr Ile Pro Leu
 195 200 205
 Leu Leu Met Leu Val Leu Tyr Gly Arg Ile Phe Arg Ala Ala Arg Phe
 210 215 220
 Arg Ile Arg Lys Thr Val Lys Lys Val Glu Lys Thr Gly Ala Asp Thr
 225 230 235 240
 Arg His Gly Ala Ser Pro Ala Pro Gln Pro Lys Lys Ser Val Asn Gly
 245 250 255
 Glu Ser Gly Ser Arg Asn Trp Arg Leu Gly Val Glu Ser Lys Ala Gly
 260 265 270
 Gly Ala Leu Cys Ala Asn Gly Ala Val Arg Gln Gly Asp Asp Gly Ala
 275 280 285
 Ala Leu Glu Val Ile Glu Val His Arg Val Gly Asn Ser Lys Glu His
 290 295 300
 Leu Pro Leu Pro Ser Glu Ala Gly Pro Thr Pro Cys Ala Pro Ala Ser
 305 310 315 320
 Phe Glu Arg Lys Asn Glu Arg Asn Ala Glu Ala Lys Arg Lys Met Ala
 325 330 335
 Leu Ala Arg Glu Arg Lys Thr Val Lys Thr Leu Gly Ile Ile Met Gly
 340 345 350
 Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365
 Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400

Ala Tyr Phe Asn Lys₄₀₅ Asp Phe Gln Asn₃₇₉ Ala₄₁₀ Phe Lys Lys Ile Ile₄₁₅ Lys
 Cys Lys Phe Cys₄₂₀ Arg Gln Gly Ala Thr₄₂₅ Arg Tyr Arg Thr Arg₄₃₀ Glu Arg
 Arg Ala Arg₄₃₅ Phe Val Ser Lys Lys₄₄₀ Gly Asn Cys Asn Val₄₄₅ Ala His Lys
 Asn Ile₄₅₀ Arg Glu Gln Gly Arg₄₅₅ Phe Leu Gln Asp Val₄₆₀ Phe Thr Thr Leu
 Val₄₆₅ Asp Leu Lys Trp Pro₄₇₀ His Thr Leu Leu Ile₄₇₅ Phe Thr Met Ser Phe₄₈₀
 Leu Cys Ser Trp Leu₄₈₅ Leu Phe Ala Met Val₄₉₀ Trp Trp Leu Ile Ala₄₉₅ Phe
 Ala His Gly Asp₅₀₀ Leu Ala Pro Gly Glu₅₀₅ Gly Thr Asn Val₅₁₀ Pro Cys Val
 Thr Ser Ile₅₁₅ His Ser Phe Ser Ser₅₂₀ Ala Phe Leu Phe Ser₅₂₅ Ile Glu Val
 Gln Val₅₃₀ Thr Ile Gly Phe Gly₅₃₅ Gly Arg Met Val Thr₅₄₀ Glu Glu Cys Pro
 Leu₅₄₅ Ala Ile Leu Ile Leu₅₅₀ Ile Val Gln Asn Ile₅₅₅ Val Gly Leu Met Ile₅₆₀
 Asn Ala Ile Met Leu₅₆₅ Gly Cys Ile Phe Met₅₇₀ Lys Thr Ala Gln Ala₅₇₅ His
 Arg Arg Ala Glu₅₈₀ Thr Leu Ile Phe Ser₅₈₅ Lys His Ala Val Ile₅₉₀ Thr Leu
 Arg His Gly₅₉₅ Arg Leu Cys Phe Met₆₀₀ Leu Arg Val Gly Asp₆₀₅ Leu Arg Lys
 Ser Met₆₁₀ Ile Ile Ser Ala Thr₆₁₅ Ile His Met Gln Val₆₂₀ Val Arg Lys Thr
 Thr₆₂₅ Ser Pro Glu Gly Glu₆₃₀ Val Val Pro Leu His₆₃₅ Gln Val Asp Ile Pro₆₄₀
 Met Glu Asn Gly Val₆₄₅ Gly Gly Asn Gly Ile₆₅₀ Phe Leu Val Ala Pro₆₅₅ Leu
 Ile Ile Tyr His₆₆₀ Val Ile Asp Ser Asn₆₆₅ Ser Pro Leu Tyr Asp₆₇₀ Leu Ala
 Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu

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Met	Asp	Val	Leu	Ser	Pro	Gly	Gln	Gly	Asn	Asn	Thr	Thr	Ser	Pro	Pro	
1				5					10					15		
gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc																96
Ala	Pro	Phe	Glu	Thr	Gly	Gly	Asn	Thr	Thr	Gly	Ile	Ser	Asp	Val	Thr	
			20					25					30			
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc																144
Val	Ser	Tyr	Gln	Val	Ile	Thr	Ser	Leu	Leu	Leu	Gly	Thr	Leu	Ile	Phe	
		35					40					45				
tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag																192
Cys	Ala	Val	Leu	Gly	Asn	Ala	Cys	Val	Val	Ala	Ala	Ile	Ala	Leu	Glu	
	50					55				60						
cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc																240
Arg	Ser	Leu	Gln	Asn	Val	Ala	Asn	Tyr	Leu	Ile	Gly	Ser	Leu	Ala	Val	
65					70					75					80	
acc gac ctc atg gtg tcg gtg ttg gtg ctg ccc atg gcc gcg ctg tat																288
Thr	Asp	Leu	Met	Val	Ser	Val	Leu	Val	Leu	Pro	Met	Ala	Ala	Leu	Tyr	
				85				90						95		
cag gtg ctc aac aag tgg aca ctg ggc cag gta acc tgc gac ctg ttc																336
Gln	Val	Leu	Asn	Lys	Trp	Thr	Leu	Gly	Gln	Val	Thr	Cys	Asp	Leu	Phe	
			100					105					110			
atc gcc ctc gac gtg ctg tgc tgc acc tca tcc atc ttg cac ctg tgc																384
Ile	Ala	Leu	Asp	Val	Leu	Cys	Cys	Thr	Ser	Ser	Ile	Leu	His	Leu	Cys	
		115					120					125				

381																432
gcc Ala	atc Ile 130	gcg Ala	ctg Leu	gac Asp	agg Arg	tac Tyr 135	tgg Trp	gcc Ala	atc Ile	acg Thr	gac Asp 140	ccc Pro	atc Ile	gac Asp	tac Tyr	
gtg Val 145	aac Asn	aag Lys	agg Arg	acg Thr	ccc Pro 150	cgg Arg	cgc Arg	gcc Ala	gct Ala	gcg Ala 155	ctc Leu	atc Ile	tcg Ser	ctc Leu	act Thr 160	480
tgg Trp	ctt Leu	att Ile	ggc Gly	ttc Phe 165	ctc Leu	atc Ile	tct Ser	atc Ile	ccg Pro 170	ccc Pro	atg Met	ctg Leu	ggc Gly	tgg Trp 175	cgc Arg	528
acc Thr	ccg Pro	gaa Glu	gac Asp 180	cgc Arg	tcg Ser	gac Asp	ccc Pro	gac Asp 185	gca Ala	tgc Cys	acc Thr	att Ile	agc Ser 190	aag Lys	gat Asp	576
cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser	acc Thr 200	ttt Phe	gga Gly	gct Ala	ttc Phe	tac Tyr 205	atc Ile	ccg Pro	ctg Leu	624
ctg Leu	ctc Leu 210	atg Met	ctg Leu	gtt Val	ctc Leu	tat Tyr 215	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe	672
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240	720
cgc Arg	cat His	gga Gly	gca Ala	tct Ser 245	ccc Pro	gcc Ala	ccg Pro	cag Gln	ccc Pro 250	aag Lys	aag Lys	agt Ser	gtg Val	aat Asn 255	gga Gly	768
gag Glu	tcg Ser	ggg Gly	agc Ser 260	agg Arg	aac Asn	tgg Trp	agg Arg	ctg Leu 265	ggc Gly	gtg Val	gag Glu	agc Ser	aag Lys 270	gct Ala	ggg Gly	816
ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
gcc Ala	ctg Leu 290	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His	912
ttg Leu 305	cct Pro	ctg Leu	ccc Pro	agc Ser	gag Glu 310	gct Ala	ggt Gly	cct Pro	acc Thr	cct Pro 315	tgt Cys	gcc Ala	ccc Pro	gcc Ala	tct Ser 320	960
ttc Phe	gag Glu	agg Arg	aaa Lys	aat Asn 325	gag Glu	cgc Arg	aac Asn	gcc Ala	gag Glu 330	gcg Ala	aag Lys	cgc Arg	aag Lys	atg Met 335	gcc Ala	1008
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
gca	tac	ttc	aac	aag	gac	ttt	caa	aac	gcg	ttt	aag	aag	atc	att	aag	1248

Ala	Tyr	Phe	Asn	Lys 405	Asp	Phe	Gln	Asn	382 Ala 410	Phe	Lys	Lys	Ile	Ile 415	Lys	
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	agg Arg	agg Arg	gcc Ala 425	cgc Arg	ttc Phe	gtg Val	tcc Ser 430	aag Lys	aaa Lys	ggc Gly	1296
aac Asn	tgc Cys	aac Asn 435	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 440	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 445	cgc Arg	ttc Phe	ctg Leu	1344
cag Gln	gat Asp 450	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 455	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 460	cca Pro	cac His	act Thr	ctg Leu	1392
ctc Leu 465	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 470	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 475	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 480	1440
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 485	gcc Ala	ttc Phe	gcc Ala	cac His	ggc Gly 490	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 495	atg Met	1488
gag Glu	aaa Lys	ggc Gly	atc Ile 500	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 505	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 510	cca Pro	gat Asp	1536
tac Tyr	gcc Ala	gga Gly 515	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 520	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 525	atc Ile	cac His	tcc Ser	1584
ttt Phe	tca Ser 530	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 535	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 540	gtg Val	acc Thr	att Ile	ggc Gly	1632
ttc Phe 545	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 550	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 555	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 560	1680
ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 565	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 570	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 575	ctg Leu	1728
ggc Gly	tgc Cys	atc Ile	ttc Phe 580	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 585	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 590	gaa Glu	acc Thr	1776
ctc Leu	atc Ile	ttc Phe 595	agc Ser	aag Lys	cat His	gct Ala	gtg Val 600	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 605	ggc Gly	cgc Arg	ctg Leu	1824
tgc Cys	ttc Phe 610	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 615	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 620	atg Met	atc Ile	att Ile	agc Ser	1872
gcc Ala 625	acc Thr	atc Ile	cac His	atg Met	cag Gln 630	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 635	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 640	1920
gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 645	cac His	cag Gln	gta Val	gac Asp	atc Ile 650	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 655	gtg Val	1968
ggc Gly	ggc Gly	aac Asn	ggc Gly 660	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 665	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 670	cac His	gtc Val	2016
atc Ile	gac Asp	tcc Ser	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser	gac Asp	ctg Leu	cac His	2064

675					680					383					685					
cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	2112				
His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu					
	690					695					700									
acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	2160				
Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu					
705					710					715					720					
att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	2208				
Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly					
				725					730					735						
cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggc	aac	acc	att	aaa	gtg	ccc	2256				
Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro					
			740					745					750							
aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	2304				
Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu					
		755					760					765								
gat	gcc	ctg	acc	ctc	gcc	tgc	tgc	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	2352				
Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser					
	770					775					780									
gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	2400				
Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser					
785					790					795					800					
ttg	tcc															2406				
Leu	Ser																			

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 <213> Artificial sequence

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<400> 134

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Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
65 70 75 80

Thr Asp Leu Met Val Ser Val Leu Val Leu Pro Met Ala Ala Leu Tyr
85 90 95

384

Gln Val Leu Asn₁₀₀ Lys Trp Thr Leu Gly₁₀₅ Gln Val Thr Cys Asp₁₁₀ Leu Phe

Ile Ala Leu₁₁₅ Asp Val Leu Cys Cys₁₂₀ Thr Ser Ser Ile Leu₁₂₅ His Leu Cys

Ala Ile₁₃₀ Ala Leu Asp Arg Tyr₁₃₅ Trp Ala Ile Thr Asp₁₄₀ Pro Ile Asp Tyr

Val₁₄₅ Asn Lys Arg Thr Pro₁₅₀ Arg Arg Ala Ala₁₅₅ Leu Ile Ser Leu Thr₁₆₀

Trp Leu Ile Gly Phe₁₆₅ Leu Ile Ser Ile Pro₁₇₀ Pro Met Leu Gly Trp₁₇₅ Arg

Thr Pro Glu Asp₁₈₀ Arg Ser Asp Pro Asp₁₈₅ Ala Cys Thr Ile Ser₁₉₀ Lys Asp

His Gly Tyr₁₉₅ Thr Ile Tyr Ser Thr₂₀₀ Phe Gly Ala Phe Tyr₂₀₅ Ile Pro Leu

Leu Leu₂₁₀ Met Leu Val Leu Tyr₂₁₅ Gly Arg Ile Phe Arg₂₂₀ Ala Ala Arg Phe

Arg₂₂₅ Ile Arg Lys Thr Val₂₃₀ Lys Lys Val Glu Lys₂₃₅ Thr Gly Ala Asp Thr₂₄₀

Arg His Gly Ala Ser₂₄₅ Pro Ala Pro Gln Pro₂₅₀ Lys Lys Ser Val Asn₂₅₅ Gly

Glu Ser Gly Ser₂₆₀ Arg Asn Trp Arg Leu₂₆₅ Gly Val Glu Ser Lys₂₇₀ Ala Gly

Gly Ala Leu₂₇₅ Cys Ala Asn Gly Ala₂₈₀ Val Arg Gln Gly Asp₂₈₅ Asp Gly Ala

Ala Leu₂₉₀ Glu Val Ile Glu Val₂₉₅ His Arg Val Gly Asn₃₀₀ Ser Lys Glu His

Leu₃₀₅ Pro Leu Pro Ser Glu₃₁₀ Ala Gly Pro Thr Pro₃₁₅ Cys Ala Pro Ala Ser₃₂₀

Phe Glu Arg Lys Asn₃₂₅ Glu Arg Asn Ala Glu₃₃₀ Ala Lys Arg Lys Met₃₃₅ Ala

Leu Ala Arg Glu₃₄₀ Arg Lys Thr Val Lys₃₄₅ Thr Leu Gly Ile Ile₃₅₀ Met Gly

Thr Phe Ile₃₅₅ Leu Cys Trp Leu Pro₃₆₀ Phe Phe Ile Val Ala₃₆₅ Leu Val Leu

Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile

370 375 385 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400
 Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415
 Cys Lys Phe Cys Arg Gln Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 420 425 430
 Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 435 440 445
 Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 450 455 460
 Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 465 470 475 480
 Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met
 485 490 495
 Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp
 500 505 510
 Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser
 515 520 525
 Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly
 530 535 540
 Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile
 545 550 555 560
 Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu
 565 570 575
 Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr
 580 585 590
 Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu
 595 600 605
 Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser
 610 615 620
 Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly
 625 630 635 640
 Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val
 645 650 655

Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val
 660 665 670
 Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His
 675 680 685
 His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu
 690 695 700
 Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu
 705 710 715 720
 Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly
 725 730 735
 Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro
 740 745 750
 Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu
 755 760 765
 Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser
 770 775 780
 Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser
 785 790 795 800
 Leu Ser

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 <211> 2298
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 <213> Artificial sequence

<220>
 <223> hybrid sequence

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gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
35 40 45	
tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag	192

387															
Cys	Ala 50	Val	Leu	Gly	Asn	Ala 55	Cys	Val	Val	Ala	Ala 60	Ile	Ala	Leu	Glu
cgc Arg 65	tcc Ser	ctg Leu	cag Gln	aac Asn	gtg Val 70	gcc Ala	aat Asn	tat Tyr	ctt Leu	att Ile 75	ggc Gly	tct Ser	ttg Leu	gcg Ala	gtc Val 80
acc Thr	gac Asp	ctc Leu	atg Met	gtg Val 85	tcg Ser	gtg Val	ttg Leu	gtg Val	ctg Leu 90	ccc Pro	atg Met	gcc Ala	gcg Ala	ctg Leu 95	tat Tyr
cag Gln	gtg Val	ctc Leu	aac Asn 100	aag Lys	tgg Trp	aca Thr	ctg Leu	ggc Gly 105	cag Gln	gta Val	acc Thr	tgc Cys	gac Asp 110	ctg Leu	ttc Phe
atc Ile	gcc Ala	ctc Leu 115	gac Asp	gtg Val	ctg Leu	tgc Cys	tgc Cys 120	acc Thr	tca Ser	tcc Ser	atc Ile	ttg Leu 125	cac His	ctg Leu	tgc Cys
gcc Ala	atc Ile 130	gcg Ala	ctg Leu	gac Asp	agg Arg	tac Tyr 135	tgg Trp	gcc Ala	atc Ile	acg Thr	gac Asp 140	ccc Pro	atc Ile	gac Asp	tac Tyr
gtg Val 145	aac Asn	aag Lys	agg Arg	acg Thr	ccc Pro 150	cgg Arg	cgc Arg	gcc Ala	gct Ala	gcg Ala 155	ctc Leu	atc Ile	tcg Ser	ctc Leu	act Thr 160
tgg Trp	ctt Leu	att Ile	ggc Gly	ttc Phe 165	ctc Leu	atc Ile	tct Ser	atc Ile	ccg Pro 170	ccc Pro	atg Met	ctg Leu	ggc Gly	tgg Trp 175	cgc Arg
acc Thr	ccg Pro	gaa Glu	gac Asp 180	cgc Arg	tcg Ser	gac Asp	ccc Pro	gac Asp 185	gca Ala	tgc Cys	acc Thr	att Ile	agc Ser 190	aag Lys	gat Asp
cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser	acc Thr 200	ttt Phe	gga Gly	gct Ala	ttc Phe	tac Tyr 205	atc Ile	ccg Pro	ctg Leu
ctg Leu	ctc Leu 210	atg Met	ctg Leu	gtt Val	ctc Leu	tat Tyr 215	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240
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gcc Ala	ctg Leu 290	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His
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388																
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ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys	1248
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	agg Arg	agg Arg	gcc Ala 425	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 430	aaa Lys	ggc Gly	1296
aac Asn	tgc Cys	aac Asn 435	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 440	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 445	cgc Arg	ttc Phe	ctg Leu	1344
cag Gln	gat Asp 450	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 455	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 460	cca Pro	cac His	act Thr	ctg Leu	1392
ctc Leu 465	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 470	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 475	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 480	1440
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 485	gcc Ala	ttc Phe	gcc Ala	cac His	ggg Gly 490	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 495	atg Met	1488
gag Glu	aaa Lys	ggc Gly	atc Ile 500	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 505	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 510	cca Pro	gat Asp	1536
tac Tyr	gcc Ala	gga Gly 515	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 520	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 525	atc Ile	cac His	tcc Ser	1584
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ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 565	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 570	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 575	ctg Leu	1728
ggc Gly	tgc Cys	atc Ile	ttc Phe 580	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 585	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 590	gaa Glu	acc Thr	1776
ctc Leu	atc Ile	ttc Phe 595	agc Ser	aag Lys	cat His	gct Ala	gtg Val 600	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 605	ggc Gly	cgc Arg	ctg Leu	1824

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Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	
610						615					620					
gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	1920
Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	
625					630					635					640	
gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	1968
Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	
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ggg	ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	2016
Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	
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atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	2064
Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	
		675					680					685				
cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	2112
His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	
	690					695					700					
acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	2160
Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	
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att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	2208
Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	
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cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	2256
Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	
			740					745					750			
aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt			2298
Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser			
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<210> 136
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 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 136

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

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val

65					70					390 75				80
Thr	Asp	Leu	Met	Val ₈₅	Ser	Val	Leu	Val	Leu ₉₀	Pro	Met	Ala	Ala	Leu ₉₅ Tyr
Gln	Val	Leu	Asn ₁₀₀	Lys	Trp	Thr	Leu	Gly ₁₀₅	Gln	Val	Thr	Cys	Asp ₁₁₀	Leu Phe
Ile	Ala	Leu ₁₁₅	Asp	Val	Leu	Cys	Cys ₁₂₀	Thr	Ser	Ser	Ile	Leu ₁₂₅	His	Leu Cys
Ala	Ile ₁₃₀	Ala	Leu	Asp	Arg	Tyr ₁₃₅	Trp	Ala	Ile	Thr	Asp ₁₄₀	Pro	Ile	Asp Tyr
Val ₁₄₅	Asn	Lys	Arg	Thr	Pro ₁₅₀	Arg	Arg	Ala	Ala	Ala ₁₅₅	Leu	Ile	Ser	Leu Thr ₁₆₀
Trp	Leu	Ile	Gly	Phe ₁₆₅	Leu	Ile	Ser	Ile	Pro ₁₇₀	Pro	Met	Leu	Gly	Trp ₁₇₅ Arg
Thr	Pro	Glu	Asp ₁₈₀	Arg	Ser	Asp	Pro	Asp ₁₈₅	Ala	Cys	Thr	Ile	Ser ₁₉₀	Lys Asp
His	Gly	Tyr ₁₉₅	Thr	Ile	Tyr	Ser	Thr ₂₀₀	Phe	Gly	Ala	Phe	Tyr ₂₀₅	Ile	Pro Leu
Leu	Leu ₂₁₀	Met	Leu	Val	Leu	Tyr ₂₁₅	Gly	Arg	Ile	Phe	Arg ₂₂₀	Ala	Ala	Arg Phe
Arg ₂₂₅	Ile	Arg	Lys	Thr	Val ₂₃₀	Lys	Lys	Val	Glu	Lys ₂₃₅	Thr	Gly	Ala	Asp Thr ₂₄₀
Arg	His	Gly	Ala	Ser ₂₄₅	Pro	Ala	Pro	Gln	Pro ₂₅₀	Lys	Lys	Ser	Val	Asn Gly ₂₅₅
Glu	Ser	Gly	Ser ₂₆₀	Arg	Asn	Trp	Arg	Leu ₂₆₅	Gly	Val	Glu	Ser	Lys ₂₇₀	Ala Gly
Gly	Ala	Leu ₂₇₅	Cys	Ala	Asn	Gly	Ala ₂₈₀	Val	Arg	Gln	Gly	Asp ₂₈₅	Asp	Gly Ala
Ala	Leu ₂₉₀	Glu	Val	Ile	Glu	Val ₂₉₅	His	Arg	Val	Gly	Asn ₃₀₀	Ser	Lys	Glu His
Leu	Pro	Leu	Pro	Ser	Glu ₃₁₀	Ala	Gly	Pro	Thr	Pro ₃₁₅	Cys	Ala	Pro	Ala Ser ₃₂₀
Phe	Glu	Arg	Lys	Asn ₃₂₅	Glu	Arg	Asn	Ala	Glu ₃₃₀	Ala	Lys	Arg	Lys	Met ₃₃₅ Ala
Leu	Ala	Arg	Glu ₃₄₀	Arg	Lys	Thr	Val	Lys ₃₄₅	Thr	Leu	Gly	Ile	Ile ₃₅₀	Met Gly

Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365
 Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400
 Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415
 Cys Lys Phe Cys Arg Gln Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 420 425 430
 Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 435 440 445
 Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 450 455 460
 Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 465 470 475 480
 Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met
 485 490 495
 Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp
 500 505 510
 Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser
 515 520 525
 Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly
 530 535 540
 Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile
 545 550 555 560
 Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu
 565 570 575
 Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr
 580 585 590
 Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu
 595 600 605
 Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser
 610 615 620

Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly
625 630 635 640

Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val
645 650 655

Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val
660 665 670

Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His
675 680 685

His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu
690 695 700

Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu
705 710 715 720

Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly
725 730 735

Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro
740 745 750

Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
755 760 765

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<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

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<221> CDS
<222> (1)..(2346)

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gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
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tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag	192
Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu	
50 55 60	
cgc tcc ctg cag aac gtg gcc aat tat ctt att ggc tct ttg gcg gtc	240
Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val	

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cag Gln	gtg Val	ctc Leu	aac Asn 100	aag Lys	tgg Trp	aca Thr	ctg Leu	ggc Gly 105	cag Gln	gta Val	acc Thr	tgc Cys	gac Asp 110	ctg Leu	ttc Phe	336
atc Ile	gcc Ala	ctc Leu 115	gac Asp	gtg Val	ctg Leu	tgc Cys	tgc Cys 120	acc Thr	tca Ser	tcc Ser	atc Ile	ttg Leu 125	cac His	ctg Leu	tgc Cys	384
gcc Ala	atc Ile 130	gcg Ala	ctg Leu	gac Asp	agg Arg	tac Tyr 135	tgg Trp	gcc Ala	atc Ile	acg Thr	gac Asp 140	ccc Pro	atc Ile	gac Asp	tac Tyr	432
gtg Val 145	aac Asn	aag Lys	agg Arg	acg Thr	ccc Pro 150	cgg Arg	cgc Arg	gcc Ala	gct Ala	gcg Ala 155	ctc Leu	atc Ile	tcg Ser	ctc Leu	act Thr 160	480
tgg Trp	ctt Leu	att Ile	ggc Gly	ttc Phe 165	ctc Leu	atc Ile	tct Ser	atc Ile	ccg Pro 170	ccc Pro	atg Met	ctg Leu	ggc Gly	tgg Trp 175	cgc Arg	528
acc Thr	ccg Pro	gaa Glu	gac Asp 180	cgc Arg	tcg Ser	gac Asp	ccc Pro	gac Asp 185	gca Ala	tgc Cys	acc Thr	att Ile	agc Ser 190	aag Lys	gat Asp	576
cat His	ggc Gly	tac Tyr 195	act Thr	atc Ile	tat Tyr	tcc Ser	acc Thr 200	ttt Phe	gga Gly	gct Ala	ttc Phe	tac Tyr 205	atc Ile	ccg Pro	ctg Leu	624
ctg Leu 210	ctc Leu	atg Met	ctg Leu	gtt Val	ctc Leu	tat Tyr 215	ggg Gly	cgc Arg	ata Ile	ttc Phe	cga Arg 220	gct Ala	gcg Ala	cgc Arg	ttc Phe	672
cgc Arg 225	atc Ile	cgc Arg	aag Lys	acg Thr	gtc Val 230	aaa Lys	aag Lys	gtg Val	gag Glu	aag Lys 235	acc Thr	gga Gly	gcg Ala	gac Asp	acc Thr 240	720
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ggt Gly	gct Ala	ctg Leu 275	tgc Cys	gcc Ala	aat Asn	ggc Gly	gcg Ala 280	gtg Val	agg Arg	caa Gln	ggt Gly	gac Asp 285	gat Asp	ggc Gly	gcc Ala	864
gcc Ala 290	ctg Leu	gag Glu	gtg Val	atc Ile	gag Glu	gtg Val 295	cac His	cga Arg	gtg Val	ggc Gly	aac Asn 300	tcc Ser	aaa Lys	gag Glu	cac His	912
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ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056

acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	tgg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
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aac Asn	tgc Cys	aac Asn 435	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 440	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 445	cgc Arg	ttc Phe	ctg Leu	1344
cag Gln	gat Asp 450	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 455	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 460	cca Pro	cac His	act Thr	ctg Leu	1392
ctc Leu 465	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 470	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 475	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 480	1440
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 485	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 490	gac Asp	ctg Leu	gcc Ala	ccc Pro	gga Gly 495	gag Glu	1488
ggc Gly	acc Thr	aat Asn	gtg Val 500	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 505	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 510	tct Ser	gcc Ala	1536
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atg Met	gtg Val 530	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 535	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 540	ctc Leu	att Ile	gtg Val	cag Gln	1632
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atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 565	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 570	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 575	agc Ser	1728
aag Lys	cat His	gct Ala	gtg Val 580	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 585	ggc Gly	cgc Arg	ctg Leu	tgc Cys	ttc Phe 590	atg Met	ctg Leu	1776
cgc Arg	gta Val	ggg Gly 595	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 600	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 605	acc Thr	atc Ile	cac His	1824
atg Met	cag Gln 610	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 615	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 620	gaa Glu	gtt Val	gtg Val	cct Pro	1872

ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggt	ggt	aac	ggc	1920
Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	
625					630					635					640	
atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	1968
Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	
				645					650					655		
agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	2016
Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	
			660					665					670			
ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	2064
Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	
		675					680					685				
acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	2112
Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	
	690					695					700					
cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	2160
Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	
705					710					715					720	
gac	tac	tcc	aaa	ttt	ggc	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	2208
Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	
				725					730					735		
aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	2256
Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	
			740				745						750			
ctc	gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	2304
Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	
		755					760					765				
aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc			2346
Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser			
	770					775					780					

<210> 138
 <211> 782
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 138

Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro
1 5 10 15

Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr
20 25 30

Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe
35 40 45

Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu
50 55 60

Arg Ser Leu Gln Asn Val Ala Asn Tyr Leu Ile Gly Ser Leu Ala Val
65 70 75 80

Thr Asp Leu Met Val₈₅ Ser Val Leu Val₉₀ Leu Pro Met Ala Ala Leu Tyr
 Gln Val Leu Asn₁₀₀ Lys Trp Thr Leu Gly₁₀₅ Gln Val Thr Cys₁₁₀ Asp Leu Phe
 Ile Ala Leu₁₁₅ Asp Val Leu Cys₁₂₀ Cys Thr Ser Ser Ile Leu₁₂₅ His Leu Cys
 Ala Ile₁₃₀ Ala Leu Asp Arg Tyr₁₃₅ Trp Ala Ile Thr Asp₁₄₀ Pro Ile Asp Tyr
 Val₁₄₅ Asn Lys Arg Thr₁₅₀ Arg Arg Ala Ala₁₅₅ Leu Ile Ser Leu Thr₁₆₀
 Trp Leu Ile Gly₁₆₅ Phe Leu Ile Ser Ile₁₇₀ Pro Pro Met Leu Gly₁₇₅ Trp Arg
 Thr Pro Glu₁₈₀ Asp Arg Ser Asp Pro₁₈₅ Asp Ala Cys Thr Ile Ser₁₉₀ Lys Asp
 His Gly Tyr₁₉₅ Thr Ile Tyr Ser Thr₂₀₀ Phe Gly Ala Phe Tyr₂₀₅ Ile Pro Leu
 Leu Leu₂₁₀ Met Leu Val Leu Tyr₂₁₅ Gly Arg Ile Phe Arg₂₂₀ Ala Ala Arg Phe
 Arg₂₂₅ Ile Arg Lys Thr Val₂₃₀ Lys Lys Val Glu Lys₂₃₅ Thr Gly Ala Asp Thr₂₄₀
 Arg His Gly Ala Ser₂₄₅ Pro Ala Pro Gln Pro₂₅₀ Lys Lys Ser Val Asn₂₅₅ Gly
 Glu Ser Gly₂₆₀ Ser Arg Asn Trp Arg Leu₂₆₅ Gly Val Glu Ser Lys₂₇₀ Ala Gly
 Gly Ala Leu₂₇₅ Cys Ala Asn Gly Ala₂₈₀ Val Arg Gln Gly Asp₂₈₅ Asp Gly Ala
 Ala Leu₂₉₀ Glu Val Ile Glu Val₂₉₅ His Arg Val Gly Asn₃₀₀ Ser Lys Glu His
 Leu₃₀₅ Pro Leu Pro Ser Glu₃₁₀ Ala Gly Pro Thr Pro₃₁₅ Cys Ala Pro Ala Ser₃₂₀
 Phe Glu Arg Lys Asn₃₂₅ Glu Arg Asn Ala Glu₃₃₀ Ala Lys Arg Lys Met₃₃₅ Ala
 Leu Ala Arg Glu₃₄₀ Arg Lys Thr Val Lys₃₄₅ Thr Leu Gly Ile Ile₃₅₀ Met Gly

Thr Phe Ile Leu Cys Trp Leu Pro Phe Phe Ile Val Ala Leu Val Leu
 355 360 365
 Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380
 Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400
 Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415
 Cys Lys Phe Cys Arg Gln Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 420 425 430
 Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 435 440 445
 Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 450 455 460
 Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 465 470 475 480
 Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu
 485 490 495
 Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala
 500 505 510
 Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg
 515 520 525
 Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln
 530 535 540
 Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe
 545 550 555 560
 Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser
 565 570 575
 Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu
 580 585 590
 Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His
 595 600 605
 Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
 610 615 620

Leu His Gln Val Asp Ile Pro Met Glu Asn³⁹⁸ Gly Val Gly Gly Asn Gly
 625 630 635 640
 Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn
 645 650 655
 Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp
 660 665 670
 Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile
 675 680 685
 Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly
 690 695 700
 Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val
 705 710 715 720
 Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys
 725 730 735
 Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr
 740 745 750
 Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala
 755 760 765
 Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
 770 775 780

<210> 139
 <211> 2238
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2238)

<400> 139	
atg gat gtg ctc agc cct ggt cag ggc aac aac acc aca tca cca ccg	48
Met Asp Val Leu Ser Pro Gly Gln Gly Asn Asn Thr Thr Ser Pro Pro	
1 5 10 15	
gct ccc ttt gag acc ggc ggc aac act act ggt atc tcc gac gtg acc	96
Ala Pro Phe Glu Thr Gly Gly Asn Thr Thr Gly Ile Ser Asp Val Thr	
20 25 30	
gtc agc tac caa gtg atc acc tct ctg ctg ctg ggc acg ctc atc ttc	144
Val Ser Tyr Gln Val Ile Thr Ser Leu Leu Leu Gly Thr Leu Ile Phe	
35 40 45	
tgc gcg gtg ctg ggc aat gcg tgc gtg gtg gct gcc atc gcc ttg gag	192
Cys Ala Val Leu Gly Asn Ala Cys Val Val Ala Ala Ile Ala Leu Glu	
50 55 60	

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

400																
ctg Leu	gcc Ala	cga Arg	gag Glu 340	agg Arg	aag Lys	aca Thr	gtg Val	aag Lys 345	acg Thr	ctg Leu	ggc Gly	atc Ile	atc Ile 350	atg Met	ggc Gly	1056
acc Thr	ttc Phe	atc Ile 355	ctc Leu	tgc Cys	tgg Trp	ctg Leu	ccc Pro 360	ttc Phe	ttc Phe	atc Ile	gtg Val	gct Ala 365	ctt Leu	gtt Val	ctg Leu	1104
ccc Pro	ttc Phe 370	tgc Cys	gag Glu	agc Ser	agc Ser	tgc Cys 375	cac His	atg Met	ccc Pro	acc Thr	ctg Leu 380	ttg Leu	ggc Gly	gcc Ala	ata Ile	1152
atc Ile 385	aat Asn	tgg Trp	ctg Leu	ggc Gly	tac Tyr 390	tcc Ser	aac Asn	tct Ser	ctg Leu	ctt Leu 395	aac Asn	ccc Pro	gtc Val	att Ile	tac Tyr 400	1200
gca Ala	tac Tyr	ttc Phe	aac Asn	aag Lys 405	gac Asp	ttt Phe	caa Gln	aac Asn	gcg Ala 410	ttt Phe	aag Lys	aag Lys	atc Ile	att Ile 415	aag Lys	1248
tgt Cys	aag Lys	ttc Phe	tgc Cys 420	cgc Arg	cag Gln	agg Arg	agg Arg	gcc Ala 425	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 430	aaa Lys	ggc Gly	1296
aac Asn	tgc Cys	aac Asn 435	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 440	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 445	cgc Arg	ttc Phe	ctg Leu	1344
cag Gln	gat Asp 450	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 455	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 460	cca Pro	cac His	act Thr	ctg Leu	1392
ctc Leu 465	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 470	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 475	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 480	1440
gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 485	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 490	gac Asp	ctg Leu	gcc Ala	ccc Pro	gga Gly 495	gag Glu	1488
ggc Gly	acc Thr	aat Asn	gtg Val 500	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 505	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 510	tct Ser	gcc Ala	1536
ttc Phe	ctt Leu	ttc Phe 515	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 520	gtg Val	acc Thr	att Ile	ggt Gly	ttc Phe 525	ggc Gly	ggg Gly	cgc Arg	1584
atg Met	gtg Val 530	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 535	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 540	ctc Leu	att Ile	gtg Val	cag Gln	1632
aat Asn 545	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 550	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 555	ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 560	1680
atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 565	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 570	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 575	agc Ser	1728
aag Lys	cat His	gct Ala	gtg Val 580	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 585	ggc Gly	cgc Arg	ctg Leu	tgc Cys	ttc Phe 590	atg Met	ctg Leu	1776
cgc Arg	gta Val	ggg Gly 595	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 600	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 605	acc Thr	atc Ile	cac His	1824
atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	1872

Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	⁴⁰¹ Glu	Gly	Glu	Val	Val	Pro	
610						615					620					
ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	ggg	aac	ggc	1920
Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	
625					630					635					640	
atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	1968
Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	
				645					650					655		
agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	2016
Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	
			660					665					670			
ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	2064
Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	
		675					680					685				
acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	2112
Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	
	690					695					700					
cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	2160
Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	
705					710					715					720	
gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	2208
Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	
				725					730					735		
aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt							2238
Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser							
			740					745								

<210> 140
 <211> 746
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 140

Met	Asp	Val	Leu	Ser	Pro	Gly	Gln	Gly	Asn	Asn	Thr	Thr	Ser	Pro	Pro	
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Ala	Pro	Phe	Glu	Thr	Gly	Gly	Asn	Thr	Thr	Gly	Ile	Ser	Asp	Val	Thr	
			20					25					30			
Val	Ser	Tyr	Gln	Val	Ile	Thr	Ser	Leu	Leu	Leu	Gly	Thr	Leu	Ile	Phe	
		35					40					45				
Cys	Ala	Val	Leu	Gly	Asn	Ala	Cys	Val	Val	Ala	Ala	Ile	Ala	Leu	Glu	
	50					55					60					
Arg	Ser	Leu	Gln	Asn	Val	Ala	Asn	Tyr	Leu	Ile	Gly	Ser	Leu	Ala	Val	
65					70					75					80	
Thr	Asp	Leu	Met	Val	Ser	Val	Leu	Val	Leu	Pro	Met	Ala	Ala	Leu	Tyr	
				85					90					95		

Gln Val Leu Asn₁₀₀ Lys Trp Thr Leu Gly₁₀₅ Gln Val Thr Cys Asp₁₁₀ Leu Phe
 Ile Ala Leu₁₁₅ Asp Val Leu Cys Cys₁₂₀ Thr Ser Ser Ile Leu₁₂₅ His Leu Cys
 Ala Ile₁₃₀ Ala Leu Asp Arg Tyr₁₃₅ Trp Ala Ile Thr Asp₁₄₀ Pro Ile Asp Tyr
 Val₁₄₅ Asn Lys Arg Thr Pro₁₅₀ Arg Arg Ala Ala₁₅₅ Leu Ile Ser Leu Thr₁₆₀
 Trp Leu Ile Gly Phe₁₆₅ Leu Ile Ser Ile Pro₁₇₀ Pro Met Leu Gly₁₇₅ Trp Arg
 Thr Pro Glu Asp₁₈₀ Arg Ser Asp Pro Asp₁₈₅ Ala Cys Thr Ile Ser₁₉₀ Lys Asp
 His Gly Tyr₁₉₅ Thr Ile Tyr Ser Thr₂₀₀ Phe Gly Ala Phe Tyr₂₀₅ Ile Pro Leu
 Leu₂₁₀ Met Leu Val Leu Tyr₂₁₅ Gly Arg Ile Phe Arg₂₂₀ Ala Ala Arg Phe
 Arg₂₂₅ Ile Arg Lys Thr Val₂₃₀ Lys Lys Val Glu Lys₂₃₅ Thr Gly Ala Asp Thr₂₄₀
 Arg His Gly Ala Ser₂₄₅ Pro Ala Pro Gln Pro₂₅₀ Lys Lys Ser Val Asn₂₅₅ Gly
 Glu Ser Gly Ser₂₆₀ Arg Asn Trp Arg Leu₂₆₅ Gly Val Glu Ser Lys₂₇₀ Ala Gly
 Gly Ala Leu₂₇₅ Cys Ala Asn Gly Ala₂₈₀ Val Arg Gln Gly Asp₂₈₅ Asp Gly Ala
 Ala Leu₂₉₀ Glu Val Ile Glu Val₂₉₅ His Arg Val Gly Asn₃₀₀ Ser Lys Glu His
 Leu₃₀₅ Pro Leu Pro Ser Glu₃₁₀ Ala Gly Pro Thr Pro₃₁₅ Cys Ala Pro Ala Ser₃₂₀
 Phe Glu Arg Lys Asn₃₂₅ Glu Arg Asn Ala Glu₃₃₀ Ala Lys Arg Lys Met₃₃₅ Ala
 Leu Ala Arg Glu₃₄₀ Arg Lys Thr Val Lys₃₄₅ Thr Leu Gly Ile Ile₃₅₀ Met Gly
 Thr Phe Ile₃₅₅ Leu Cys Trp Leu Pro₃₆₀ Phe Phe Ile Val Ala₃₆₅ Leu Val Leu

Pro Phe Cys Glu Ser Ser Cys His Met Pro Thr Leu Leu Gly Ala Ile
 370 375 380

Ile Asn Trp Leu Gly Tyr Ser Asn Ser Leu Leu Asn Pro Val Ile Tyr
 385 390 395 400

Ala Tyr Phe Asn Lys Asp Phe Gln Asn Ala Phe Lys Lys Ile Ile Lys
 405 410 415

Cys Lys Phe Cys Arg Gln Arg Arg Ala Arg Phe Val Ser Lys Lys Gly
 420 425 430

Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu
 435 440 445

Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu
 450 455 460

Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met
 465 470 475 480

Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu
 485 490 495

Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala
 500 505 510

Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg
 515 520 525

Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln
 530 535 540

Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe
 545 550 555 560

Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser
 565 570 575

Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu
 580 585 590

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

Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro
 610 615 620

Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly
 625 630 635 640

Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn

<div> <div>404</div> <div>645</div> <div>650</div> <div>655</div> </div>															
Ser	Pro	Leu	Tyr 660	Asp	Leu	Ala	Pro	Ser 665	Asp	Leu	His	His	His 670	Gln	Asp
Leu	Glu	Ile 675	Ile	Val	Ile	Leu	Glu 680	Gly	Val	Val	Glu	Thr 685	Thr	Gly	Ile
Thr	Thr 690	Gln	Ala	Arg	Thr	Ser 695	Tyr	Leu	Ala	Asp	Glu 700	Ile	Leu	Trp	Gly
Gln 705	Arg	Phe	Val	Pro	Ile 710	Val	Ala	Glu	Glu	Asp 715	Gly	Arg	Tyr	Ser	Val 720
Asp	Tyr	Ser	Lys	Phe 725	Gly	Asn	Thr	Ile	Lys 730	Val	Pro	Thr	Pro	Leu 735	Cys
Thr	Ala	Arg	Gln 740	Leu	Asp	Glu	Asp	Arg 745	Ser						

<210>	141
<211>	2211
<212>	DNA
<213>	Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1) .. (2211)

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ggc Gly	tca Ser	ggg Gly	gac Asp 20	tat Tyr	gac Asp	tcc Ser	atg Met	aag Lys 25	gaa Glu	ccc Pro	tgt Cys	ttc Phe	cgt Arg 30	gaa Glu	gaa Glu	96	
aat Asn	gct Ala	aat Asn 35	ttc Phe	aat Asn	aaa Lys	atc Ile	ttc Phe 40	ctg Leu	ccc Pro	acc Thr	atc Ile	tac Tyr 45	tcc Ser	atc Ile	atc Ile	144	
ttc Phe	tta Leu 50	act Thr	ggc Gly	att Ile	gtg Val	ggc Gly 55	aat Asn	gga Gly	ttg Leu	gtc Val	atc Ile 60	ctg Leu	gtc Val	atg Met	ggg Gly	192	
tac Tyr 65	cag Gln	aag Lys	aaa Lys	ctg Leu	aga Arg 70	agc Ser	atg Met	acg Thr	gac Asp	aag Lys 75	tac Tyr	agg Arg	ctg Leu	cac His	ctg Leu 80	240	
tca Ser	gtg Val	gcc Ala	gac Asp	ctc Leu 85	ctc Leu	ttt Phe	gtc Val	atc Ile	acg Thr 90	ctt Leu	ccc Pro	ttc Phe	tgg Trp	gca Ala 95	gtt Val	288	
gat Asp	gcc Ala	gtg Val	gca Ala 100	aac Asn	tgg Trp	tac Tyr	ttt Phe	ggg Gly 105	aac Asn	ttc Phe	cta Leu	tgc Cys	aag Lys 110	gca Ala	gtc Val	336	

48

96

144

192

240

288

336

405																
cat His	gtc Val	atc Ile 115	tac Tyr	aca Thr	gtc Val	aac Asn	ctc Leu 120	tac Tyr	agc Ser	agt Ser	gtc Val	ctc Leu 125	atc Ile	ctg Leu	gcc Ala	384
ttc Phe	atc Ile 130	agt Ser	ctg Leu	gac Asp	cgc Arg	tac Tyr 135	ctg Leu	gcc Ala	atc Ile	gtc Val	cac His 140	gcc Ala	acc Thr	aac Asn	agt Ser	432
cag Gln 145	agg Arg	cca Pro	agg Arg	aag Lys	ctg Leu 150	ttg Leu	gct Ala	gaa Glu	aag Lys	gtg Val 155	gtc Val	tat Tyr	ggt Val	ggc Gly	gtc Val 160	480
tgg Trp	atc Ile	cct Pro	gcc Ala	ctc Leu 165	ctg Leu	ctg Leu	act Thr	att Ile	ccc Pro 170	gac Asp	ttc Phe	atc Ile	ttt Phe	gcc Ala 175	aac Asn	528
gtc Val	agt Ser	gag Glu	gca Ala 180	gat Asp	gac Asp	aga Arg	tat Tyr	atc Ile 185	tgt Cys	gac Asp	cgc Arg	ttc Phe	tac Tyr 190	ccc Pro	aat Asn	576
gac Asp	ttg Leu	tgg Trp 195	gtg Val	ggt Val	gtg Val	ttc Phe	cag Gln 200	ttt Phe	cag Gln	cac His	atc Ile	atg Met 205	ggt Val	ggc Gly	ctt Leu	624
atc Ile	ctg Leu 210	cct Pro	ggt Gly	att Ile	gtc Val	atc Ile 215	ctg Leu	tcc Ser	tgc Cys	tat Tyr	tgc Cys 220	att Ile	atc Ile	atc Ile	tcc Ser	672
aag Lys 225	ctg Leu	tca Ser	cac His	tcc Ser	aag Lys 230	ggc Gly	cac His	cag Gln	aag Lys	cgc Arg 235	aag Lys	gcc Ala	ctc Leu	aag Lys	acc Thr 240	720
aca Thr	gtc Val	atc Ile	ctc Leu	atc Ile 245	ctg Leu	gct Ala	ttc Phe	ttc Phe	gcc Ala 250	tgt Cys	tgg Trp	ctg Leu	cct Pro	tac Tyr 255	tac Tyr	768
att Ile	ggg Gly	atc Ile	agc Ser 260	atc Ile	gac Asp	tcc Ser	ttc Phe	atc Ile 265	ctc Leu	ctg Leu	gaa Glu	atc Ile	atc Ile 270	aag Lys	caa Gln	816
ggg Gly	tgt Cys	gag Glu 275	ttt Phe	gag Glu	aac Asn	act Thr	gtg Val 280	cac His	aag Lys	tgg Trp	att Ile	tcc Ser 285	atc Ile	acc Thr	gag Glu	864
gcc Ala	cta Leu 290	gct Ala	ttc Phe	ttc Phe	cac His	tgt Cys 295	tgt Cys	ctg Leu	aac Asn	ccc Pro	atc Ile 300	ctc Leu	tat Tyr	gct Ala	ttc Phe	912
ctt Leu 305	gga Gly	gcc Ala	aaa Lys	ttt Phe	aaa Lys 310	acc Thr	tct Ser	gcc Ala	cag Gln	cac His 315	gca Ala	ctc Leu	acc Thr	tct Ser	gtg Val 320	960
agc Ser	aga Arg	ggg Gly	tcc Ser	agc Ser 325	ctc Leu	aag Lys	atc Ile	ctc Leu	tcc Ser 330	aaa Lys	gga Gly	aag Lys	cga Arg	ggg Gly 335	gga Gly	1008
cat His	tca Ser	tct Ser	gtt Val 340	tcc Ser	act Thr	gag Glu	tct Ser	gag Glu 345	tct Ser	tca Ser	agt Ser	ttt Phe	cac His 350	tcc Ser	agc Ser	1056
tac Tyr	cgt Arg	act Thr 355	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 360	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 365	aaa Lys	ggc Gly	aac Asn	1104
tgc Cys	aac Asn 370	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 375	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 380	cgc Arg	ttc Phe	ctg Leu	cag Gln	1152
gat	gtg	ttc	acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	1200

Asp 385	Val	Phe	Thr	Thr	Leu 390	Val	Asp	Leu	Lys 406 395	Trp	Pro	His	Thr	Leu	Leu 400	
att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 405	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 410	ctg Leu	ctc Leu	ttt Phe	gcc Ala 415	atg Met	gtc Val	1248
tgg Trp	tgg Trp	ctc Leu	atc Ile 420	gcc Ala	ttc Phe	gcc Ala	cac His	ggc Gly 425	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 430	atg Met	gag Glu	1296
aaa Lys	ggc Gly	atc Ile 435	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 440	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 445	cca Pro	gat Asp	tac Tyr	1344
gcc Ala	gga Gly 450	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 455	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 460	atc Ile	cac His	tcc Ser	ttt Phe	1392
tca Ser 465	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 470	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 475	gtg Val	acc Thr	att Ile	ggc Gly	ttc Phe 480	1440
ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 485	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 490	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 495	ctc Leu	1488
att Ile	gtg Val	cag Gln	aat Asn 500	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 505	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 510	ctg Leu	ggc Gly	1536
tgc Cys	atc Ile	ttc Phe 515	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 520	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 525	gaa Glu	acc Thr	ctc Leu	1584
atc Ile	ttc Phe 530	agc Ser	aag Lys	cat His	gct Ala	gtg Val 535	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 540	ggc Gly	cgc Arg	ctg Leu	tgc Cys	1632
ttc Phe 545	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 550	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 555	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 560	1680
acc Thr	atc Ile	cac His	atg Met	cag Gln 565	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 570	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 575	gaa Glu	1728
gtt Val	gtg Val	cct Pro	ctc Leu 580	cac His	cag Gln	gta Val	gac Asp	atc Ile 585	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 590	gtg Val	ggc Gly	1776
ggc Gly	aac Asn	ggc Gly 595	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 600	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 605	cac His	gtc Val	atc Ile	1824
gac Asp	tcc Ser 610	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr 615	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser 620	gac Asp	ctg Leu	cac His	cac His	1872
cac His 625	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile 630	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu 635	ggc Gly	gtg Val	gta Val	gaa Glu	acc Thr 640	1920
acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr 645	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 650	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu 655	att Ile	1968
cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile	gtg Val	gcc Ala	gag Glu	gag Glu	gac Asp	ggc Gly	cgc Arg	2016

										407													
660					665										670								
tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca		2064						
Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr								
		675					680					685											
cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat		2112						
Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp								
	690					695					700												
gcc	ctg	acc	ctc	gcc	tgc	tgc	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg		2160						
Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val								
705					710					715					720								
gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg		2208						
Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu								
				725					730					735									
tcc																	2211						
Ser																							

<210> 142
 <211> 737
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 142

Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
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Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
20 25 30

Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
35 40 45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
50 55 60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
65 70 75 80

Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
85 90 95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
100 105 110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
115 120 125

Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
130 135 140

408
 Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
 145 150 155 160
 Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
 165 170 175
 Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
 180 185 190
 Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
 195 200 205
 Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
 210 215 220
 Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
 225 230 235 240
 Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
 245 250 255
 Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
 260 265 270
 Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
 275 280 285
 Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
 290 295 300
 Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
 305 310 315 320
 Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly
 325 330 335
 His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
 340 345 350
 Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn
 355 360 365
 Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln
 370 375 380
 Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu
 385 390 395 400
 Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val
 405 410 415
 Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu

420 425 409 430
 Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr
 435 440 445
 Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
 450 455 460
 Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
 465 470 475 480
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 485 490 495
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 500 505 510
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 515 520 525
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 530 535 540
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 545 550 555 560
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 565 570 575
 Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 580 585 590
 Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
 595 600 605
 Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
 610 615 620
 His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
 625 630 635 640
 Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
 645 650 655
 Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 660 665 670
 Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
 675 680 685
 Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp
 690 695 700

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

Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu
725 730 735

Ser

<210> 143
<211> 2103
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2103)

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

411															
Trp	Ile	Pro	Ala	Leu 165	Leu	Leu	Thr	Ile	Pro 170	Asp	Phe	Ile	Phe	Ala 175	Asn
gtc Val	agt Ser	gag Glu	gca Ala 180	gat Asp	gac Asp	aga Arg	tat Tyr	atc Ile 185	tgt Cys	gac Asp	cgc Arg	ttc Phe	tac Tyr 190	ccc Pro	aat Asn
gac Asp	ttg Leu	tgg Trp 195	gtg Val	gtt Val	gtg Val	ttc Phe	cag Gln 200	ttt Phe	cag Gln	cac His	atc Ile	atg Met 205	gtt Val	ggc Gly	ctt Leu
atc Ile	ctg Leu 210	cct Pro	ggc Gly	att Ile	gtc Val	atc Ile 215	ctg Leu	tcc Ser	tgc Cys	tat Tyr	tgc Cys 220	att Ile	atc Ile	atc Ile	tcc Ser
aag Lys 225	ctg Leu	tca Ser	cac His	tcc Ser	aag Lys 230	ggc Gly	cac His	cag Gln	aag Lys	cgc Arg 235	aag Lys	gcc Ala	ctc Leu	aag Lys	acc Thr 240
aca Thr	gtc Val	atc Ile	ctc Leu	atc Ile 245	ctg Leu	gct Ala	ttc Phe	ttc Phe	gcc Ala 250	tgt Cys	tgg Trp	ctg Leu	cct Pro	tac Tyr 255	tac Tyr
att Ile	ggg Gly	atc Ile	agc Ser 260	atc Ile	gac Asp	tcc Ser	ttc Phe	atc Ile 265	ctc Leu	ctg Leu	gaa Glu	atc Ile	atc Ile 270	aag Lys	caa Gln
ggg Gly	tgt Cys	gag Glu 275	ttt Phe	gag Glu	aac Asn	act Thr	gtg Val 280	cac His	aag Lys	tgg Trp	att Ile	tcc Ser 285	atc Ile	acc Thr	gag Glu
gcc Ala 290	cta Leu	gct Ala	ttc Phe	ttc Phe	cac His	tgt Cys 295	tgt Cys	ctg Leu	aac Asn	ccc Pro	atc Ile 300	ctc Leu	tat Tyr	gct Ala	ttc Phe
ctt Leu 305	gga Gly	gcc Ala	aaa Lys	ttt Phe	aaa Lys 310	acc Thr	tct Ser	gcc Ala	cag Gln	cac His 315	gca Ala	ctc Leu	acc Thr	tct Ser	gtg Val 320
agc Ser	aga Arg	ggg Gly	tcc Ser	agc Ser 325	ctc Leu	aag Lys	atc Ile	ctc Leu	tcc Ser 330	aaa Lys	gga Gly	aag Lys	cga Arg	ggc Gly 335	gga Gly
cat His	tca Ser	tct Ser	gtt Val 340	tcc Ser	act Thr	gag Glu	tct Ser	gag Glu 345	tct Ser	tca Ser	agt Ser	ttt Phe	cac His 350	tcc Ser	agc Ser
tac Tyr	cgt Arg	act Thr 355	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 360	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 365	aaa Lys	ggc Gly	aac Asn
tgc Cys	aac Asn 370	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 375	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 380	cgc Arg	ttc Phe	ctg Leu	cag Gln
gat Asp 385	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 390	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 395	cca Pro	cac His	act Thr	ctg Leu 400	ctc Leu
att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 405	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 410	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 415	gtc Val
tgg Trp	tgg Trp	ctc Leu	atc Ile 420	gcc Ala	ttc Phe	gcc Ala	cac His	ggc Gly 425	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 430	atg Met	gag Glu
aaa Lys	ggc Gly	atc Ile	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val	cca Pro	gat Asp	tac Tyr

			435			440			412			445				
gcc	gga	gag	ggc	acc	aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	1392
Ala	Gly	Glu	Gly	Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	
	450					455					460					
tca	tct	gcc	ttc	ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggg	ttc	1440
Ser	Ser	Ala	Phe	Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	
465					470					475					480	
ggc	ggg	cgc	atg	gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	1488
Gly	Gly	Arg	Met	Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	
				485					490					495		
att	gtg	cag	aat	atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	1536
Ile	Val	Gln	Asn	Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	
			500					505					510			
tgc	atc	ttc	atg	aaa	acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	1584
Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	
		515					520					525				
atc	ttc	agc	aag	cat	gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	1632
Ile	Phe	Ser	Lys	His	Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	
	530					535					540					
ttc	atg	ctg	cgc	gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	1680
Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	
545					550					555					560	
acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	1728
Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	
				565					570					575		
gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggg	1776
Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	
			580					585					590			
ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	1824
Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	
		595					600					605				
gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	1872
Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	
	610					615					620					
cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	1920
His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	
625					630					635					640	
acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	1968
Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	
				645					650					655		
cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	2016
Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	
			660					665					670			
tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	att	aaa	gtg	ccc	aca	2064
Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	
		675					680					685				
cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt				2103
Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser				
	690					695					700					

<210> 144
<211> 701

<212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 144

Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
 1 5 10 15

Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
 20 25 30

Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
 35 40 45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
 50 55 60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
 65 70 75 80

Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
 85 90 95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
 100 105 110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
 115 120 125

Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
 130 135 140

Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
 145 150 155 160

Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
 165 170 175

Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
 180 185 190

Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
 195 200 205

Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
 210 215 220

Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
 225 230 235 240

Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr

245 414 255 255
 Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
 260 265 270
 Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
 275 280 285
 Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
 290 295 300
 Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
 305 310 315 320
 Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly
 325 330 335
 His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
 340 345 350
 Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn
 355 360 365
 Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln
 370 375 380
 Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu
 385 390 395 400
 Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val
 405 410 415
 Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu
 420 425 430
 Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr
 435 440 445
 Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
 450 455 460
 Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
 465 470 475 480
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 485 490 495
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 500 505 510
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 515 520 525

Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 530 535 540

Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 545 550 555 560

Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 565 570 575

Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 580 585 590

Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
 595 600 605

Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
 610 615 620

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

Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
 645 650 655

Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 660 665 670

Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
 675 680 685

Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
 690 695 700

<210> 145
 <211> 2151
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2151)

<400> 145
 atg gag ggg atc agt ata tac act tca gat aac tac acc gag gaa atg
 Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
 1 5 10 15 48

ggc tca ggg gac tat gac tcc atg aag gaa ccc tgt ttc cgt gaa gaa
 Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
 20 25 30 96

aat gct aat ttc aat aaa atc ttc ctg ccc acc atc tac tcc atc atc 144

416																192
Asn	Ala	Asn 35	Phe	Asn	Lys	Ile	Phe 40	Leu	Pro	Thr	Ile	Tyr 45	Ser	Ile	Ile	
ttc Phe	tta Leu 50	act Thr	ggc Gly	att Ile	gtg Val	ggc Gly 55	aat Asn	gga Gly	ttg Leu	gtc Val	atc Ile 60	ctg Leu	gtc Val	atg Met	ggt Gly	240
tac Tyr 65	cag Gln	aag Lys	aaa Lys	ctg Leu	aga Arg 70	agc Ser	atg Met	acg Thr	gac Asp	aag Lys 75	tac Tyr	agg Arg	ctg Leu	cac His	ctg Leu 80	
tca Ser	gtg Val	gcc Ala	gac Asp	ctc Leu 85	ctc Leu	ttt Phe	gtc Val	atc Ile	acg Thr 90	ctt Leu	ccc Pro	ttc Phe	tgg Trp	gca Ala 95	gtt Val	288
gat Asp	gcc Ala	gtg Val	gca Ala 100	aac Asn	tgg Trp	tac Tyr	ttt Phe	ggg Gly 105	aac Asn	ttc Phe	cta Leu	tgc Cys	aag Lys 110	gca Ala	gtc Val	
cat His	gtc Val	atc Ile 115	tac Tyr	aca Thr	gtc Val	aac Asn	ctc Leu 120	tac Tyr	agc Ser	agt Ser	gtc Val	ctc Leu 125	atc Ile	ctg Leu	gcc Ala	384
ttc Phe	atc Ile 130	agt Ser	ctg Leu	gac Asp	cgc Arg	tac Tyr 135	ctg Leu	gcc Ala	atc Ile	gtc Val	cac His 140	gcc Ala	acc Thr	aac Asn	agt Ser	
cag Gln 145	agg Arg	cca Pro	agg Arg	aag Lys	ctg Leu 150	ttg Leu	gct Ala	gaa Glu	aag Lys	gtg Val 155	gtc Val	tat Tyr	gtt Val	ggc Gly	gtc Val 160	480
tgg Trp	atc Ile	cct Pro	gcc Ala	ctc Leu 165	ctg Leu	ctg Leu	act Thr	att Ile	ccc Pro 170	gac Asp	ttc Phe	atc Ile	ttt Phe	gcc Ala 175	aac Asn	
gtc Val	agt Ser	gag Glu	gca Ala 180	gat Asp	gac Asp	aga Arg	tat Tyr	atc Ile 185	tgt Cys	gac Asp	cgc Arg	ttc Phe	tac Tyr 190	ccc Pro	aat Asn	576
gac Asp	ttg Leu	tgg Trp 195	gtg Val	gtt Val	gtg Val	ttc Phe	cag Gln 200	ttt Phe	cag Gln	cac His	atc Ile	atg Met 205	gtt Val	ggc Gly	ctt Leu	
atc Ile	ctg Leu 210	cct Pro	ggg Gly	att Ile	gtc Val	atc Ile 215	ctg Leu	tcc Ser	tgc Cys	tat Tyr	tgc Cys 220	att Ile	atc Ile	atc Ile	tcc Ser	672
aag Lys 225	ctg Leu	tca Ser	cac His	tcc Ser	aag Lys 230	ggc Gly	cac His	cag Gln	aag Lys	cgc Arg 235	aag Lys	gcc Ala	ctc Leu	aag Lys	acc Thr 240	
aca Thr	gtc Val	atc Ile	ctc Leu	atc Ile 245	ctg Leu	gct Ala	ttc Phe	ttc Phe	gcc Ala 250	tgt Cys	tgg Trp	ctg Leu	cct Pro	tac Tyr 255	tac Tyr	768
att Ile	ggg Gly	atc Ile	agc Ser 260	atc Ile	gac Asp	tcc Ser	ttc Phe	atc Ile 265	ctc Leu	ctg Leu	gaa Glu	atc Ile	atc Ile 270	aag Lys	caa Gln	
ggg Gly	tgt Cys	gag Glu 275	ttt Phe	gag Glu	aac Asn	act Thr	gtg Val 280	cac His	aag Lys	tgg Trp	att Ile	tcc Ser 285	atc Ile	acc Thr	gag Glu	864
gcc Ala	cta Leu 290	gct Ala	ttc Phe	ttc Phe	cac His	tgt Cys 295	tgt Cys	ctg Leu	aac Asn	ccc Pro	atc Ile 300	ctc Leu	tat Tyr	gct Ala	ttc Phe	
ctt Leu	gga Gly	gcc Ala	aaa Lys	ttt Phe	aaa Lys	acc Thr	tct Ser	gcc Ala	cag Gln	cac His	gca Ala	ctc Leu	acc Thr	tct Ser	gtg Val	960

305													310													417 315													320	
agc Ser	aga Arg	ggg Gly	tcc Ser	agc Ser 325	ctc Leu	aag Lys	atc Ile	ctc Leu	tcc Ser 330	aaa Lys	gga Gly	aag Lys	cga Arg	ggt Gly 335	gga Gly	1008																								
cat His	tca Ser	tct Ser	gtt Val 340	tcc Ser	act Thr	gag Glu	tct Ser	gag Glu 345	tct Ser	tca Ser	agt Ser	ttt Phe	cac His 350	tcc Ser	agc Ser	1056																								
tac Tyr	cgt Arg	act Thr 355	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 360	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 365	aaa Lys	ggc Gly	aac Asn	1104																								
tgc Cys	aac Asn 370	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 375	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 380	cgc Arg	ttc Phe	ctg Leu	cag Gln	1152																								
gat Asp 385	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 390	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 395	cca Pro	cac His	act Thr	ctg Leu	ctc Leu 400	1200																								
att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 405	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 410	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 415	gtc Val	1248																								
tgg Trp	tgg Trp	ctc Leu	atc Ile 420	gcc Ala	ttc Phe	gcc Ala	cac His	ggt Gly 425	gac Asp	ctg Leu	gcc Ala	ccc Pro	gga Gly 430	gag Glu	ggc Gly	1296																								
acc Thr	aat Asn	gtg Val 435	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 440	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 445	tct Ser	gcc Ala	ttc Phe	1344																								
ctt Leu	ttc Phe 450	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 455	gtg Val	acc Thr	att Ile	ggt Gly	ttc Phe 460	ggc Gly	ggg Gly	cgc Arg	atg Met	1392																								
gtg Val 465	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 470	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 475	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 480	1440																								
atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 485	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 490	ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 495	atg Met	1488																								
aaa Lys	acg Thr	gcc Ala	cag Gln 500	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 505	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 510	agc Ser	aag Lys	1536																								
cat His	gct Ala	gtg Val 515	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 520	ggc Gly	cgc Arg	ctg Leu	tgc Cys	ttc Phe 525	atg Met	ctg Leu	cgc Arg	1584																								
gta Val	ggg Gly 530	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 535	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 540	acc Thr	atc Ile	cac His	atg Met	1632																								
cag Gln 545	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 550	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 555	gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 560	1680																								
cac His	cag Gln	gta Val	gac Asp	atc Ile 565	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 570	gtg Val	ggg Gly	ggg Gly	aac Asn	ggc Gly 575	atc Ile	1728																								
ttc Phe	ctg Leu	gtg Val	gcc Ala 580	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 585	cac His	gtc Val	atc Ile	gac Asp	tcc Ser 590	aac Asn	agc Ser	1776																								

ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	1824
Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	
		595					600					605				
gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	1872
Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	
	610					615					620					
acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	1920
Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	
	625				630					635					640	
cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	1968
Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	
				645					650					655		
tac	tcc	aaa	ttt	ggt	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	2016
Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	
			660					665					670			
gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	2064
Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	
		675					680					685				
gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	2112
Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	
	690					695					700					
gcc	aag	ccc	aag	ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc				2151
Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser				
	705				710					715						

<210> 146
 <211> 717
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 146

Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
1 5 10 15

Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
20 25 30

Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
35 40 45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
50 55 60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
65 70 75 80

Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
85 90 95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val

419

100	105	110	
His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala			
115	120	125	
Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser			
130	135	140	
Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val			
145	150	155	160
Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn			
165	170	175	
Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn			
180	185	190	
Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu			
195	200	205	
Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser			
210	215	220	
Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr			
225	230	235	240
Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr			
245	250	255	
Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln			
260	265	270	
Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu			
275	280	285	
Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe			
290	295	300	
Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val			
305	310	315	320
Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly			
325	330	335	
His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser			
340	345	350	
Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn			
355	360	365	
Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln			
370	375	380	

Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu
 385 390 395 400
 Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val
 405 410 415
 Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly
 420 425 430
 Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe
 435 440 445
 Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met
 450 455 460
 Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn
 465 470 475 480
 Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met
 485 490 495
 Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys
 500 505 510
 His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg
 515 520 525
 Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met
 530 535 540
 Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu
 545 550 555 560
 His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile
 565 570 575
 Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser
 580 585 590
 Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu
 595 600 605
 Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr
 610 615 620
 Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln
 625 630 635 640
 Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp
 645 650 655

Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr
660 665 670

Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu
675 680 685

Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys
690 695 700

Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
705 710 715

<210> 147
<211> 2043
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2043)

<400> 147
atg gag ggg atc agt ata tac act tca gat aac tac acc gag gaa atg 48
Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
1 5 10 15
ggc tca ggg gac tat gac tcc atg aag gaa ccc tgt ttc cgt gaa gaa 96
Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
20 25 30
aat gct aat ttc aat aaa atc ttc ctg ccc acc atc tac tcc atc atc 144
Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
35 40 45
ttc tta act ggc att gtg ggc aat gga ttg gtc atc ctg gtc atg ggt 192
Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
50 55 60
tac cag aag aaa ctg aga agc atg acg gac aag tac agg ctg cac ctg 240
Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
65 70 75 80
tca gtg gcc gac ctc ctc ttt gtc atc acg ctt ccc ttc tgg gca gtt 288
Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
85 90 95
gat gcc gtg gca aac tgg tac ttt ggg aac ttc cta tgc aag gca gtc 336
Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
100 105 110
cat gtc atc tac aca gtc aac ctc tac agc agt gtc ctc atc ctg gcc 384
His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
115 120 125
ttc atc agt ctg gac cgc tac ctg gcc atc gtc cac gcc acc aac agt 432
Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
130 135 140
cag agg cca agg aag ctg ttg gct gaa aag gtg gtc tat gtt ggc gtc 480
Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val

145	150							422 155				160				
tgg Trp	atc Ile	cct Pro	gcc Ala	ctc Leu 165	ctg Leu	ctg Leu	act Thr	att Ile	ccc Pro 170	gac Asp	ttc Phe	atc Ile	ttt Phe	gcc Ala 175	aac Asn	528
gtc Val	agt Ser	gag Glu	gca Ala 180	gat Asp	gac Asp	aga Arg	tat Tyr	atc Ile 185	tgt Cys	gac Asp	cgc Arg	ttc Phe	tac Tyr 190	ccc Pro	aat Asn	576
gac Asp	ttg Leu	tgg Trp 195	gtg Val	gtt Val	gtg Val	ttc Phe	cag Gln 200	ttt Phe	cag Gln	cac His	atc Ile	atg Met 205	gtt Val	ggc Gly	ctt Leu	624
atc Ile	ctg Leu 210	cct Pro	ggg Gly	att Ile	gtc Val	atc Ile 215	ctg Leu	tcc Ser	tgc Cys	tat Tyr	tgc Cys 220	att Ile	atc Ile	atc Ile	tcc Ser	672
aag Lys 225	ctg Leu	tca Ser	cac His	tcc Ser	aag Lys 230	ggc Gly	cac His	cag Gln	aag Lys	cgc Arg 235	aag Lys	gcc Ala	ctc Leu	aag Lys	acc Thr 240	720
aca Thr	gtc Val	atc Ile	ctc Leu	atc Ile 245	ctg Leu	gct Ala	ttc Phe	ttc Phe	gcc Ala 250	tgt Cys	tgg Trp	ctg Leu	cct Pro	tac Tyr 255	tac Tyr	768
att Ile	ggg Gly	atc Ile	agc Ser 260	atc Ile	gac Asp	tcc Ser	ttc Phe	atc Ile 265	ctc Leu	ctg Leu	gaa Glu	atc Ile	atc Ile 270	aag Lys	caa Gln	816
ggg Gly	tgt Cys	gag Glu 275	ttt Phe	gag Glu	aac Asn	act Thr	gtg Val 280	cac His	aag Lys	tgg Trp	att Ile	tcc Ser 285	atc Ile	acc Thr	gag Glu	864
gcc Ala 290	cta Leu	gct Ala	ttc Phe	ttc Phe	cac His	tgt Cys 295	tgt Cys	ctg Leu	aac Asn	ccc Pro	atc Ile 300	ctc Leu	tat Tyr	gct Ala	ttc Phe	912
ctt Leu 305	gga Gly	gcc Ala	aaa Lys	ttt Phe	aaa Lys 310	acc Thr	tct Ser	gcc Ala	cag Gln	cac His 315	gca Ala	ctc Leu	acc Thr	tct Ser	gtg Val 320	960
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cat His	tca Ser	tct Ser	gtt Val 340	tcc Ser	act Thr	gag Glu	tct Ser	gag Glu 345	tct Ser	tca Ser	agt Ser	ttt Phe	cac His 350	tcc Ser	agc Ser	1056
tac Tyr	cgt Arg	act Thr 355	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 360	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 365	aaa Lys	ggc Gly	aac Asn	1104
tgc Cys	aac Asn 370	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 375	att Ile	cga Arg	gag Glu	cag Gln	ggc Gly 380	cgc Arg	ttc Phe	ctg Leu	cag Gln	1152
gat Asp 385	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 390	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 395	cca Pro	cac His	act Thr	ctg Leu	ctc Leu 400	1200
att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 405	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 410	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 415	gtc Val	1248
tgg Trp	tgg Trp	ctc Leu	atc Ile 420	gcc Ala	ttc Phe	gcc Ala	cac His	ggg Gly 425	gac Asp	ctg Leu	gcc Ala	ccc Pro	gga Gly 430	gag Glu	ggc Gly	1296

acc Thr	aat Asn	gtg Val 435	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 440	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 445	tct Ser	gcc Ala	ttc Phe	1344
ctt Leu	ttc Phe 450	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 455	gtg Val	acc Thr	att Ile	ggg Gly	ttc Phe 460	ggc Gly	ggg Gly	cgc Arg	atg Met	1392
gtg Val 465	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 470	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 475	ctc Leu	att Ile	gtg Val	cag Gln 480	aat Asn	1440
atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 485	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 490	ctg Leu	ggc Gly	tgc Cys	atc Ile	ttc Phe 495	atg Met	1488
aaa Lys	acg Thr	gcc Ala	cag Gln 500	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 505	gaa Glu	acc Thr	ctc Leu	atc Ile	ttc Phe 510	agc Ser	aag Lys	1536
cat His	gct Ala	gtg Val 515	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 520	ggc Gly	cgc Arg	ctg Leu	tgc Cys	ttc Phe 525	atg Met	ctg Leu	cgc Arg	1584
gta Val	ggg Gly 530	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 535	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 540	acc Thr	atc Ile	cac His	atg Met	1632
cag Gln 545	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 550	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 555	gaa Glu	gtt Val	gtg Val	cct Pro	ctc Leu 560	1680
cac His	cag Gln	gta Val	gac Asp	atc Ile 565	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 570	gtg Val	ggg Gly	ggg Gly	aac Asn	ggc Gly 575	atc Ile	1728
ttc Phe	ctg Leu	gtg Val	gcc Ala 580	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 585	cac His	gtc Val	atc Ile	gac Asp	tcc Ser 590	aac Asn	agc Ser	1776
ccg Pro	ctc Leu	tac Tyr 595	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser 600	gac Asp	ctg Leu	cac His	cac His	cac His 605	cag Gln	gac Asp	ctg Leu	1824
gag Glu	atc Ile 610	att Ile	gtc Val	atc Ile	ttg Leu	gaa Glu 615	ggc Gly	gtg Val	gta Val	gaa Glu	acc Thr 620	acg Thr	ggc Gly	atc Ile	acc Thr	1872
acc Thr 625	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 630	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu 635	att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln 640	1920
cgc Arg	ttt Phe	gtc Val	ccc Pro	att Ile 645	gtg Val	gcc Ala	gag Glu	gag Glu	gac Asp 650	ggc Gly	cgc Arg	tat Tyr	tct Ser	gtg Val 655	gac Asp	1968
tac Tyr	tcc Ser	aaa Lys	ttt Phe 660	ggg Gly	aac Asn	acc Thr	att Ile	aaa Lys 665	gtg Val	ccc Pro	aca Thr	cca Pro	ctc Leu 670	tgc Cys	aca Thr	2016
gcc Ala	cgc Arg	cag Gln 675	ctt Leu	gat Asp	gag Glu	gac Asp	cgc Arg 680	agt Ser								2043

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<211>	681
<212>	PRT

<213> Artificial sequence

<220>

<223> Synthetic Construct

<400> 148

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Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
35     40     45

Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
50     55     60

Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
65     70     75     80

Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
85     90     95

Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
100    105    110

His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
115    120    125

Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
130    135    140

Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
145    150    155    160

Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
165    170    175

Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
180    185    190

Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
195    200    205

Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
210    215    220

Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
225    230    235    240

Thr Val Ile Leu Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
245    250    255

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Ile Gly Ile Ser₂₆₀ Ile Asp Ser Phe Ile₂₆₅ Leu Leu Glu Ile Ile₂₇₀ Lys Gln
 Gly Cys Glu₂₇₅ Phe Glu Asn Thr Val₂₈₀ His Lys Trp Ile Ser₂₈₅ Ile Thr Glu
 Ala Leu₂₉₀ Ala Phe Phe His Cys₂₉₅ Cys Leu Asn Pro Ile₃₀₀ Leu Tyr Ala Phe
 Leu Gly Ala Lys Phe Lys₃₁₀ Thr Ser Ala Gln His₃₁₅ Ala Leu Thr Ser Val₃₂₀
 Ser Arg Gly Ser Ser₃₂₅ Leu Lys Ile Leu Ser₃₃₀ Lys Gly Lys Arg Gly₃₃₅ Gly
 His Ser Ser Val₃₄₀ Ser Thr Glu Ser Glu₃₄₅ Ser Ser Ser Phe His₃₅₀ Ser Ser
 Tyr Arg Thr₃₅₅ Arg Glu Arg Arg Ala₃₆₀ Arg Phe Val Ser Lys₃₆₅ Lys Gly Asn
 Cys Asn₃₇₀ Val Ala His Lys Asn₃₇₅ Ile Arg Glu Gln Gly₃₈₀ Arg Phe Leu Gln
 Asp Val₃₈₅ Phe Thr Thr Leu₃₉₀ Val Asp Leu Lys Trp₃₉₅ Pro His Thr Leu Leu₄₀₀
 Ile Phe Thr Met Ser₄₀₅ Phe Leu Cys Ser Trp₄₁₀ Leu Leu Phe Ala Met₄₁₅ Val
 Trp Trp Leu Ile₄₂₀ Ala Phe Ala His Gly₄₂₅ Asp Leu Ala Pro Gly₄₃₀ Glu Gly
 Thr Asn Val₄₃₅ Pro Cys Val Thr Ser₄₄₀ Ile His Ser Phe Ser₄₄₅ Ser Ala Phe
 Leu Phe₄₅₀ Ser Ile Glu Val Gln₄₅₅ Val Thr Ile Gly Phe₄₆₀ Gly Gly Arg Met
 Val₄₆₅ Thr Glu Glu Cys Pro₄₇₀ Leu Ala Ile Leu Ile₄₇₅ Leu Ile Val Gln Asn₄₈₀
 Ile Val Gly Leu Met₄₈₅ Ile Asn Ala Ile Met₄₉₀ Leu Gly Cys Ile Phe₄₉₅ Met
 Lys Thr Ala Gln₅₀₀ Ala His Arg Arg Ala₅₀₅ Glu Thr Leu Ile Phe₅₁₀ Ser Lys
 His Ala Val₅₁₅ Ile Thr Leu Arg His₅₂₀ Gly Arg Leu Cys Phe₅₂₅ Met Leu Arg

Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met
530 535 540

Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu
545 550 555 560

His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile
565 570 575

Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser
580 585 590

Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu
595 600 605

Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr
610 615 620

Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln
625 630 635 640

Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp
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Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr
660 665 670

Ala Arg Gln Leu Asp Glu Asp Arg Ser
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<211> 2211
<212> DNA
<213> Artificial sequence

<220>
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<220>
<221> CDS
<222> (1)..(2211)

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Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu
20 25 30

ctg cct ccg ctc tac tca ctg gtg ttc atc ttt ggt ttt gtg ggc aac 144
Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn
35 40 45

atg ctg gtc atc ctc atc ctg ata aac tgc aaa agg ctg aag agc atg 192
Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met

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ctt Leu	act Thr	gtc Val	ccc Pro	ttc Phe 85	tgg Trp	gct Ala	cac His	tat Tyr	gct Ala 90	gcc Ala	gcc Ala	cag Gln	tgg Trp	gac Asp 95	ttt Phe	288
gga Gly	aat Asn	aca Thr	atg Met 100	tgt Cys	caa Gln	ctc Leu	ttg Leu	aca Thr 105	ggg Gly	ctc Leu	tat Tyr	ttt Phe	ata Ile 110	ggc Gly	ttc Phe	336
ttc Phe	tct Ser	gga Gly 115	atc Ile	ttc Phe	ttc Phe	atc Ile	atc Ile 120	ctc Leu	ctg Leu	aca Thr	atc Ile	gat Asp 125	agg Arg	tac Tyr	ctg Leu	384
gct Ala	gtc Val 130	gtc Val	cat His	gct Ala	gtg Val 135	ttt Phe	gct Ala	tta Leu	aaa Lys	gcc Ala	agg Arg 140	acg Thr	gtc Val	acc Thr	ttt Phe	432
ggg Gly 145	gtg Val	gtg Val	aca Thr	agt Ser	gtg Val 150	atc Ile	act Thr	tgg Trp	gtg Val	gtg Val 155	gct Ala	gtg Val	ttt Phe	gcg Ala	tct Ser 160	480
ctc Leu	cca Pro	gga Gly	atc Ile	atc Ile 165	ttt Phe	acc Thr	aga Arg	tct Ser	caa Gln 170	aaa Lys	gaa Glu	ggt Gly	ctt Leu	cat His 175	tac Tyr	528
acc Thr	tgc Cys	agc Ser	tct Ser 180	cat His	ttt Phe	cca Pro	tac Tyr	agt Ser 185	cag Gln	tat Tyr	caa Gln	ttc Phe	tgg Trp 190	aag Lys	aat Asn	576
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cga Arg 225	aat Asn	gag Glu	aag Lys	aag Lys	agg Arg 230	cac His	agg Arg	gct Ala	gtg Val	agg Arg 235	ctt Leu	atc Ile	ttc Phe	acc Thr	atc Ile 240	720
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tgc Cys	aaa Lys	tgc Cys	tgt Cys	tct Ser 325	att Ile	ttc Phe	cag Gln	caa Gln	gag Glu 330	gct Ala	ccc Pro	gag Glu	cga Arg	gca Ala 335	agc Ser	1008

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gcc Ala	gga Gly 450	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 455	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 460	atc Ile	cac His	tcc Ser	ttt Phe	1392
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ggg Gly	aac Asn	ggc Gly 595	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 600	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 605	cac His	gtc Val	atc Ile	1824

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Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	
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Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	
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cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt	ctg	ctg	gat	2112
Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	
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gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	2160
Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	
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Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	
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tcc																2211
Ser																

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Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn
35 40 45

Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met
50 55 60

Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu
65 70 75 80

Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe
85 90 95

Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe
 100 105 110
 Phe Ser Gly Ile Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu
 115 120 125
 Ala Val Val His Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe
 130 135 140
 Gly Val Val Thr Ser Val Ile Thr Trp Val Val Ala Val Phe Ala Ser
 145 150 155 160
 Leu Pro Gly Ile Ile Phe Thr Arg Ser Gln Lys Glu Gly Leu His Tyr
 165 170 175
 Thr Cys Ser Ser His Phe Pro Tyr Ser Gln Tyr Gln Phe Trp Lys Asn
 180 185 190
 Phe Gln Thr Leu Lys Ile Val Ile Leu Gly Leu Val Leu Pro Leu Leu
 195 200 205
 Val Met Val Ile Cys Tyr Ser Gly Ile Leu Lys Thr Leu Leu Arg Cys
 210 215 220
 Arg Asn Glu Lys Lys Arg His Arg Ala Val Arg Leu Ile Phe Thr Ile
 225 230 235 240
 Met Ile Val Tyr Phe Leu Phe Trp Ala Pro Tyr Asn Ile Val Leu Leu
 245 250 255
 Leu Asn Thr Phe Gln Glu Phe Phe Gly Leu Asn Asn Cys Ser Ser Ser
 260 265 270
 Asn Arg Leu Asp Gln Ala Met Gln Val Thr Glu Thr Leu Gly Met Thr
 275 280 285
 His Cys Cys Ile Asn Pro Ile Ile Tyr Ala Phe Val Gly Glu Lys Phe
 290 295 300
 Arg Asn Tyr Leu Leu Val Phe Phe Gln Lys His Ile Ala Lys Arg Phe
 305 310 315 320
 Cys Lys Cys Cys Ser Ile Phe Gln Gln Glu Ala Pro Glu Arg Ala Ser
 325 330 335
 Ser Val Tyr Thr Arg Ser Thr Gly Glu Gln Glu Ile Ser Val Gly Leu
 340 345 350
 Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn
 355 360 365

Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln
 370 375 380
 Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu
 385 390 395 400
 Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val
 405 410 415
 Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu
 420 425 430
 Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr
 435 440 445
 Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
 450 455 460
 Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
 465 470 475 480
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 485 490 495
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 500 505 510
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 515 520 525
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 530 535 540
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 545 550 555 560
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 565 570 575
 Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 580 585 590
 Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
 595 600 605
 Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
 610 615 620
 His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
 625 630 635 640

Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
 645 650 655
 Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 660 665 670
 Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
 675 680 685
 Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp
 690 695 700
 Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val
 705 710 715 720
 Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu
 725 730 735

Ser

<210> 151
 <211> 2103
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2103)

<400> 151 atg gat tat caa gtg tca agt cca atc tat gac atc aat tat tat aca Met Asp Tyr Gln Val Ser Ser Pro Ile Tyr Asp Ile Asn Tyr Tyr Thr 1 5 10 15	48
tcg gag ccc tgc caa aaa atc aat gtg aag caa atc gca gcc cgc ctc Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu 20 25 30	96
ctg cct ccg ctc tac tca ctg gtg ttc atc ttt ggt ttt gtg ggc aac Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn 35 40 45	144
atg ctg gtc atc ctc atc ctg ata aac tgc aaa agg ctg aag agc atg Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met 50 55 60	192
act gac atc tac ctg ctc aac ctg gcc atc tct gac ctg ttt ttc ctt Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu 65 70 75 80	240
ctt act gtc ccc ttc tgg gct cac tat gct gcc gcc cag tgg gac ttt Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe 85 90 95	288
gga aat aca atg tgt caa ctc ttg aca ggg ctc tat ttt ata ggc ttc Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe 100 105 110	336

tct	tct	gga	atc	ttc	ttc	atc	atc	ctc	ctg	aca	atc	gat	agg	tac	ctg	384
Phe	Ser	Gly	Ile	Phe	Phe	Ile	Ile	Leu	Leu	Thr	Ile	Asp	Arg	Tyr	Leu	
		115					120					125				
gct	gtc	gtc	cat	gct	gtg	ttt	gct	tta	aaa	gcc	agg	acg	gtc	acc	ttt	432
Ala	Val	Val	His	Ala	Val	Phe	Ala	Leu	Lys	Ala	Arg	Thr	Val	Thr	Phe	
	130					135					140					
ggg	gtg	gtg	aca	agt	gtg	atc	act	tgg	gtg	gtg	gct	gtg	ttt	gcg	tct	480
Gly	Val	Val	Thr	Ser	Val	Ile	Thr	Trp	Val	Val	Ala	Val	Phe	Ala	Ser	
	145				150					155					160	
ctc	cca	gga	atc	atc	ttt	acc	aga	tct	caa	aaa	gaa	ggg	ctt	cat	tac	528
Leu	Pro	Gly	Ile	Ile	Phe	Thr	Arg	Ser	Gln	Lys	Glu	Gly	Leu	His	Tyr	
				165					170					175		
acc	tgc	agc	tct	cat	ttt	cca	tac	agt	cag	tat	caa	ttc	tgg	aag	aat	576
Thr	Cys	Ser	Ser	His	Phe	Pro	Tyr	Ser	Gln	Tyr	Gln	Phe	Trp	Lys	Asn	
			180					185					190			
ttc	cag	aca	tta	aag	ata	gtc	atc	ttg	ggg	ctg	gtc	ctg	ccg	ctg	ctt	624
Phe	Gln	Thr	Leu	Lys	Ile	Val	Ile	Leu	Gly	Leu	Val	Leu	Pro	Leu	Leu	
		195					200					205				
gtc	atg	gtc	atc	tgc	tac	tgc	gga	atc	cta	aaa	act	ctg	ctt	cgg	tgt	672
Val	Met	Val	Ile	Cys	Tyr	Ser	Gly	Ile	Leu	Lys	Thr	Leu	Leu	Arg	Cys	
	210					215					220					
cga	aat	gag	aag	aag	agg	cac	agg	gct	gtg	agg	ctt	atc	ttc	acc	atc	720
Arg	Asn	Glu	Lys	Lys	Arg	His	Arg	Ala	Val	Arg	Leu	Ile	Phe	Thr	Ile	
	225				230					235					240	
atg	att	gtt	tat	ttt	ctc	ttc	tgg	gct	ccc	tac	aac	att	gtc	ctt	ctc	768
Met	Ile	Val	Tyr	Phe	Leu	Phe	Trp	Ala	Pro	Tyr	Asn	Ile	Val	Leu	Leu	
				245					250					255		
ctg	aac	acc	ttc	cag	gaa	ttc	ttt	ggc	ctg	aat	aat	tgc	agt	agc	tct	816
Leu	Asn	Thr	Phe	Gln	Glu	Phe	Phe	Gly	Leu	Asn	Asn	Cys	Ser	Ser	Ser	
			260					265					270			
aac	agg	ttg	gac	caa	gct	atg	cag	gtg	aca	gag	act	ctt	ggg	atg	acg	864
Asn	Arg	Leu	Asp	Gln	Ala	Met	Gln	Val	Thr	Glu	Thr	Leu	Gly	Met	Thr	
		275					280					285				
cac	tgc	tgc	atc	aac	ccc	atc	atc	tat	gcc	ttt	gtc	ggg	gag	aag	ttc	912
His	Cys	Cys	Ile	Asn	Pro	Ile	Ile	Tyr	Ala	Phe	Val	Gly	Glu	Lys	Phe	
	290					295					300					
aga	aac	tac	ctc	tta	gtc	ttc	ttc	caa	aag	cac	att	gcc	aaa	cgc	ttc	960
Arg	Asn	Tyr	Leu	Leu	Val	Phe	Phe	Gln	Lys	His	Ile	Ala	Lys	Arg	Phe	
	305				310					315					320	
tgc	aaa	tgc	tgt	tct	att	ttc	cag	caa	gag	gct	ccc	gag	cga	gca	agc	1008
Cys	Lys	Cys	Cys	Ser	Ile	Phe	Gln	Gln	Glu	Ala	Pro	Glu	Arg	Ala	Ser	
				325					330					335		
tca	gtt	tac	acc	cga	tcc	act	ggg	gag	cag	gaa	ata	tct	gtg	ggc	ttg	1056
Ser	Val	Tyr	Thr	Arg	Ser	Thr	Gly	Glu	Gln	Glu	Ile	Ser	Val	Gly	Leu	
			340					345					350			
tac	cgt	act	cga	gag	agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	1104
Tyr	Arg	Thr	Arg	Glu	Arg	Arg	Ala	Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	
		355					360					365				
tgc	aac	gtc	gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	1152
Cys	Asn	Val	Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	
	370					375					380					

434																
gat Asp 385	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 390	gtg Val	gac Asp	ctc Leu	aaa Lys	tgg Trp 395	cca Pro	cac His	act Thr	ctg Leu	ctc Leu 400	1200
att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 405	ttc Phe	ctg Leu	tgc Cys	agc Ser	tgg Trp 410	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 415	gtc Val	1248
tgg Trp	tgg Trp	ctc Leu	atc Ile 420	gcc Ala	ttc Phe	gcc Ala	cac His	ggc Gly 425	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 430	atg Met	gag Glu	1296
aaa Lys	ggc Gly	atc Ile 435	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 440	tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 445	cca Pro	gat Asp	tac Tyr	1344
gcc Ala	gga Gly 450	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 455	ccc Pro	tgc Cys	gtc Val	aca Thr	agc Ser 460	atc Ile	cac His	tcc Ser	ttt Phe	1392
tca Ser 465	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 470	tcc Ser	atc Ile	gag Glu	gtc Val	cag Gln 475	gtg Val	acc Thr	att Ile	ggc Gly	ttc Phe 480	1440
ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 485	aca Thr	gag Glu	gaa Glu	tgt Cys	ccc Pro 490	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 495	ctc Leu	1488
att Ile	gtg Val	cag Gln	aat Asn 500	atc Ile	gtc Val	ggg Gly	ctg Leu	atg Met 505	atc Ile	aac Asn	gcc Ala	atc Ile	atg Met 510	ctg Leu	ggc Gly	1536
tgc Cys	atc Ile	ttc Phe 515	atg Met	aaa Lys	acg Thr	gcc Ala	cag Gln 520	gca Ala	cat His	cgg Arg	cgg Arg	gca Ala 525	gaa Glu	acc Thr	ctc Leu	1584
atc Ile	ttc Phe 530	agc Ser	aag Lys	cat His	gct Ala	gtg Val 535	atc Ile	acc Thr	ctg Leu	cgc Arg	cat His 540	ggc Gly	cgc Arg	ctg Leu	tgc Cys	1632
ttc Phe 545	atg Met	ctg Leu	cgc Arg	gta Val	ggg Gly 550	gac Asp	ctc Leu	cga Arg	aag Lys	agc Ser 555	atg Met	atc Ile	att Ile	agc Ser	gcc Ala 560	1680
acc Thr	atc Ile	cac His	atg Met	cag Gln 565	gtg Val	gtg Val	cgc Arg	aag Lys	acc Thr 570	acc Thr	agc Ser	ccc Pro	gag Glu	ggc Gly 575	gaa Glu	1728
gtt Val	gtg Val	cct Pro	ctc Leu 580	cac His	cag Gln	gta Val	gac Asp	atc Ile 585	ccc Pro	atg Met	gag Glu	aat Asn	ggc Gly 590	gtg Val	ggc Gly	1776
ggc Gly	aac Asn	ggc Gly 595	atc Ile	ttc Phe	ctg Leu	gtg Val	gcc Ala 600	cca Pro	ctc Leu	atc Ile	atc Ile	tac Tyr 605	cac His	gtc Val	atc Ile	1824
gac Asp	tcc Ser 610	aac Asn	agc Ser	ccg Pro	ctc Leu	tac Tyr 615	gac Asp	ctg Leu	gct Ala	cct Pro	agt Ser 620	gac Asp	ctg Leu	cac His	cac His	1872
cac His 625	cag Gln	gac Asp	ctg Leu	gag Glu	atc Ile 630	att Ile	gtc Val	atc Ile	tgt Leu	gaa Glu 635	ggc Gly	gtg Val	gta Val	gaa Glu	acc Thr 640	1920
acg Thr	ggc Gly	atc Ile	acc Thr	acc Thr 645	cag Gln	gcc Ala	cgc Arg	acc Thr	tcc Ser 650	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu 655	att Ile	1968
cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	2016

Leu	Trp	Gly	Gln 660	Arg	Phe	Val	Pro	Ile 665	Val	Ala 435	Glu	Glu	Asp 670	Gly	Arg	
tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggt	aac	acc	att	aaa	gtg	ccc	aca	2064
Tyr	Ser	Val 675	Asp	Tyr	Ser	Lys	Phe 680	Gly	Asn	Thr	Ile	Lys 685	Val	Pro	Thr	
cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt				2103
Pro	Leu 690	Cys	Thr	Ala	Arg	Gln 695	Leu	Asp	Glu	Asp	Arg 700	Ser				

<210>	152
<211>	701
<212>	PRT
<213>	Artificial sequence

<220>
<223> Synthetic Construct

<400> 152

Met Asp Tyr Gln Val Ser Ser Pro Ile Tyr Asp Ile Asn Tyr Tyr Thr
1 5 10 15

Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu
20 25 30

Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn
35 40 45

Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met
50 55 60

Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu
65 70 75 80

Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe
85 90 95

Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe
100 105 110

Phe Ser Gly Ile Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu
115 120 125

Ala Val Val His Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe
130 135 140

Gly Val Val Thr Ser Val Ile Thr Trp Val Val Ala Val Phe Ala Ser
145 150 155 160

Leu Pro Gly Ile Ile Phe Thr Arg Ser Gln Lys Glu Gly Leu His Tyr
165 170 175

Thr Cys Ser Ser His Phe Pro Tyr Ser Gln Tyr Gln Phe Trp Lys Asn
180 185 190

Phe Gln Thr Leu Lys Ile Val Ile Leu Gly Leu Val Leu Pro Leu Leu
 195 200 205
 Val Met Val Ile Cys Tyr Ser Gly Ile Leu Lys Thr Leu Leu Arg Cys
 210 215 220
 Arg Asn Glu Lys Lys Arg His Arg Ala Val Arg Leu Ile Phe Thr Ile
 225 230 235 240
 Met Ile Val Tyr Phe Leu Phe Trp Ala Pro Tyr Asn Ile Val Leu Leu
 245 250 255
 Leu Asn Thr Phe Gln Glu Phe Phe Gly Leu Asn Asn Cys Ser Ser Ser
 260 265 270
 Asn Arg Leu Asp Gln Ala Met Gln Val Thr Glu Thr Leu Gly Met Thr
 275 280 285
 His Cys Cys Ile Asn Pro Ile Ile Tyr Ala Phe Val Gly Glu Lys Phe
 290 295 300
 Arg Asn Tyr Leu Leu Val Phe Phe Gln Lys His Ile Ala Lys Arg Phe
 305 310 315 320
 Cys Lys Cys Cys Ser Ile Phe Gln Gln Glu Ala Pro Glu Arg Ala Ser
 325 330 335
 Ser Val Tyr Thr Arg Ser Thr Gly Glu Gln Glu Ile Ser Val Gly Leu
 340 345 350
 Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn
 355 360 365
 Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln
 370 375 380
 Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu
 385 390 395 400
 Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val
 405 410 415
 Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu
 420 425 430
 Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr
 435 440 445
 Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
 450 455 460

Ser Ser Ala Phe Leu Phe Ser Ile Glu Val⁴³⁷ Gln Val Thr Ile Gly Phe
 465 470 475 480
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 485 490 495
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 500 505 510
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 515 520 525
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 530 535 540
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 545 550 555 560
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 565 570 575
 Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 580 585 590
 Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
 595 600 605
 Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
 610 615 620
 His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
 625 630 635 640
 Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
 645 650 655
 Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
 660 665 670
 Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
 675 680 685
 Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser
 690 695 700

<210> 153
 <211> 2151
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>

<221> CDS

<222> (1)..(2151)

<400> 153

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tcg gag ccc tgc caa aaa atc aat gtg aag caa atc gca gcc cgc ctc	96
Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu	
20 25 30	
ctg cct ccg ctc tac tca ctg gtg ttc atc ttt ggt ttt gtg ggc aac	144
Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn	
35 40 45	
atg ctg gtc atc ctc atc ctg ata aac tgc aaa agg ctg aag agc atg	192
Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met	
50 55 60	
act gac atc tac ctg ctc aac ctg gcc atc tct gac ctg ttt ttc ctt	240
Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu	
65 70 75 80	
ctt act gtc ccc ttc tgg gct cac tat gct gcc gcc cag tgg gac ttt	288
Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe	
85 90 95	
gga aat aca atg tgt caa ctc ttg aca ggg ctc tat ttt ata ggc ttc	336
Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe	
100 105 110	
ttc tct gga atc ttc ttc atc atc ctc ctg aca atc gat agg tac ctg	384
Phe Ser Gly Ile Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu	
115 120 125	
gct gtc gtc cat gct gtg ttt gct tta aaa gcc agg acg gtc acc ttt	432
Ala Val Val His Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe	
130 135 140	
ggg gtg gtg aca agt gtg atc act tgg gtg gtg gct gtg ttt gcg tct	480
Gly Val Val Thr Ser Val Ile Thr Trp Val Val Ala Val Phe Ala Ser	
145 150 155 160	
ctc cca gga atc atc ttt acc aga tct caa aaa gaa ggt ctt cat tac	528
Leu Pro Gly Ile Ile Phe Thr Arg Ser Gln Lys Glu Gly Leu His Tyr	
165 170 175	
acc tgc agc tct cat ttt cca tac agt cag tat caa ttc tgg aag aat	576
Thr Cys Ser Ser His Phe Pro Tyr Ser Gln Tyr Gln Phe Trp Lys Asn	
180 185 190	
ttc cag aca tta aag ata gtc atc ttg ggg ctg gtc ctg ccg ctg ctt	624
Phe Gln Thr Leu Lys Ile Val Ile Leu Gly Leu Val Leu Pro Leu Leu	
195 200 205	
gtc atg gtc atc tgc tac tcg gga atc cta aaa act ctg ctt cgg tgt	672
Val Met Val Ile Cys Tyr Ser Gly Ile Leu Lys Thr Leu Leu Arg Cys	
210 215 220	
cga aat gag aag aag agg cac agg gct gtg agg ctt atc ttc acc atc	720
Arg Asn Glu Lys Lys Arg His Arg Ala Val Arg Leu Ile Phe Thr Ile	
225 230 235 240	
atg att gtt tat ttt ctc ttc tgg gct ccc tac aac att gtc ctt ctc	768
Met Ile Val Tyr Phe Leu Phe Trp Ala Pro Tyr Asn Ile Val Leu Leu	
245 250 255	

439																
ctg	aac	acc	ttc	cag	gaa	ttc	ttt	ggc	ctg	aat	aat	tgc	agt	agc	tct	816
Leu	Asn	Thr	Phe 260	Gln	Glu	Phe	Phe	Gly 265	Leu	Asn	Asn	Cys	Ser 270	Ser	Ser	
aac	agg	ttg	gac	caa	gct	atg	cag	gtg	aca	gag	act	ctt	ggg	atg	acg	864
Asn	Arg	Leu 275	Asp	Gln	Ala	Met	Gln 280	Val	Thr	Glu	Thr	Leu 285	Gly	Met	Thr	
cac	tgc	tgc	atc	aac	ccc	atc	atc	tat	gcc	ttt	gtc	ggg	gag	aag	ttc	912
His	Cys 290	Cys	Ile	Asn	Pro	Ile 295	Ile	Tyr	Ala	Phe	Val 300	Gly	Glu	Lys	Phe	
aga	aac	tac	ctc	tta	gtc	ttc	ttc	caa	aag	cac	att	gcc	aaa	cgc	ttc	960
Arg	Asn	Tyr	Leu	Leu	Val 310	Phe	Phe	Gln	Lys	His 315	Ile	Ala	Lys	Arg	Phe 320	
tgc	aaa	tgc	tgt	tct	att	ttc	cag	caa	gag	gct	ccc	gag	cga	gca	agc	1008
Cys	Lys	Cys	Cys	Ser 325	Ile	Phe	Gln	Gln	Glu 330	Ala	Pro	Glu	Arg	Ala 335	Ser	
tca	gtt	tac	acc	cga	tcc	act	ggg	gag	cag	gaa	ata	tct	gtg	ggc	ttg	1056
Ser	Val	Tyr	Thr 340	Arg	Ser	Thr	Gly	Glu 345	Gln	Glu	Ile	Ser	Val 350	Gly	Leu	
tac	cgt	act	cga	gag	agg	agg	gcc	cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	1104
Tyr	Arg	Thr 355	Arg	Glu	Arg	Arg	Ala 360	Arg	Phe	Val	Ser	Lys 365	Lys	Gly	Asn	
tgc	aac	gtc	gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	1152
Cys	Asn 370	Val	Ala	His	Lys	Asn 375	Ile	Arg	Glu	Gln	Gly 380	Arg	Phe	Leu	Gln	
gat	gtg	ttc	acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	1200
Asp	Val	Phe	Thr	Thr	Leu 390	Val	Asp	Leu	Lys	Trp 395	Pro	His	Thr	Leu	Leu 400	
att	ttc	acc	atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	1248
Ile	Phe	Thr	Met	Ser 405	Phe	Leu	Cys	Ser	Trp 410	Leu	Leu	Phe	Ala	Met 415	Val	
tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	ggt	gac	ctg	gcc	ccc	gga	gag	ggc	1296
Trp	Trp	Leu	Ile 420	Ala	Phe	Ala	His	Gly 425	Asp	Leu	Ala	Pro	Gly 430	Glu	Gly	
acc	aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	1344
Thr	Asn	Val 435	Pro	Cys	Val	Thr	Ser 440	Ile	His	Ser	Phe	Ser 445	Ser	Ala	Phe	
ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggt	ttc	ggc	ggg	cgc	atg	1392
Leu	Phe 450	Ser	Ile	Glu	Val	Gln 455	Val	Thr	Ile	Gly	Phe 460	Gly	Gly	Arg	Met	
gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	1440
Val	Thr	Glu	Glu	Cys	Pro 470	Leu	Ala	Ile	Leu	Ile 475	Leu	Ile	Val	Gln	Asn 480	
atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	1488
Ile	Val	Gly	Leu	Met 485	Ile	Asn	Ala	Ile	Met 490	Leu	Gly	Cys	Ile	Phe 495	Met	
aaa	acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	1536
Lys	Thr	Ala	Gln 500	Ala	His	Arg	Arg	Ala 505	Glu	Thr	Leu	Ile	Phe 510	Ser	Lys	
cat	gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	1584
His	Ala	Val 515	Ile	Thr	Leu	Arg	His 520	Gly	Arg	Leu	Cys	Phe 525	Met	Leu	Arg	
gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	1632

Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met
 50 55 60
 Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu
 65 70 75 80
 Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe
 85 90 95
 Gly Asn Thr Met Cys Gln Leu Leu Thr Gly Leu Tyr Phe Ile Gly Phe
 100 105 110
 Phe Ser Gly Ile Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu
 115 120 125
 Ala Val Val His Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe
 130 135 140
 Gly Val Val Thr Ser Val Ile Thr Trp Val Val Ala Val Phe Ala Ser
 145 150 155 160
 Leu Pro Gly Ile Ile Phe Thr Arg Ser Gln Lys Glu Gly Leu His Tyr
 165 170 175
 Thr Cys Ser Ser His Phe Pro Tyr Ser Gln Tyr Gln Phe Trp Lys Asn
 180 185 190
 Phe Gln Thr Leu Lys Ile Val Ile Leu Gly Leu Val Leu Pro Leu Leu
 195 200 205
 Val Met Val Ile Cys Tyr Ser Gly Ile Leu Lys Thr Leu Leu Arg Cys
 210 215 220
 Arg Asn Glu Lys Lys Arg His Arg Ala Val Arg Leu Ile Phe Thr Ile
 225 230 235 240
 Met Ile Val Tyr Phe Leu Phe Trp Ala Pro Tyr Asn Ile Val Leu Leu
 245 250 255
 Leu Asn Thr Phe Gln Glu Phe Phe Gly Leu Asn Asn Cys Ser Ser Ser
 260 265 270
 Asn Arg Leu Asp Gln Ala Met Gln Val Thr Glu Thr Leu Gly Met Thr
 275 280 285
 His Cys Cys Ile Asn Pro Ile Ile Tyr Ala Phe Val Gly Glu Lys Phe
 290 295 300
 Arg Asn Tyr Leu Leu Val Phe Phe Gln Lys His Ile Ala Lys Arg Phe
 305 310 315 320

Cys Lys Cys Cys Ser₃₂₅ Ile Phe Gln Gln Glu⁴⁴²₃₃₀ Ala Pro Glu Arg Ala₃₃₅ Ser
 Ser Val Tyr Thr₃₄₀ Arg Ser Thr Gly Glu₃₄₅ Gln Glu Ile Ser Val₃₅₀ Gly Leu
 Tyr Arg Thr₃₅₅ Arg Glu Arg Arg Ala₃₆₀ Arg Phe Val Ser Lys₃₆₅ Lys Gly Asn
 Cys Asn₃₇₀ Val Ala His Lys Asn₃₇₅ Ile Arg Glu Gln Gly₃₈₀ Arg Phe Leu Gln
 Asp Val₃₈₅ Phe Thr Thr Leu₃₉₀ Val Asp Leu Lys Trp₃₉₅ Pro His Thr Leu₄₀₀
 Ile Phe Thr Met Ser₄₀₅ Phe Leu Cys Ser Trp₄₁₀ Leu Leu Phe Ala Met₄₁₅ Val
 Trp Trp Leu Ile₄₂₀ Ala Phe Ala His Gly₄₂₅ Asp Leu Ala Pro Gly₄₃₀ Glu Gly
 Thr Asn Val₄₃₅ Pro Cys Val Thr Ser₄₄₀ Ile His Ser Phe Ser₄₄₅ Ser Ala Phe
 Leu Phe₄₅₀ Ser Ile Glu Val Gln₄₅₅ Val Thr Ile Gly Phe₄₆₀ Gly Gly Arg Met
 Val Thr Glu Glu Cys Pro₄₇₀ Leu Ala Ile Leu Ile₄₇₅ Leu Ile Val Gln Asn₄₈₀
 Ile Val Gly Leu Met₄₈₅ Ile Asn Ala Ile Met₄₉₀ Leu Gly Cys Ile Phe₄₉₅ Met
 Lys Thr Ala Gln₅₀₀ Ala His Arg Arg Ala₅₀₅ Glu Thr Leu Ile Phe₅₁₀ Ser Lys
 His Ala Val₅₁₅ Ile Thr Leu Arg His₅₂₀ Gly Arg Leu Cys Phe₅₂₅ Met Leu Arg
 Val Gly₅₃₀ Asp Leu Arg Lys Ser₅₃₅ Met Ile Ile Ser Ala₅₄₀ Thr Ile His Met
 Gln Val Val Arg Lys Thr₅₅₀ Thr Ser Pro Glu Gly₅₅₅ Glu Val Val Pro Leu₅₆₀
 His Gln Val Asp Ile₅₆₅ Pro Met Glu Asn Gly₅₇₀ Val Gly Gly Asn Gly₅₇₅ Ile
 Phe Leu Val Ala₅₈₀ Pro Leu Ile Ile Tyr₅₈₅ His Val Ile Asp Ser₅₉₀ Asn Ser
 Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu

443

595 600 605

Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr
610 615 620

Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln
625 630 635 640

Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp
645 650 655

Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr
660 665 670

Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu
675 680 685

Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys
690 695 700

Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu Ser
705 710 715

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<220>
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Met Asp Tyr Gln Val Ser Ser Pro Ile Tyr Asp Ile Asn Tyr Tyr Thr
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tcg gag ccc tgc caa aaa atc aat gtg aag caa atc gca gcc cgc ctc 96
Ser Glu Pro Cys Gln Lys Ile Asn Val Lys Gln Ile Ala Ala Arg Leu
20 25 30

ctg cct ccg ctc tac tca ctg gtg ttc atc ttt ggt ttt gtg ggc aac 144
Leu Pro Pro Leu Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn
35 40 45

atg ctg gtc atc ctc atc ctg ata aac tgc aaa agg ctg aag agc atg 192
Met Leu Val Ile Leu Ile Leu Ile Asn Cys Lys Arg Leu Lys Ser Met
50 55 60

act gac atc tac ctg ctc aac ctg gcc atc tct gac ctg ttt ttc ctt 240
Thr Asp Ile Tyr Leu Leu Asn Leu Ala Ile Ser Asp Leu Phe Phe Leu
65 70 75 80

ctt act gtc ccc ttc tgg gct cac tat gct gcc gcc cag tgg gac ttt 288
Leu Thr Val Pro Phe Trp Ala His Tyr Ala Ala Ala Gln Trp Asp Phe
85 90 95

444																
gga Gly	aat Asn	aca Thr	atg Met 100	tgt Cys	caa Gln	ctc Leu	ttg Leu	aca Thr 105	ggg Gly	ctc Leu	tat Tyr	ttt Phe	ata Ile 110	ggc Gly	ttc Phe	336
ttc Phe	tct Ser	gga Gly 115	atc Ile	ttc Phe	ttc Phe	atc Ile	atc Ile 120	ctc Leu	ctg Leu	aca Thr	atc Ile	gat Asp 125	agg Arg	tac Tyr	ctg Leu	384
gct Ala	gtc Val 130	gtc Val	cat His	gct Ala	gtg Val	ttt Phe 135	gct Ala	tta Leu	aaa Lys	gcc Ala	agg Arg 140	acg Thr	gtc Val	acc Thr	ttt Phe	432
ggg Gly 145	gtg Val	gtg Val	aca Thr	agt Ser	gtg Val 150	atc Ile	act Thr	tgg Trp	gtg Val	gtg Val 155	gct Ala	gtg Val	ttt Phe	gcg Ala	tct Ser 160	480
ctc Leu	cca Pro	gga Gly	atc Ile	atc Ile 165	ttt Phe	acc Thr	aga Arg	tct Ser	caa Gln 170	aaa Lys	gaa Glu	ggg Gly	ctt Leu	cat His 175	tac Tyr	528
acc Thr	tgc Cys	agc Ser	tct Ser 180	cat His	ttt Phe	cca Pro	tac Tyr	agt Ser 185	cag Gln	tat Tyr	caa Gln	ttc Phe	tgg Trp 190	aag Lys	aat Asn	576
ttc Phe	cag Gln	aca Thr 195	tta Leu	aag Lys	ata Ile	gtc Val	atc Ile 200	ttg Leu	ggg Gly	ctg Leu	gtc Val	ctg Leu 205	ccg Pro	ctg Leu	ctt Leu	624
gtc Val	atg Met 210	gtc Val	atc Ile	tgc Cys	tac Tyr	tgc Ser 215	gga Gly	atc Ile	cta Leu	aaa Lys	act Thr 220	ctg Leu	ctt Leu	cgg Arg	tgt Cys	672
cga Arg 225	aat Asn	gag Glu	aag Lys	aag Lys	agg Arg 230	cac His	agg Arg	gct Ala	gtg Val	agg Arg 235	ctt Leu	atc Ile	ttc Phe	acc Thr	atc Ile 240	720
atg Met	att Ile	gtt Val	tat Tyr	ttt Phe 245	ctc Leu	ttc Phe	tgg Trp	gct Ala	ccc Pro 250	tac Tyr	aac Asn	att Ile	gtc Val	ctt Leu 255	ctc Leu	768
ctg Leu	aac Asn	acc Thr	ttc Phe 260	cag Gln	gaa Glu	ttc Phe	ttt Phe	ggc Gly 265	ctg Leu	aat Asn	aat Asn	tgc Cys	agt Ser 270	agc Ser	tct Ser	816
aac Asn	agg Arg	ttg Leu 275	gac Asp	caa Gln	gct Ala	atg Met	cag Gln 280	gtg Val	aca Thr	gag Glu	act Thr	ctt Leu 285	ggg Gly	atg Met	acg Thr	864
cac His	tgc Cys 290	tgc Cys	atc Ile	aac Asn	ccc Pro	atc Ile 295	atc Ile	tat Tyr	gcc Ala	ttt Phe	gtc Val 300	ggg Gly	gag Glu	aag Lys	ttc Phe	912
aga Arg 305	aac Asn	tac Tyr	ctc Leu	tta Leu	gtc Val 310	ttc Phe	ttc Phe	caa Gln	aag Lys	cac His 315	att Ile	gcc Ala	aaa Lys	cgc Arg	ttc Phe 320	960
tgc Cys	aaa Lys	tgc Cys	tgt Cys	tct Ser 325	att Ile	ttc Phe	cag Gln	caa Gln	gag Glu 330	gct Ala	ccc Pro	gag Glu	cga Arg	gca Ala 335	agc Ser	1008
tca Ser	gtt Val	tac Tyr	acc Thr 340	cga Arg	tcc Ser	act Thr	ggg Gly	gag Glu 345	cag Gln	gaa Glu	ata Ile	tct Ser	gtg Val 350	ggc Gly	ttg Leu	1056
tac Tyr	cgt Arg	act Thr 355	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 360	cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 365	aaa Lys	ggc Gly	aac Asn	1104
tgc	aac	gtc	gcc	cac	aag	aac	att	cga	gag	cag	ggc	cgc	ttc	ctg	cag	1152

Cys	Asn	Val	Ala	His	Lys	Asn	Ile	Arg	Glu	Gln	Gly	Arg	Phe	Leu	Gln	
	370					375				445	380					
gat	gtg	ttc	acc	acg	ctg	gtg	gac	ctc	aaa	tgg	cca	cac	act	ctg	ctc	1200
Asp	Val	Phe	Thr	Thr	Leu	Val	Asp	Leu	Lys	Trp	Pro	His	Thr	Leu	Leu	
385					390					395					400	
att	ttc	acc	atg	tcc	ttc	ctg	tgc	agc	tgg	ctg	ctc	ttt	gcc	atg	gtc	1248
Ile	Phe	Thr	Met	Ser	Phe	Leu	Cys	Ser	Trp	Leu	Leu	Phe	Ala	Met	Val	
				405					410					415		
tgg	tgg	ctc	atc	gcc	ttc	gcc	cac	ggc	gac	ctg	gcc	ccc	gga	gag	ggc	1296
Trp	Trp	Leu	Ile	Ala	Phe	Ala	His	Gly	Asp	Leu	Ala	Pro	Gly	Glu	Gly	
			420					425					430			
acc	aat	gtg	ccc	tgc	gtc	aca	agc	atc	cac	tcc	ttt	tca	tct	gcc	ttc	1344
Thr	Asn	Val	Pro	Cys	Val	Thr	Ser	Ile	His	Ser	Phe	Ser	Ser	Ala	Phe	
		435					440					445				
ctt	ttc	tcc	atc	gag	gtc	cag	gtg	acc	att	ggc	ttc	ggc	ggg	cgc	atg	1392
Leu	Phe	Ser	Ile	Glu	Val	Gln	Val	Thr	Ile	Gly	Phe	Gly	Gly	Arg	Met	
	450					455					460					
gtg	aca	gag	gaa	tgt	ccc	ctg	gcc	atc	ctc	att	ctc	att	gtg	cag	aat	1440
Val	Thr	Glu	Glu	Cys	Pro	Leu	Ala	Ile	Leu	Ile	Leu	Ile	Val	Gln	Asn	
465					470					475					480	
atc	gtc	ggg	ctg	atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	1488
Ile	Val	Gly	Leu	Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	
				485					490					495		
aaa	acg	gcc	cag	gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	1536
Lys	Thr	Ala	Gln	Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	
			500					505					510			
cat	gct	gtg	atc	acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	1584
His	Ala	Val	Ile	Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	
		515					520					525				
gta	ggg	gac	ctc	cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	1632
Val	Gly	Asp	Leu	Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	
	530					535					540					
cag	gtg	gtg	cgc	aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	1680
Gln	Val	Val	Arg	Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	
545					550					555					560	
cac	cag	gta	gac	atc	ccc	atg	gag	aat	ggc	gtg	ggc	ggc	aac	ggc	atc	1728
His	Gln	Val	Asp	Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	
				565					570					575		
ttc	ctg	gtg	gcc	cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	1776
Phe	Leu	Val	Ala	Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	
			580					585					590			
ccg	ctc	tac	gac	ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	1824
Pro	Leu	Tyr	Asp	Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	
		595					600					605				
gag	atc	att	gtc	atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	1872
Glu	Ile	Ile	Val	Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	
	610					615					620					
acc	cag	gcc	cgc	acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	1920
Thr	Gln	Ala	Arg	Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	
625					630					635					640	
cgc	ttt	gtc	ccc	att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	1968
Arg	Phe	Val	Pro	Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	

																446																	655																
tac	tcc	aaa	ttt	ggt	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca		2016																																
Tyr	Ser	Lys	Phe	Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr																																		
			660					665					670																																				
gcc	cgc	cag	ctt	gat	gag	gac	cgc	agt									2043																																
Ala	Arg	Gln	Leu	Asp	Glu	Asp	Arg	Ser																																									
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Met	Asp	Tyr	Gln	Val	Ser	Ser	Pro	Ile	Tyr	Asp	Ile	Asn	Tyr	Tyr	Thr																																		
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Ser	Glu	Pro	Cys	Gln	Lys	Ile	Asn	Val	Lys	Gln	Ile	Ala	Ala	Arg	Leu																																		
			20					25					30																																				
Leu	Pro	Pro	Leu	Tyr	Ser	Leu	Val	Phe	Ile	Phe	Gly	Phe	Val	Gly	Asn																																		
		35					40					45																																					
Met	Leu	Val	Ile	Leu	Ile	Leu	Ile	Asn	Cys	Lys	Arg	Leu	Lys	Ser	Met																																		
	50					55					60																																						
Thr	Asp	Ile	Tyr	Leu	Leu	Asn	Leu	Ala	Ile	Ser	Asp	Leu	Phe	Phe	Leu																																		
65				70						75					80																																		
Leu	Thr	Val	Pro	Phe	Trp	Ala	His	Tyr	Ala	Ala	Ala	Gln	Trp	Asp	Phe																																		
				85					90					95																																			
Gly	Asn	Thr	Met	Cys	Gln	Leu	Leu	Thr	Gly	Leu	Tyr	Phe	Ile	Gly	Phe																																		
			100					105					110																																				
Phe	Ser	Gly	Ile	Phe	Phe	Ile	Ile	Leu	Leu	Thr	Ile	Asp	Arg	Tyr	Leu																																		
		115					120					125																																					
Ala	Val	Val	His	Ala	Val	Phe	Ala	Leu	Lys	Ala	Arg	Thr	Val	Thr	Phe																																		
	130					135					140																																						
Gly	Val	Val	Thr	Ser	Val	Ile	Thr	Trp	Val	Val	Ala	Val	Phe	Ala	Ser																																		
145					150					155					160																																		
Leu	Pro	Gly	Ile	Ile	Phe	Thr	Arg	Ser	Gln	Lys	Glu	Gly	Leu	His	Tyr																																		
				165					170					175																																			
Thr	Cys	Ser	Ser	His	Phe	Pro	Tyr	Ser	Gln	Tyr	Gln	Phe	Trp	Lys	Asn																																		
			180					185					190																																				

Phe Gln Thr₁₉₅ Leu Lys Ile Val Ile₂₀₀ Leu Gly⁴⁴⁷ Leu Val₂₀₅ Leu Pro Leu Leu
 Val Met₂₁₀ Val Ile Cys Tyr Ser₂₁₅ Gly Ile Leu Lys Thr₂₂₀ Leu Leu Arg Cys
 Arg₂₂₅ Asn Glu Lys Lys Arg₂₃₀ His Arg Ala Val Arg₂₃₅ Leu Ile Phe Thr Ile₂₄₀
 Met Ile Val Tyr Phe₂₄₅ Leu Phe Trp Ala Pro₂₅₀ Tyr Asn Ile Val₂₅₅ Leu Leu
 Leu Asn Thr Phe₂₆₀ Gln Glu Phe Phe Gly₂₆₅ Leu Asn Asn Cys Ser₂₇₀ Ser Ser
 Asn Arg Leu₂₇₅ Asp Gln Ala Met Gln₂₈₀ Val Thr Glu Thr Leu₂₈₅ Gly Met Thr
 His Cys₂₉₀ Cys Ile Asn Pro Ile₂₉₅ Ile Tyr Ala Phe Val₃₀₀ Gly Glu Lys Phe
 Arg₃₀₅ Asn Tyr Leu Leu Val₃₁₀ Phe Phe Gln Lys His₃₁₅ Ile Ala Lys Arg Phe₃₂₀
 Cys Lys Cys Cys Ser₃₂₅ Ile Phe Gln Gln Glu₃₃₀ Ala Pro Glu Arg Ala₃₃₅ Ser
 Ser Val Tyr Thr₃₄₀ Arg Ser Thr Gly Glu₃₄₅ Gln Glu Ile Ser Val₃₅₀ Gly Leu
 Tyr Arg Thr₃₅₅ Arg Glu Arg Arg Ala₃₆₀ Arg Phe Val Ser Lys₃₆₅ Lys Gly Asn
 Cys Asn Val Ala His Lys Asn₃₇₅ Ile Arg Glu Gln Gly₃₈₀ Arg Phe Leu Gln
 Asp Val₃₈₅ Phe Thr Thr Leu₃₉₀ Val Asp Leu Lys Trp₃₉₅ Pro His Thr Leu Leu₄₀₀
 Ile Phe Thr Met Ser₄₀₅ Phe Leu Cys Ser Trp₄₁₀ Leu Leu Phe Ala Met₄₁₅ Val
 Trp Trp Leu Ile₄₂₀ Ala Phe Ala His Gly₄₂₅ Asp Leu Ala Pro Gly₄₃₀ Glu Gly
 Thr Asn Val₄₃₅ Pro Cys Val Thr Ser₄₄₀ Ile His Ser Phe Ser₄₄₅ Ser Ala Phe
 Leu Phe₄₅₀ Ser Ile Glu Val Gln₄₅₅ Val Thr Ile Gly Phe₄₆₀ Gly Gly Arg Met
 Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn

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

tac cca tac gat gta cca gat tac gcc
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
 1 5

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<220>
 <223> Synthetic Construct

<400> 158

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
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 Arg Arg Arg Arg Arg
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<400> 160

Arg Arg Arg Arg Arg
 1 5

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<220>
 <221> CDS
 <222> (1)..(18)

<400> 161
 cat cac cat cac cat cac
 His His His His His His
 1 5

<210> 162
 <211> 6
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 162

His His His His His His
 1 5

<210> 163
 <211> 30
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(30)

<400> 163
 gaa caa aaa cta ata tca gaa gag gac ctc
 Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
 1 5 10

30

<210> 164
 <211> 10
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 164

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
 1 5 10

<210> 165
 <211> 24
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(24)

<400> 165
 tgg tca cac cca caa ttc gaa aaa
 Trp Ser His Pro Gln Phe Glu Lys
 1 5

24

<210> 166

<211> 8
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 166

Trp Ser His Pro Gln Phe Glu Lys
 1 5

<210> 167
 <211> 24
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(24)

<400> 167
 gac tac aaa gac gat gac gat aag
 Asp Tyr Lys Asp Asp Asp Asp Lys
 1 5

24

<210> 168
 <211> 8
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 168

Asp Tyr Lys Asp Asp Asp Asp Lys
 1 5

<210> 169
 <211> 45
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(45)

<400> 169
 aaa gaa aca gca gcc gcg aaa ttc gaa cga caa cac atg gac tca
 Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 1 5 10 15

45

<210> 170
 <211> 15
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 170

Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 1 5 10 15

<210> 171
 <211> 57
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(57)

<400> 171
 aaa gac cac cta ata cac aac gta cac aaa gaa ttc cat gca cac gcg 48
 Lys Asp His Leu Ile His Asn Val His Lys Glu Phe His Ala His Ala
 1 5 10 15

cat aat aag 57
 His Asn Lys

<210> 172
 <211> 19
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 172

Lys Asp His Leu Ile His Asn Val His Lys Glu Phe His Ala His Ala
 1 5 10 15

His Asn Lys

<210> 173
 <211> 66
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(66)

<400> 173
 gac tac aaa gac cac gac gga gac tac aaa gac cat gac ata gat tat 48
 Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr
 1 5 10 15

aag gac gat gac gat aaa
 Lys Asp Asp Asp Asp Lys
 20

<210> 174
 <211> 22
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 174

Asp Tyr Lys Asp His Asp Gly Asp Tyr Lys Asp His Asp Ile Asp Tyr
 1 5 10 15

Lys Asp Asp Asp Asp Lys
 20

<210> 175
 <211> 78
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(78)

<400> 175
 aaa cga cgg tgg aaa aag aac ttc ata gca gta tca gcc gcg aac cga
 Lys Arg Arg Trp Lys Lys Asn Phe Ile Ala Val Ser Ala Ala Asn Arg
 1 5 10 15 48

ttc aaa aag atc tca tcc tcg gga gca tta
 Phe Lys Lys Ile Ser Ser Ser Gly Ala Leu
 20 25 78

<210> 176
 <211> 26
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 176

Lys Arg Arg Trp Lys Lys Asn Phe Ile Ala Val Ser Ala Ala Asn Arg
 1 5 10 15

Phe Lys Lys Ile Ser Ser Ser Gly Ala Leu
 20 25

<210> 177
 <211> 87
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(87)

<400> 177
 cga gta gga ata tac cta tgc ata aaa cta aaa cac aca aaa aaa cga 48
 Arg Val Gly Ile Tyr Leu Cys Ile Lys Leu Lys His Thr Lys Lys Arg
 1 5 10 15
 caa ata tac aca gac ata gaa atg aac cga cta gga aaa 87
 Gln Ile Tyr Thr Asp Ile Glu Met Asn Arg Leu Gly Lys
 20 25

<210> 178
 <211> 29
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 178
 Arg Val Gly Ile Tyr Leu Cys Ile Lys Leu Lys His Thr Lys Lys Arg
 1 5 10 15
 Gln Ile Tyr Thr Asp Ile Glu Met Asn Arg Leu Gly Lys
 20 25

<210> 179
 <211> 114
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(114)

<400> 179
 atg gac gaa aaa aca acc gga tgg cga ggg ggt cac gta gtg gaa ggc 48
 Met Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val Glu Gly
 1 5 10 15
 cta gca gga gaa cta gag caa ctc cga gcg cgt ctt gaa cac cat cca 96
 Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His His Pro
 20 25 30
 caa gga cag cga gaa cct 114
 Gln Gly Gln Arg Glu Pro
 35

<210> 180
 <211> 38
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>

<223> Synthetic Construct

<400> 180

Met Asp Glu Lys Thr Thr Gly Trp Arg Gly Gly His Val Val Glu Gly
1 5 10 15

Leu Ala Gly Glu Leu Glu Gln Leu Arg Ala Arg Leu Glu His His Pro
20 25 30

Gln Gly Gln Arg Glu Pro
35

<210> 181

<211> 153

<212> DNA

<213> ARTIFICIAL SEQUENCE

<220>

<223> hybrid sequence

<220>

<221> CDS

<222> (1)..(153)

<400> 181

aca aac cca gga gta tca gca tgg caa gta aac aca gca tac aca gcc 48
Thr Asn Pro Gly Val Ser Ala Trp Gln Val Asn Thr Ala Tyr Thr Ala
1 5 10 15

gga caa cta gtc aca tac aac gga aaa aca tac aaa tgc cta caa cca 96
Gly Gln Leu Val Thr Tyr Asn Gly Lys Thr Tyr Lys Cys Leu Gln Pro
20 25 30

cac aca tca cta gca gga tgg gaa cca tca aac gta cca gca cta tgg 144
His Thr Ser Leu Ala Gly Trp Glu Pro Ser Asn Val Pro Ala Leu Trp
35 40 45

caa cta caa 153
Gln Leu Gln
50

<210> 182

<211> 51

<212> PRT

<213> ARTIFICIAL SEQUENCE

<220>

<223> Synthetic Construct

<400> 182

Thr Asn Pro Gly Val Ser Ala Trp Gln Val Asn Thr Ala Tyr Thr Ala
1 5 10 15

Gly Gln Leu Val Thr Tyr Asn Gly Lys Thr Tyr Lys Cys Leu Gln Pro
20 25 30

His Thr Ser Leu Ala Gly Trp Glu Pro Ser Asn Val Pro Ala Leu Trp
35 40 45

Gln Leu Gln
50

<210> 183
<211> 621
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(621)

<400> 183	
gtg aag ctt atc tat ttc aac gga cgt gga cgt gct gaa ccg atc cgc	48
Val Lys Leu Ile Tyr Phe Asn Gly Arg Gly Arg Ala Glu Pro Ile Arg	
1 5 10 15	
atg att ctt gtg gca gcg gga gta gaa ttc gaa gat gaa agg att gaa	96
Met Ile Leu Val Ala Ala Gly Val Glu Phe Glu Asp Glu Arg Ile Glu	
20 25 30	
ttc caa gat tgg cct aaa atc aaa cca acc ata cct gga gga aga ttg	144
Phe Gln Asp Trp Pro Lys Ile Lys Pro Thr Ile Pro Gly Gly Arg Leu	
35 40 45	
cct atc gtg aaa atc aca gac aaa agg ggg gat gtt aaa aca atg tca	192
Pro Ile Val Lys Ile Thr Asp Lys Arg Gly Asp Val Lys Thr Met Ser	
50 55 60	
gag agt ttg gct att gca cga ttt ata gcg cga aaa cac aac atg atg	240
Glu Ser Leu Ala Ile Ala Arg Phe Ile Ala Arg Lys His Asn Met Met	
65 70 75 80	
ggc gat aca gac gat gag tat tat atc ata gag aag atg att ggc caa	288
Gly Asp Thr Asp Asp Glu Tyr Tyr Ile Ile Glu Lys Met Ile Gly Gln	
85 90 95	
gtc gaa gat gtt gaa agt gaa tac cat aag act ctc ata aag cca cca	336
Val Glu Asp Val Glu Ser Glu Tyr His Lys Thr Leu Ile Lys Pro Pro	
100 105 110	
gaa gaa aaa gag aaa atc tcc aag gag ata ttg aac ggt aaa gtt ccc	384
Glu Glu Lys Glu Lys Ile Ser Lys Glu Ile Leu Asn Gly Lys Val Pro	
115 120 125	
att ctt ctc caa gca att tgt gaa acc tta aaa gag tct aca ggt aat	432
Ile Leu Leu Gln Ala Ile Cys Glu Thr Leu Lys Glu Ser Thr Gly Asn	
130 135 140	
ctg act gtc gga gat aag gtc act ctg gct gat gta gtt ctg att gct	480
Leu Thr Val Gly Asp Lys Val Thr Leu Ala Asp Val Val Leu Ile Ala	
145 150 155 160	
tcc att gat cat ata act gat ttg gat aag gaa ttt tta act ggc aag	528
Ser Ile Asp His Ile Thr Asp Leu Asp Lys Glu Phe Leu Thr Gly Lys	
165 170 175	
tat cct gag att cac aaa cat cgt aaa cat cta ttg gcc act tca cca	576
Tyr Pro Glu Ile His Lys His Arg Lys His Leu Leu Ala Thr Ser Pro	
180 185 190	
aaa ctg gcg aaa tac tta tca gag aga cat gca acg gca ttt taa	621
Lys Leu Ala Lys Tyr Leu Ser Glu Arg His Ala Thr Ala Phe	
195 200 205	

<210> 184
 <211> 206
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 184

Val Lys Leu Ile Tyr Phe Asn Gly Arg Gly Arg Ala Glu Pro Ile Arg
 1 5 10 15

Met Ile Leu Val Ala Ala Gly Val Glu Phe Glu Asp Glu Arg Ile Glu
 20 25 30

Phe Gln Asp Trp Pro Lys Ile Lys Pro Thr Ile Pro Gly Gly Arg Leu
 35 40 45

Pro Ile Val Lys Ile Thr Asp Lys Arg Gly Asp Val Lys Thr Met Ser
 50 55 60

Glu Ser Leu Ala Ile Ala Arg Phe Ile Ala Arg Lys His Asn Met Met
 65 70 75 80

Gly Asp Thr Asp Asp Glu Tyr Tyr Ile Ile Glu Lys Met Ile Gly Gln
 85 90 95

Val Glu Asp Val Glu Ser Glu Tyr His Lys Thr Leu Ile Lys Pro Pro
 100 105 110

Glu Glu Lys Glu Lys Ile Ser Lys Glu Ile Leu Asn Gly Lys Val Pro
 115 120 125

Ile Leu Leu Gln Ala Ile Cys Glu Thr Leu Lys Glu Ser Thr Gly Asn
 130 135 140

Leu Thr Val Gly Asp Lys Val Thr Leu Ala Asp Val Val Leu Ile Ala
 145 150 155 160

Ser Ile Asp His Ile Thr Asp Leu Asp Lys Glu Phe Leu Thr Gly Lys
 165 170 175

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

Lys Leu Ala Lys Tyr Leu Ser Glu Arg His Ala Thr Ala Phe
 195 200 205

<210> 185
 <211> 1191
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(1191)

<400> 185
 atg aaa ata aaa aca ggt gca cgc atc ctc gca tta tcc gca tta acg 48
 Met Lys Ile Lys Thr Gly Ala Arg Ile Leu Ala Leu Ser Ala Leu Thr
 1 5 10 15
 acg atg atg ttt tcc gcc tcg gct ctc gcc aaa atc gaa gaa ggt aaa 96
 Thr Met Met Phe Ser Ala Ser Ala Leu Ala Lys Ile Glu Glu Gly Lys
 20 25 30
 ctg gta atc tgg att aac ggc gat aaa ggc tat aac ggt ctc gct gaa 144
 Leu Val Ile Trp Ile Asn Gly Asp Lys Gly Tyr Asn Gly Leu Ala Glu
 35 40 45
 gtc ggt aag aaa ttc gag aaa gat acc gga att aaa gtc acc gtt gag 192
 Val Gly Lys Lys Phe Glu Lys Asp Thr Gly Ile Lys Val Thr Val Glu
 50 55 60
 cat ccg gat aaa ctg gaa gag aaa ttc cca cag gtt gcg gca act ggc 240
 His Pro Asp Lys Leu Glu Glu Lys Phe Pro Gln Val Ala Ala Thr Gly
 65 70 75 80
 gat ggc cct gac att atc ttc tgg gca cac gac cgc ttt ggt ggc tac 288
 Asp Gly Pro Asp Ile Ile Phe Trp Ala His Asp Arg Phe Gly Gly Tyr
 85 90 95
 gct caa tct ggc ctg ttg gct gaa atc acc ccg gac aaa gcg ttc cag 336
 Ala Gln Ser Gly Leu Leu Ala Glu Ile Thr Pro Asp Lys Ala Phe Gln
 100 105 110
 gac aag ctg tat ccg ttt acc tgg gat gcc gta cgt tac aac ggc aag 384
 Asp Lys Leu Tyr Pro Phe Thr Trp Asp Ala Val Arg Tyr Asn Gly Lys
 115 120 125
 ctg att gct tac ccg atc gct gtt gaa gcg tta tcg ctg att tat aac 432
 Leu Ile Ala Tyr Pro Ile Ala Val Glu Ala Leu Ser Leu Ile Tyr Asn
 130 135 140
 aaa gat ctg ctg ccg aac ccg cca aaa acc tgg gaa gag atc ccg gcg 480
 Lys Asp Leu Leu Pro Asn Pro Pro Lys Thr Trp Glu Glu Ile Pro Ala
 145 150 155 160
 ctg gat aaa gaa ctg aaa gcg aaa ggt aag agc gcg ctg atg ttc aac 528
 Leu Asp Lys Glu Leu Lys Ala Lys Gly Lys Ser Ala Leu Met Phe Asn
 165 170 175
 ctg caa gaa ccg tac ttc acc tgg ccg ctg att gct gct gac ggg ggt 576
 Leu Gln Glu Pro Tyr Phe Thr Trp Pro Leu Ile Ala Ala Asp Gly Gly
 180 185 190
 tat gcg ttc aag tat gaa aac ggc aag tac gac att aaa gac gtg ggc 624
 Tyr Ala Phe Lys Tyr Glu Asn Gly Lys Tyr Asp Ile Lys Asp Val Gly
 195 200 205
 gtg gat aac gct ggc gcg aaa gcg ggt ctg acc ttc ctg gtt gac ctg 672
 Val Asp Asn Ala Gly Ala Lys Ala Gly Leu Thr Phe Leu Val Asp Leu
 210 215 220
 att aaa aac aaa cac atg aat gca gac acc gat tac tcc atc gca gaa 720
 Ile Lys Asn Lys His Met Asn Ala Asp Thr Asp Tyr Ser Ile Ala Glu
 225 230 235 240

459

gct Ala	gcc Ala	ttt Phe	aat Asn	aaa Lys 245	ggc Gly	gaa Glu	aca Thr	gcg Ala	atg Met 250	acc Thr	atc Ile	aac Asn	ggc Gly	ccg Pro 255	tgg Trp	768
gca Ala	tgg Trp	tcc Ser	aac Asn 260	atc Ile	gac Asp	acc Thr	agc Ser	aaa Lys 265	gtg Val	aat Asn	tat Tyr	ggg Gly	gta Val 270	acg Thr	gta Val	816
ctg Leu	ccg Pro	acc Thr 275	ttc Phe	aag Lys	ggg Gly	caa Gln	cca Pro 280	tcc Ser	aaa Lys	ccg Pro	ttc Phe	gtt Val 285	ggc Gly	gtg Val	ctg Leu	864
agc Ser	gca Ala 290	ggg Gly	att Ile	aac Asn	gcc Ala	gcc Ala 295	agt Ser	ccg Pro	aac Asn	aaa Lys	gag Glu 300	ctg Leu	gcg Ala	aaa Lys	gag Glu	912
ttc Phe 305	ctc Leu	gaa Glu	aac Asn	tat Tyr	ctg Leu 310	ctg Leu	act Thr	gat Asp	gaa Glu	ggg Gly 315	ctg Leu	gaa Glu	gcg Ala	gtt Val	aat Asn 320	960
aaa Lys	gac Asp	aaa Lys	ccg Pro	ctg Leu 325	ggg Gly	gcc Ala	gta Val	gcg Ala	ctg Leu 330	aag Lys	tct Ser	tac Tyr	gag Glu	gaa Glu 335	gag Glu	1008
ttg Leu	gcg Ala	aaa Lys	gat Asp 340	cca Pro	cgt Arg	att Ile	gcc Ala	gcc Ala 345	acc Thr	atg Met	gaa Glu	aac Asn	gcc Ala 350	cag Gln	aaa Lys	1056
ggg Gly	gaa Glu	atc Ile 355	atg Met	ccg Pro	aac Asn	atc Ile	ccg Pro 360	cag Gln	atg Met	tcc Ser	gct Ala	ttc Phe 365	tgg Trp	tat Tyr	gcc Ala	1104
gtg Val	cgt Arg 370	act Thr	gcg Ala	gtg Val	atc Ile	aac Asn 375	gcc Ala	gcc Ala	agc Ser	ggg Gly	cgt Arg 380	cag Gln	act Thr	gtc Val	gat Asp	1152
gaa Glu 385	gcc Ala	ctg Leu	aaa Lys	gac Asp	gcg Ala 390	cag Gln	act Thr	cgt Arg	atc Ile	acc Thr 395	aag Lys	taa				1191

<210> 186
 <211> 396
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 186

Met Lys Ile Lys Thr Gly Ala Arg Ile Leu Ala Leu Ser Ala Leu Thr
 1 5 10 15

Thr Met Met Phe Ser Ala Ser Ala Leu Ala Lys Ile Glu Glu Gly Lys
 20 25 30

Leu Val Ile Trp Ile Asn Gly Asp Lys Gly Tyr Asn Gly Leu Ala Glu
 35 40 45

Val Gly Lys Lys Phe Glu Lys Asp Thr Gly Ile Lys Val Thr Val Glu
 50 55 60

His Pro Asp Lys Leu Glu Glu Lys Phe Pro Gln Val Ala Ala Thr Gly
 65 70 75 80

Asp Gly Pro Asp Ile Ile Phe Trp Ala His Asp Arg Phe Gly Gly Tyr
 85 90 95
 Ala Gln Ser Gly Leu Leu Ala Glu Ile Thr Pro Asp Lys Ala Phe Gln
 100 105 110
 Asp Lys Leu Tyr Pro Phe Thr Trp Asp Ala Val Arg Tyr Asn Gly Lys
 115 120 125
 Leu Ile Ala Tyr Pro Ile Ala Val Glu Ala Leu Ser Leu Ile Tyr Asn
 130 135 140
 Lys Asp Leu Leu Pro Asn Pro Pro Lys Thr Trp Glu Glu Ile Pro Ala
 145 150 155 160
 Leu Asp Lys Glu Leu Lys Ala Lys Gly Lys Ser Ala Leu Met Phe Asn
 165 170 175
 Leu Gln Glu Pro Tyr Phe Thr Trp Pro Leu Ile Ala Ala Asp Gly Gly
 180 185 190
 Tyr Ala Phe Lys Tyr Glu Asn Gly Lys Tyr Asp Ile Lys Asp Val Gly
 195 200 205
 Val Asp Asn Ala Gly Ala Lys Ala Gly Leu Thr Phe Leu Val Asp Leu
 210 215 220
 Ile Lys Asn Lys His Met Asn Ala Asp Thr Asp Tyr Ser Ile Ala Glu
 225 230 235 240
 Ala Ala Phe Asn Lys Gly Glu Thr Ala Met Thr Ile Asn Gly Pro Trp
 245 250 255
 Ala Trp Ser Asn Ile Asp Thr Ser Lys Val Asn Tyr Gly Val Thr Val
 260 265 270
 Leu Pro Thr Phe Lys Gly Gln Pro Ser Lys Pro Phe Val Gly Val Leu
 275 280 285
 Ser Ala Gly Ile Asn Ala Ala Ser Pro Asn Lys Glu Leu Ala Lys Glu
 290 295 300
 Phe Leu Glu Asn Tyr Leu Leu Thr Asp Glu Gly Leu Glu Ala Val Asn
 305 310 315 320
 Lys Asp Lys Pro Leu Gly Ala Val Ala Leu Lys Ser Tyr Glu Glu Glu
 325 330 335
 Leu Ala Lys Asp Pro Arg Ile Ala Ala Thr Met Glu Asn Ala Gln Lys
 340 345 350

Gly Glu Ile Met Pro Asn Ile Pro Gln Met Ser Ala Phe Trp Tyr Ala
 355 360 365

Val Arg Thr Ala Val Ile Asn Ala Ala Ser Gly Arg Gln Thr Val Asp
 370 375 380

Glu Ala Leu Lys Asp Ala Gln Thr Arg Ile Thr Lys
 385 390 395

<210> 187
 <211> 717
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(717)

<400> 187
 atg agt aaa gga gaa gaa ctt ttc act gga gtt gtc cca att ctt gtt 48
 Met Ser Lys Gly Glu Glu Leu Phe Thr Gly Val Val Pro Ile Leu Val
 1 5 10 15
 gaa tta gat ggt gat gtt aat ggg cac aaa ttt tct gtc agt gga gag 96
 Glu Leu Asp Gly Asp Val Asn Gly His Lys Phe Ser Val Ser Gly Glu
 20 25 30
 ggt gaa ggt gat gca aca tac gga aaa ctt acc ctt aaa ttt att tgc 144
 Gly Glu Gly Asp Ala Thr Tyr Gly Lys Leu Thr Leu Lys Phe Ile Cys
 35 40 45
 act act gga aaa cta cct gtt cca tgg cca aca ctt gtc act act ttc 192
 Thr Thr Gly Lys Leu Pro Val Pro Trp Pro Thr Leu Val Thr Thr Phe
 50 55 60
 tct tat ggt gtt caa tgc ttt tca aga tac cca gat cat atg aaa cag 240
 Ser Tyr Gly Val Gln Cys Phe Ser Arg Tyr Pro Asp His Met Lys Gln
 65 70 75 80
 cat gac ttt ttc aag agt gcc atg ccc gaa ggt tat gta cag gaa aga 288
 His Asp Phe Phe Lys Ser Ala Met Pro Glu Gly Tyr Val Gln Glu Arg
 85 90 95
 act ata ttt ttc aaa gat gac ggg aac tac aag aca cgt gct gaa gtc 336
 Thr Ile Phe Phe Lys Asp Asp Gly Asn Tyr Lys Thr Arg Ala Glu Val
 100 105 110
 aag ttt gaa ggt gat acc ctt gtt aat aga atc gag tta aaa ggt att 384
 Lys Phe Glu Gly Asp Thr Leu Val Asn Arg Ile Glu Leu Lys Gly Ile
 115 120 125
 gat ttt aaa gaa gat gga aac att ctt gga cac aaa ttg gaa tac aac 432
 Asp Phe Lys Glu Asp Gly Asn Ile Leu Gly His Lys Leu Glu Tyr Asn
 130 135 140
 tat aac tca cac aat gta tac atc atg gca gac aaa caa aag aat gga 480
 Tyr Asn Ser His Asn Val Tyr Ile Met Ala Asp Lys Gln Lys Asn Gly
 145 150 155 160
 atc aaa gtt aac ttc aaa att aga cac aac att gaa gat gga agc gtt 528
 Ile Lys Val Asn Phe Lys Ile Arg His Asn Ile Glu Asp Gly Ser Val

Ile Lys Val Asn Phe Lys Ile Arg His Asn⁴⁶³ Ile Glu Asp Gly Ser Val
 165 170 175
 Gln Leu Ala Asp His Tyr Gln Gln Asn Thr Pro Ile Gly Asp Gly Pro
 180 185 190
 Val Leu Leu Pro Asp Asn His Tyr Leu Ser Thr Gln Ser Ala Leu Ser
 195 200 205
 Lys Asp Pro Asn Glu Lys Arg Asp His Met Val Leu Leu Glu Phe Val
 210 215 220
 Thr Ala Ala Gly Ile Thr His Gly Met Asp Glu Leu Tyr Lys
 225 230 235

<210> 189
 <211> 678
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(678)

<400> 189	
atg agg tct tcc aag aat gtt atc aag gag ttc atg agg ttt aag gtt	48
Met Arg Ser Ser Lys Asn Val Ile Lys Glu Phe Met Arg Phe Lys Val	
1 5 10 15	
cgc atg gaa gga acg gtc aat ggg cac gag ttt gaa ata gaa ggc gaa	96
Arg Met Glu Gly Thr Val Asn Gly His Glu Phe Glu Ile Glu Gly Glu	
20 25 30	
gga gag ggg agg cca tac gaa ggc cac aat acc gta aag ctt aag gta	144
Gly Glu Gly Arg Pro Tyr Glu Gly His Asn Thr Val Lys Leu Lys Val	
35 40 45	
acc aag ggg gga cct ttg cca ttt gct tgg gat att ttg tca cca caa	192
Thr Lys Gly Gly Pro Leu Pro Phe Ala Trp Asp Ile Leu Ser Pro Gln	
50 55 60	
ttt cag tat gga agc aag gta tat gtc aag cac cct gcc gac ata cca	240
Phe Gln Tyr Gly Ser Lys Val Tyr Val Lys His Pro Ala Asp Ile Pro	
65 70 75 80	
gac tat aaa aag ctg tca ttt cct gaa gga ttt aaa tgg gaa agg gtc	288
Asp Tyr Lys Lys Leu Ser Phe Pro Glu Gly Phe Lys Trp Glu Arg Val	
85 90 95	
atg aac ttt gaa gac ggt ggc gtc gtt act gta acc cag gat tcc agt	336
Met Asn Phe Glu Asp Gly Gly Val Val Thr Val Thr Gln Asp Ser Ser	
100 105 110	
ttg cag gat ggc tgt ttc atc tac aag gtc aag ttc att ggc gtg aac	384
Leu Gln Asp Gly Cys Phe Ile Tyr Lys Val Lys Phe Ile Gly Val Asn	
115 120 125	
ttt cct tcc gat gga cct gtt atg caa aag aag aca atg ggc tgg gaa	432
Phe Pro Ser Asp Gly Pro Val Met Gln Lys Lys Thr Met Gly Trp Glu	
130 135 140	

gcc agc act gag cgt ttg tat cct cgt gat ggc gtg ttg aaa gga gag 480
 Ala Ser Thr Glu Arg Leu Tyr Pro Arg Asp Gly Val Leu Lys Gly Glu
 145 150 155 160
 att cat aag gct ctg aag ctg aaa gac ggt ggt cat tac cta gtt gaa 528
 Ile His Lys Ala Leu Lys Leu Lys Asp Gly Gly His Tyr Leu Val Glu
 165 170 175
 ttc aaa agt att tac atg gca aag aag cct gtg cag cta cca ggg tac 576
 Phe Lys Ser Ile Tyr Met Ala Lys Lys Pro Val Gln Leu Pro Gly Tyr
 180 185 190
 tac tat gtt gac tcc aaa ctg gat ata aca agc cac aac gaa gac tat 624
 Tyr Tyr Val Asp Ser Lys Leu Asp Ile Thr Ser His Asn Glu Asp Tyr
 195 200 205
 aca atc gtt gag cag tat gaa aga acc gag gga cgc cac cat ctg ttc 672
 Thr Ile Val Glu Gln Tyr Glu Arg Thr Glu Gly Arg His His Leu Phe
 210 215 220
 ctt taa 678
 Leu
 225

<210> 190
 <211> 225
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 190

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

130 135 465 140
 Ala Ser Thr Glu Arg Leu Tyr Pro Arg Asp Gly Val Leu Lys Gly Glu
 145 150 155 160
 Ile His Lys Ala Leu Lys Leu Lys Asp Gly Gly His Tyr Leu Val Glu
 165 170 175
 Phe Lys Ser Ile Tyr Met Ala Lys Lys Pro Val Gln Leu Pro Gly Tyr
 180 185 190
 Tyr Tyr Val Asp Ser Lys Leu Asp Ile Thr Ser His Asn Glu Asp Tyr
 195 200 205
 Thr Ile Val Glu Gln Tyr Glu Arg Thr Glu Gly Arg His His Leu Phe
 210 215 220

Leu
225

<210> 191
 <211> 585
 <212> DNA
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(585)

<400> 191	
atg ttt aaa ggt ata gta gaa ggt ata gga atc att gaa aaa att gat	48
Met Phe Lys Gly Ile Val Glu Gly Ile Gly Ile Ile Glu Lys Ile Asp	
1 5 10 15	
ata tat act gac cta gat aag tat gca att cga ttt cct gaa aat atg	96
Ile Tyr Thr Asp Leu Asp Lys Tyr Ala Ile Arg Phe Pro Glu Asn Met	
20 25 30	
ttg aat gga att aaa aag gag tcg tca ata atg ttt aac gga tgc ttc	144
Leu Asn Gly Ile Lys Lys Glu Ser Ser Ile Met Phe Asn Gly Cys Phe	
35 40 45	
tta acg gta act agc gtg aat tca aac att gtc tgg ttt gat ata ttt	192
Leu Thr Val Thr Ser Val Asn Ser Asn Ile Val Trp Phe Asp Ile Phe	
50 55 60	
gaa aaa gaa gca cgt aag ctt gat act ttt cgg gaa tat aag gta ggt	240
Glu Lys Glu Ala Arg Lys Leu Asp Thr Phe Arg Glu Tyr Lys Val Gly	
65 70 75 80	
gac cga gta aat tta gga aca ttc cca aaa ttt ggc gct gca tct ggt	288
Asp Arg Val Asn Leu Gly Thr Phe Pro Lys Phe Gly Ala Ala Ser Gly	
85 90 95	
ggg cat ata tta tca gca agg att tca tgt gta gca agt att att gaa	336
Gly His Ile Leu Ser Ala Arg Ile Ser Cys Val Ala Ser Ile Ile Glu	
100 105 110	

ata	ata	gaa	aat	gag	gat	tat	caa	caa	atg	tgg	att	caa	att	cct	gaa	384
Ile	Ile	Glu	Asn	Glu	Asp	Tyr	Gln	Gln	Met	Trp	Ile	Gln	Ile	Pro	Glu	
		115					120					125				
aat	ttt	aca	gag	ttt	ctt	att	gat	aaa	gac	tat	att	gct	gtg	gat	ggg	432
Asn	Phe	Thr	Glu	Phe	Leu	Ile	Asp	Lys	Asp	Tyr	Ile	Ala	Val	Asp	Gly	
	130					135					140					
att	agc	tta	act	att	gac	act	ata	aaa	aac	aac	caa	ttt	ttc	att	agt	480
Ile	Ser	Leu	Thr	Ile	Asp	Thr	Ile	Lys	Asn	Asn	Gln	Phe	Phe	Ile	Ser	
145					150					155					160	
tta	ccc	tta	aaa	ata	gca	caa	aat	aca	aat	atg	aaa	tgg	cga	aaa	aaa	528
Leu	Pro	Leu	Lys	Ile	Ala	Gln	Asn	Thr	Asn	Met	Lys	Trp	Arg	Lys	Lys	
				165					170					175		
ggg	gat	aag	gta	aat	gtt	gag	tta	tca	aac	aaa	att	aat	gct	aac	cag	576
Gly	Asp	Lys	Val	Asn	Val	Glu	Leu	Ser	Asn	Lys	Ile	Asn	Ala	Asn	Gln	
			180					185					190			
tgt	tgg	taa														585
Cys	Trp															

<210> 192
 <211> 194
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 192

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

Ile Ser Leu Thr Ile Asp Thr Ile Lys Asn Asn Gln Phe Phe Ile Ser
145 150 155 160

Leu Pro Leu Lys Ile Ala Gln Asn Thr Asn Met Lys Trp Arg Lys Lys
165 170 175

Gly Asp Lys Val Asn Val Glu Leu Ser Asn Lys Ile Asn Ala Asn Gln
180 185 190

Cys Trp

<210> 193
<211> 696
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(696)

<400> 193
atg tct tat tca aag caa ggc atc gca caa gta atg aag acg aaa tac 48
Met Ser Tyr Ser Lys Gln Gly Ile Ala Gln Val Met Lys Thr Lys Tyr
1 5 10 15
cat atg gaa ggc agt gtc aat ggc cat gaa ttc acg atc gaa ggt gta 96
His Met Glu Gly Ser Val Asn Gly His Glu Phe Thr Ile Glu Gly Val
20 25 30
gga act gga aac cct tac gaa ggc aca cag atg tcc gaa tta gtg atc 144
Gly Thr Gly Asn Pro Tyr Glu Gly Thr Gln Met Ser Glu Leu Val Ile
35 40 45
acc aag cct gca gga aaa ccc ctt cca ttc tcc ttt gac att ctg tca 192
Thr Lys Pro Ala Gly Lys Pro Leu Pro Phe Ser Phe Asp Ile Leu Ser
50 55 60
aca gtc ttt caa tat gga aac agg tgc ttc aca aag tac cct gaa gga 240
Thr Val Phe Gln Tyr Gly Asn Arg Cys Phe Thr Lys Tyr Pro Glu Gly
65 70 75 80
atg act gac tat ttc aag caa gca ttc cca gat gga atg tca tat gaa 288
Met Thr Asp Tyr Phe Lys Gln Ala Phe Pro Asp Gly Met Ser Tyr Glu
85 90 95
agg tca ttt cta tat gag gat gga gga gtt gct aca gcc ggc tgg aac 336
Arg Ser Phe Leu Tyr Glu Asp Gly Gly Val Ala Thr Ala Gly Trp Asn
100 105 110
att ggt ctt gag aga gat tgc ttc atc cac aaa tcc atc tat cat ggc 384
Ile Gly Leu Glu Arg Asp Cys Phe Ile His Lys Ser Ile Tyr His Gly
115 120 125
gtt aac ttt ccc gct gat gga ccc gta atg aaa aag aag acc att ggc 432
Val Asn Phe Pro Ala Asp Gly Pro Val Met Lys Lys Lys Thr Ile Gly
130 135 140
tgg gat aaa gcc ttc gaa aaa atg act gtg tcc aaa gac gtg tta aga 480

Trp	Asp	Lys	Ala	Phe	Glu	Lys	Met	Thr	Val	468	Ser	Lys	Asp	Val	Leu	Arg	
145					150						155					160	
ggg	gat	gtg	act	ggg	ttt	ctt	atg	ctc	gaa	gga	ggg	ggg	tac	cac	agc		528
Gly	Asp	Val	Thr	Gly	Phe	Leu	Met	Leu	Glu	Gly	Gly	Gly	Tyr	His	Ser		
				165					170					175			
tgc	cag	ttt	cac	tcc	act	tac	aaa	cca	gaa	aag	ccg	gct	gca	ctg	ccc		576
Cys	Gln	Phe	His	Ser	Thr	Tyr	Lys	Pro	Glu	Lys	Pro	Ala	Ala	Leu	Pro		
			180					185					190				
ccg	aat	cat	gtc	gta	gaa	cat	cac	att	gtg	agg	act	gac	ctt	ggc	caa		624
Pro	Asn	His	Val	Val	Glu	His	His	Ile	Val	Arg	Thr	Asp	Leu	Gly	Gln		
		195					200				205						
agt	gca	aaa	ggc	ttc	aca	gtc	aag	ctg	gaa	gaa	cat	gct	gcg	gct	cat		672
Ser	Ala	Lys	Gly	Phe	Thr	Val	Lys	Leu	Glu	Glu	His	Ala	Ala	Ala	His		
	210					215					220						
gtt	aac	cct	ttg	aag	gtt	caa	taa										696
Val	Asn	Pro	Leu	Lys	Val	Gln											
225					230												

<210> 194
 <211> 231
 <212> PRT
 <213> ARTIFICIAL SEQUENCE

<220>
 <223> Synthetic Construct

<400> 194

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

Trp Asp Lys Ala Phe Glu Lys Met Thr Val Ser Lys Asp Val Leu Arg
145 150 155 160

Gly Asp Val Thr Gly Phe Leu Met Leu Glu Gly Gly Gly Tyr His Ser
165 170 175

Cys Gln Phe His Ser Thr Tyr Lys Pro Glu Lys Pro Ala Ala Leu Pro
180 185 190

Pro Asn His Val Val Glu His His Ile Val Arg Thr Asp Leu Gly Gln
195 200 205

Ser Ala Lys Gly Phe Thr Val Lys Leu Glu Glu His Ala Ala Ala His
210 215 220

Val Asn Pro Leu Lys Val Gln
225 230

<210> 195
<211> 18
<212> DNA
<213> ARTIFICIAL SEQUENCE

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(18)

<400> 195
gga ggt gga ggt gga ggc
Gly Gly Gly Gly Gly Gly
1 5

18

<210> 196
<211> 6
<212> PRT
<213> ARTIFICIAL SEQUENCE

<220>
<223> Synthetic Construct

<400> 196
Gly Gly Gly Gly Gly Gly
1 5

<210> 197
<211> 2178
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS

<222> (1)..(2178)

<400> 197

atg Met 1	ggg Gly	caa Gln	ccc Pro	ggg Gly 5	aac Asn	ggc Gly	agc Ser	gcc Ala	ttc Phe 10	ttg Leu	ctg Leu	gca Ala	ccc Pro	aat Asn 15	gga Gly	48
agc Ser	cat His	gcg Ala	ccg Pro 20	gac Asp	cac His	gac Asp	gtc Val	acg Thr 25	cag Gln	caa Gln	agg Arg	gac Asp	gag Glu 30	gtg Val	tgg Trp	96
gtg Val	gtg Val	ggc Gly 35	atg Met	ggc Gly	atc Ile	gtc Val	atg Met 40	tct Ser	ctc Leu	atc Ile	gtc Val	ctg Leu 45	gcc Ala	atc Ile	gtg Val	144
ttt Phe 50	ggc Gly	aat Asn	gtg Val	ctg Leu	gtc Val	atc Ile 55	aca Thr	gcc Ala	att Ile	gcc Ala	aag Lys 60	ttc Phe	gag Glu	cgt Arg	ctg Leu	192
cag Gln 65	acg Thr	gtc Val	acc Thr	aac Asn	tac Tyr 70	ttc Phe	atc Ile	act Thr	tca Ser	ctg Leu 75	gcc Ala	tgt Cys	gct Ala	gat Asp	ctg Leu 80	240
gtc Val	atg Met	ggc Gly	cta Leu	gca Ala 85	gtg Val	gtg Val	ccc Pro	ttt Phe	ggg Gly 90	gcc Ala	gcc Ala	cat His	att Ile	ctt Leu 95	atg Met	288
aaa Lys	atg Met	tgg Trp	act Thr 100	ttt Phe	ggc Gly	aac Asn	ttc Phe	tgg Trp 105	tgc Cys	gag Glu	ttt Phe	tgg Trp	act Thr 110	tcc Ser	att Ile	336
gat Asp	gtg Val	ctg Leu 115	tgc Cys	gtc Val	acg Thr	gcc Ala	agc Ser 120	att Ile	gag Glu	acc Thr	ctg Leu	tgc Cys 125	gtg Val	atc Ile	gca Ala	384
gtg Val	gat Asp 130	cgc Arg	tac Tyr	ttt Phe	gcc Ala	att Ile 135	act Thr	tca Ser	cct Pro	ttc Phe	aag Lys 140	tac Tyr	cag Gln	agc Ser	ctg Leu	432
ctg Leu 145	acc Thr	aag Lys	aat Asn	aag Lys	gcc Ala 150	cgg Arg	gtg Val	atc Ile	att Ile	ctg Leu 155	atg Met	gtg Val	tgg Trp	att Ile	gtg Val 160	480
tca Ser	ggc Gly	ctt Leu	acc Thr	tcc Ser 165	ttc Phe	ttg Leu	ccc Pro	att Ile	cag Gln 170	atg Met	cac His	tgg Trp	tac Tyr	agg Arg 175	gcc Ala	528
acc Thr	cac His	cag Gln	gaa Glu 180	gcc Ala	atc Ile	aac Asn	tgc Cys	tat Tyr 185	gcc Ala	aat Asn	gag Glu	acc Thr	tgc Cys 190	tgt Cys	gac Asp	576
ttc Phe	ttc Phe	acg Thr 195	aac Asn	caa Gln	gcc Ala	tat Tyr 200	gcc Ala	att Ile	gcc Ala	tct Ser	tcc Ser	atc Ile 205	gtg Val	tcc Ser	ttc Phe	624
tac Tyr	gtt Val 210	ccc Pro	ctg Leu	gtg Val	atc Ile	atg Met 215	gtc Val	ttc Phe	gtc Val	tac Tyr	tcc Ser 220	agg Arg	gtc Val	ttt Phe	cag Gln	672
gag Glu 225	gcc Ala	aaa Lys	agg Arg	cag Gln	ctc Leu 230	cag Gln	aag Lys	att Ile	gac Asp	aaa Lys 235	tct Ser	gag Glu	ggc Gly	cgc Arg	ttc Phe 240	720
cat His	gtc Val	cag Gln	aac Asn	ctt Leu 245	agc Ser	cag Gln	gtg Val	gag Glu	cag Gln 250	gat Asp	ggg Gly	cgg Arg	acg Thr	ggg Gly 255	cat His	768
gga Gly	ctc Leu	cgc Arg	aga Arg	tct Ser	tcc Ser	aag Lys	ttc Phe	tgc Cys	ttg Leu	aag Lys	gag Glu	cac His	aaa Lys	gcc Ala	ctc Leu	816

471																
260				265				270								
aag Lys	acg Thr	tta Leu 275	ggc Gly	atc Ile	atc Ile	atg Met	ggc Gly 280	act Thr	ttc Phe	acc Thr	ctc Leu	tgc Cys 285	tgg Trp	ctg Leu	ccc Pro	864
ttc Phe	ttc Phe 290	atc Ile	ggt Val	aac Asn	att Ile	gtg Val 295	cat His	gtg Val	atc Ile	cag Gln	gat Asp 300	aac Asn	ctc Leu	atc Ile	cgt Arg	912
aag Lys 305	gaa Glu	ggt Val	tac Tyr	atc Ile	ctc Leu 310	cta Leu	aat Asn	tgg Trp	ata Ile	ggc Gly 315	tat Tyr	gtc Val	aat Asn	tct Ser	ggt Gly 320	960
ttc Phe	aat Asn	ccc Pro	ctt Leu	atc Ile 325	tac Tyr	tgc Cys	cgg Arg	agc Ser	cca Pro 330	gat Asp	ttc Phe	agg Arg	att Ile	gcc Ala 335	ttc Phe	1008
cag Gln	gag Glu	ctt Leu	ctg Leu 340	tgc Cys	tac Tyr	cgt Arg	act Thr	cga Arg 345	gag Glu	agg Arg	agg Arg	gcc Ala	cgc Arg 350	ttc Phe	gtg Val	1056
tcc Ser	aag Lys	aaa Lys 355	ggc Gly	aac Asn	tgc Cys	aac Asn	gtc Val 360	gcc Ala	cac His	aag Lys	aac Asn	att Ile 365	cga Arg	gag Glu	cag Gln	1104
ggc Gly 370	cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp	gtg Val 375	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val 380	gac Asp	ctc Leu	aaa Lys	tgg Trp	1152
cca Pro 385	cac His	act Thr	ctg Leu	ctc Leu	att Ile 390	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 395	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 400	1200
ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val 405	tgg Trp	tgg Trp	ctc Leu	atc Ile	gcc Ala 410	ttc Phe	gcc Ala	cac His	ggt Gly	gat Asp 415	ctc Leu	1248
tat Tyr	gct Ala	tac Tyr	atg Met 420	gag Glu	aaa Lys	ggc Gly	atc Ile	acg Thr 425	gac Asp	ctg Leu	gcc Ala	ccc Pro	tac Tyr 430	cca Pro	tac Tyr	1296
gat Asp	gta Val	cca Pro 435	gat Asp	tac Tyr	gcc Ala	gga Gly	gag Glu 440	ggc Gly	acc Thr	aat Asn	gtg Val	ccc Pro 445	tgc Cys	gtc Val	aca Thr	1344
agc Ser	atc Ile 450	cac His	tcc Ser	ttt Phe	tca Ser	tct Ser 455	gcc Ala	ttc Phe	ctt Leu	ttc Phe	tcc Ser 460	atc Ile	gag Glu	gtc Val	cag Gln	1392
gtg Val 465	acc Thr	att Ile	ggt Gly	ttc Phe	ggc Gly 470	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr 475	gag Glu	gaa Glu	tgt Cys	ccc Pro	ctg Leu 480	1440
gcc Ala	atc Ile	ctc Leu	att Ile	ctc Leu 485	att Ile	gtg Val	cag Gln	aat Asn	atc Ile 490	gtc Val	ggg Gly	ctg Leu	atg Met	atc Ile 495	aac Asn	1488
gcc Ala	atc Ile	atg Met	ctg Leu 500	ggc Gly	tgc Cys	atc Ile	ttc Phe	atg Met 505	aaa Lys	acg Thr	gcc Ala	cag Gln	gca Ala 510	cat His	cgg Arg	1536
cgg Arg	gca Ala	gaa Glu 515	acc Thr	ctc Leu	atc Ile	ttc Phe	agc Ser 520	aag Lys	cat His	gct Ala	gtg Val	atc Ile 525	acc Thr	ctg Leu	cgc Arg	1584
cat His	ggc Gly 530	cgc Arg	ctg Leu	tgc Cys	ttc Phe	atg Met 535	ctg Leu	cgc Arg	gta Val	ggg Gly	gac Asp 540	ctc Leu	cga Arg	aag Lys	agc Ser	1632

atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	aag	acc	acc	1680
Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	Lys	Thr	Thr	
545					550					555					560	
agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	atc	ccc	atg	1728
Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	Ile	Pro	Met	
				565					570					575		
gag	aat	ggc	gtg	ggg	ggg	aac	ggc	atc	ttc	ctg	gtg	gcc	cca	ctc	atc	1776
Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	Pro	Leu	Ile	
			580					585					590			
atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	ctg	gct	cct	1824
Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	Leu	Ala	Pro	
		595					600					605				
agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	atc	ttg	gaa	1872
Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	Ile	Leu	Glu	
	610					615					620					
ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	acc	tcc	tac	1920
Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	Thr	Ser	Tyr	
625					630					635					640	
cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	att	gtg	gcc	1968
Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	Ile	Val	Ala	
				645					650					655		
gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	ggg	aac	acc	2016
Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	Gly	Asn	Thr	
			660					665					670			
att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	gat	gag	gac	2064
Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	Asp	Glu	Asp	
		675					680					685				
cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tgc	tgc	cgg	ggg	ccc	ctg	2112
Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	Gly	Pro	Leu	
	690					695					700					
cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	ttt	agc	atc	2160
Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	Phe	Ser	Ile	
705				710					715						720	
tct	cca	gat	tcc	ttg	tcc											2178
Ser	Pro	Asp	Ser	Leu	Ser											
				725												

<210> 198
 <211> 726
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 198

Met Gly Gln Pro Gly Asn Gly Ser Ala Phe Leu Leu Ala Pro Asn Gly
1 5 10 15

Ser His Ala Pro Asp His Asp Val Thr Gln Gln Arg Asp Glu Val Trp
20 25 30

Val Val Gly Met Gly Ile Val Met Ser Leu Ile Val Leu Ala Ile Val

473

35	40	45
Phe Gly Asn Val Leu Val Ile Thr Ala Ile Ala Lys Phe Glu Arg Leu		
50	55	60
Gln Thr Val Thr Asn Tyr Phe Ile Thr Ser Leu Ala Cys Ala Asp Leu		
65	70	75
Val Met Gly Leu Ala Val Val Pro Phe Gly Ala Ala His Ile Leu Met		
85	90	95
Lys Met Trp Thr Phe Gly Asn Phe Trp Cys Glu Phe Trp Thr Ser Ile		
100	105	110
Asp Val Leu Cys Val Thr Ala Ser Ile Glu Thr Leu Cys Val Ile Ala		
115	120	125
Val Asp Arg Tyr Phe Ala Ile Thr Ser Pro Phe Lys Tyr Gln Ser Leu		
130	135	140
Leu Thr Lys Asn Lys Ala Arg Val Ile Ile Leu Met Val Trp Ile Val		
145	150	155
Ser Gly Leu Thr Ser Phe Leu Pro Ile Gln Met His Trp Tyr Arg Ala		
165	170	175
Thr His Gln Glu Ala Ile Asn Cys Tyr Ala Asn Glu Thr Cys Cys Asp		
180	185	190
Phe Phe Thr Asn Gln Ala Tyr Ala Ile Ala Ser Ser Ile Val Ser Phe		
195	200	205
Tyr Val Pro Leu Val Ile Met Val Phe Val Tyr Ser Arg Val Phe Gln		
210	215	220
Glu Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe		
225	230	235
His Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His		
245	250	255
Gly Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu		
260	265	270
Lys Thr Leu Gly Ile Ile Met Gly Thr Phe Thr Leu Cys Trp Leu Pro		
275	280	285
Phe Phe Ile Val Asn Ile Val His Val Ile Gln Asp Asn Leu Ile Arg		
290	295	300
Lys Glu Val Tyr Ile Leu Leu Asn Trp Ile Gly Tyr Val Asn Ser Gly		
305	310	315
		320

Phe Asn Pro Leu Ile Tyr Cys Arg Ser Pro Asp Phe Arg Ile Ala Phe
 325 330 335
 Gln Glu Leu Leu Cys Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val
 340 345 350
 Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln
 355 360 365
 Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp
 370 375 380
 Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu
 385 390 395 400
 Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu
 405 410 415
 Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr
 420 425 430
 Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr
 435 440 445
 Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln
 450 455 460
 Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu
 465 470 475 480
 Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn
 485 490 495
 Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg
 500 505 510
 Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg
 515 520 525
 His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser
 530 535 540
 Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg Lys Thr Thr
 545 550 555 560
 Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp Ile Pro Met
 565 570 575
 Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile
 580 585 590

Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro
 595 600 605
 Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu
 610 615 620
 Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr
 625 630 635 640
 Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala
 645 650 655
 Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr
 660 665 670
 Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp
 675 680 685
 Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu
 690 695 700
 Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile
 705 710 715 720
 Ser Pro Asp Ser Leu Ser
 725

<210> 199
 <211> 2571
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2571)

<400> 199	
atg aag tcg atc cta gat ggc ctt gca gat acc acc ttc cgc acc atc	48
Met Lys Ser Ile Leu Asp Gly Leu Ala Asp Thr Thr Phe Arg Thr Ile	
1 5 10 15	
acc act gac ctc ctg tac gtg ggc tca aat gac att cag tac gaa gac	96
Thr Thr Asp Leu Leu Tyr Val Gly Ser Asn Asp Ile Gln Tyr Glu Asp	
20 25 30	
atc aaa ggt gac atg gca tcc aaa tta ggg tac ttc cca cag aaa ttc	144
Ile Lys Gly Asp Met Ala Ser Lys Leu Gly Tyr Phe Pro Gln Lys Phe	
35 40 45	
cct tta act tcc ttt agg gga agt ccc ttc caa gag aag atg act gcg	192
Pro Leu Thr Ser Phe Arg Gly Ser Pro Phe Gln Glu Lys Met Thr Ala	
50 55 60	
gga gac aac ccc cag cta gtc cca gca gac cag gtg aac att aca gaa	240
Gly Asp Asn Pro Gln Leu Val Pro Ala Asp Gln Val Asn Ile Thr Glu	

65	70							476 75							80	
ttt Phe	tac Tyr	aac Asn	aag Lys	tct Ser 85	ctc Leu	tcg Ser	tcc Ser	ttc Phe	aag Lys 90	gag Glu	aat Asn	gag Glu	gag Glu	aac Asn 95	atc Ile	288
cag Gln	tgt Cys	ggg Gly	gag Glu 100	aac Asn	ttc Phe	atg Met	gac Asp	ata Ile 105	gag Glu	tgt Cys	ttc Phe	atg Met	gtc Val 110	ctg Leu	aac Asn	336
ccc Pro	agc Ser	cag Gln 115	cag Gln	ctg Leu	gcc Ala	att Ile	gca Ala 120	gtc Val	ctg Leu	tcc Ser	ctc Leu	acg Thr 125	ctg Leu	ggc Gly	acc Thr	384
ttc Phe	acg Thr 130	gtc Val	ctg Leu	gag Glu	aac Asn	ctc Leu 135	ctg Leu	gtg Val	ctg Leu	tgc Cys	gtc Val 140	atc Ile	ctc Leu	cac His	tcc Ser	432
cgc Arg 145	agc Ser	ctc Leu	cgc Arg	tgc Cys	agg Arg 150	cct Pro	tcc Ser	tac Tyr	cac His	ttc Phe 155	atc Ile	ggc Gly	agc Ser	ctg Leu	gcg Ala 160	480
gtg Val	gca Ala	gac Asp	ctc Leu	ctg Leu 165	ggg Gly	agt Ser	gtc Val	att Ile	ttt Phe 170	gtc Val	tac Tyr	agc Ser	ttc Phe	att Ile 175	gac Asp	528
ttc Phe	cac His	gtg Val	ttc Phe 180	cac His	cgc Arg	aaa Lys	gat Asp	agc Ser 185	cgc Arg	aac Asn	gtg Val	ttt Phe	ctg Leu 190	ttc Phe	aaa Lys	576
ctg Leu	ggc Gly	ggg Gly 195	gtc Val	acg Thr	gcc Ala	tcc Ser	ttc Phe 200	act Thr	gcc Ala	tcc Ser	gtg Val	ggc Gly 205	agc Ser	ctg Leu	ttc Phe	624
ctc Leu	aca Thr 210	gcc Ala	atc Ile	gac Asp	agg Arg	tac Tyr 215	ata Ile	tcc Ser	att Ile	cac His	agg Arg 220	ccc Pro	ctg Leu	gcc Ala	tat Tyr	672
aag Lys 225	agg Arg	att Ile	gtc Val	acc Thr	agg Arg 230	ccc Pro	aag Lys	gcc Ala	gtg Val	gtg Val 235	gcg Ala	ttt Phe	tgc Cys	ctg Leu	atg Met 240	720
tgg Trp	acc Thr	ata Ile	gcc Ala	att Ile 245	gtg Val	atc Ile	gcc Ala	gtg Val	ctg Leu 250	cct Pro	ctc Leu	ctg Leu	ggc Gly	tgg Trp 255	aac Asn	768
tgc Cys	gag Glu	aaa Lys	ctg Leu 260	caa Gln	tct Ser	gtt Val	tgc Cys	tca Ser 265	gac Asp	att Ile	ttc Phe	cca Pro	cac His 270	att Ile	gat Asp	816
gaa Glu	acc Thr	tac Tyr 275	ctg Leu	atg Met	ttc Phe	tgg Trp	atc Ile 280	ggg Gly	gtc Val	acc Thr	agc Ser	gta Val 285	ctg Leu	ctt Leu	ctg Leu	864
ttc Phe	atc Ile 290	gtg Val	tat Tyr	gcg Ala	tac Tyr	atg Met 295	tat Tyr	att Ile	ctc Leu	tgg Trp	aag Lys 300	gct Ala	cac His	agc Ser	cac His	912
gcc Ala 305	gtc Val	cgc Arg	atg Met	att Ile	cag Gln 310	cgt Arg	ggc Gly	acc Thr	cag Gln	aag Lys 315	agc Ser	atc Ile	atc Ile	atc Ile	cac His 320	960
acg Thr	tct Ser	gag Glu	gat Asp	ggg Gly 325	aag Lys	gta Val	cag Gln	gtg Val	acc Thr 330	cgg Arg	cca Pro	gac Asp	caa Gln	gcc Ala 335	cgc Arg	1008
atg Met	gac Asp	att Ile	agg Arg 340	tta Leu	gcc Ala	aag Lys	acc Thr	ctg Leu 345	gtc Val	ctg Leu	atc Ile	ctg Leu	gtg Val 350	gtg Val	ttg Leu	1056

atc Ile	atc Ile	tgc Cys 355	tgg Trp	ggc Gly	cct Pro	ctg Leu	ctt Leu 360	gca Ala	atc Ile	atg Met	gtg Val	tat Tyr 365	gat Asp	gtc Val	ttt Phe	1104
ggg Gly	aag Lys 370	atg Met	aac Asn	aag Lys	ctc Leu	att Ile 375	aag Lys	acg Thr	gtg Val	ttt Phe	gca Ala 380	ttc Phe	tgc Cys	agt Ser	atg Met	1152
ctc Leu 385	tgc Cys	ctg Leu	ctg Leu	aac Asn	tcc Ser 390	acc Thr	gtg Val	aac Asn	ccc Pro	atc Ile 395	atc Ile	tat Tyr	gct Ala	ctg Leu	agg Arg 400	1200
agt Ser	aag Lys	gac Asp	ctg Leu	cga Arg 405	cac His	gct Ala	ttc Phe	cgg Arg	agc Ser 410	atg Met	ttt Phe	ccc Pro	tct Ser	tgt Cys 415	gaa Glu	1248
ggc Gly	act Thr	gcg Ala	cag Gln 420	cct Pro	ctg Leu	gat Asp	aac Asn	agc Ser 425	atg Met	ggg Gly	gac Asp	tcg Ser	gac Asp 430	tgc Cys	ctg Leu	1296
cac His	aaa Lys	cac His 435	gca Ala	aac Asn	aat Asn	gca Ala	gcc Ala 440	agt Ser	gtt Val	cac His	agg Arg	gcc Ala 445	gca Ala	gaa Glu	agc Ser	1344
tgc Cys	atc Ile 450	aag Lys	agc Ser	aca Thr	gtc Val	aag Lys 455	att Ile	gcc Ala	aag Lys	gta Val	acc Thr 460	atg Met	tct Ser	gtg Val	tcc Ser	1392
aca Thr 465	gac Asp	acg Thr	tct Ser	gcc Ala	gag Glu 470	gct Ala	ctg Leu	tac Tyr	cgt Arg	act Thr 475	cga Arg	gag Glu	agg Arg	agg Arg	gcc Ala 480	1440
cgc Arg	ttc Phe	gtg Val	tcc Ser	aag Lys 485	aaa Lys	ggc Gly	aac Asn	tgc Cys	aac Asn 490	gtc Val	gcc Ala	cac His	aag Lys	aac Asn 495	att Ile	1488
cga Arg	gag Glu	cag Gln	ggc Gly 500	cgc Arg	ttc Phe	ctg Leu	cag Gln	gat Asp 505	gtg Val	ttc Phe	acc Thr	acg Thr	ctg Leu 510	gtg Val	gac Asp	1536
ctc Leu	aaa Lys	tgg Trp 515	cca Pro	cac His	act Thr	ctg Leu	ctc Leu 520	att Ile	ttc Phe	acc Thr	atg Met	tcc Ser 525	ttc Phe	ctg Leu	tgc Cys	1584
agc Ser	tgg Trp 530	ctg Leu	ctc Leu	ttt Phe	gcc Ala	atg Met 535	gtc Val	tgg Trp	tgg Trp	ctc Leu	atc Ile 540	gcc Ala	ttc Phe	gcc Ala	cac His	1632
ggt Gly 545	gat Asp	ctc Leu	tat Tyr	gct Ala	tac Tyr 550	atg Met	gag Glu	aaa Lys	ggc Gly	atc Ile 555	acg Thr	gac Asp	ctg Leu	gcc Ala	ccc Pro 560	1680
tac Tyr	cca Pro	tac Tyr	gat Asp	gta Val 565	cca Pro	gat Asp	tac Tyr	gcc Ala	gga Gly 570	gag Glu	ggc Gly	acc Thr	aat Asn	gtg Val 575	ccc Pro	1728
tgc Cys	gtc Val	aca Thr	agc Ser 580	atc Ile	cac His	tcc Ser	ttt Phe	tca Ser 585	tct Ser	gcc Ala	ttc Phe	ctt Leu	ttc Phe 590	tcc Ser	atc Ile	1776
gag Glu	gtc Val	cag Gln 595	gtg Val	acc Thr	att Ile	ggt Gly	ttc Phe 600	ggc Gly	ggg Gly	cgc Arg	atg Met	gtg Val 605	aca Thr	gag Glu	gaa Glu	1824
tgt Cys	ccc Pro 610	ctg Leu	gcc Ala	atc Ile	ctc Leu	att Ile 615	ctc Leu	att Ile	gtg Val	cag Gln	aat Asn 620	atc Ile	gtc Val	ggg Gly	ctg Leu	1872

															478	
atg	atc	aac	gcc	atc	atg	ctg	ggc	tgc	atc	ttc	atg	aaa	acg	gcc	cag	1920
Met	Ile	Asn	Ala	Ile	Met	Leu	Gly	Cys	Ile	Phe	Met	Lys	Thr	Ala	Gln	
625					630					635					640	
gca	cat	cgg	cgg	gca	gaa	acc	ctc	atc	ttc	agc	aag	cat	gct	gtg	atc	1968
Ala	His	Arg	Arg	Ala	Glu	Thr	Leu	Ile	Phe	Ser	Lys	His	Ala	Val	Ile	
				645					650					655		
acc	ctg	cgc	cat	ggc	cgc	ctg	tgc	ttc	atg	ctg	cgc	gta	ggg	gac	ctc	2016
Thr	Leu	Arg	His	Gly	Arg	Leu	Cys	Phe	Met	Leu	Arg	Val	Gly	Asp	Leu	
			660					665					670			
cga	aag	agc	atg	atc	att	agc	gcc	acc	atc	cac	atg	cag	gtg	gtg	cgc	2064
Arg	Lys	Ser	Met	Ile	Ile	Ser	Ala	Thr	Ile	His	Met	Gln	Val	Val	Arg	
		675					680					685				
aag	acc	acc	agc	ccc	gag	ggc	gaa	gtt	gtg	cct	ctc	cac	cag	gta	gac	2112
Lys	Thr	Thr	Ser	Pro	Glu	Gly	Glu	Val	Val	Pro	Leu	His	Gln	Val	Asp	
	690					695					700					
atc	ccc	atg	gag	aat	ggc	gtg	ggc	ggc	aac	ggc	atc	ttc	ctg	gtg	gcc	2160
Ile	Pro	Met	Glu	Asn	Gly	Val	Gly	Gly	Asn	Gly	Ile	Phe	Leu	Val	Ala	
					710					715					720	
cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	2208
Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	
				725					730					735		
ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	2256
Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	
			740					745					750			
atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	2304
Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	
		755					760					765				
acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	2352
Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	
	770					775					780					
att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	2400
Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	
					790					795					800	
ggc	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	2448
Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	
				805					810					815		
gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	2496
Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	
			820					825					830			
ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	2544
Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	
		835					840					845				
ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc								2571
Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser								
	850					855										

<210> 200
 <211> 857
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 200

Met Lys Ser Ile Leu Asp Gly Leu Ala Asp Thr Thr Phe Arg Thr Ile
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 Thr Thr Asp Leu Leu Tyr Val Gly Ser Asn Asp Ile Gln Tyr Glu Asp
 20 25 30
 Ile Lys Gly Asp Met Ala Ser Lys Leu Gly Tyr Phe Pro Gln Lys Phe
 35 40 45
 Pro Leu Thr Ser Phe Arg Gly Ser Pro Phe Gln Glu Lys Met Thr Ala
 50 55 60
 Gly Asp Asn Pro Gln Leu Val Pro Ala Asp Gln Val Asn Ile Thr Glu
 65 70 75 80
 Phe Tyr Asn Lys Ser Leu Ser Ser Phe Lys Glu Asn Glu Glu Asn Ile
 85 90 95
 Gln Cys Gly Glu Asn Phe Met Asp Ile Glu Cys Phe Met Val Leu Asn
 100 105 110
 Pro Ser Gln Gln Leu Ala Ile Ala Val Leu Ser Leu Thr Leu Gly Thr
 115 120 125
 Phe Thr Val Leu Glu Asn Leu Leu Val Leu Cys Val Ile Leu His Ser
 130 135 140
 Arg Ser Leu Arg Cys Arg Pro Ser Tyr His Phe Ile Gly Ser Leu Ala
 145 150 155 160
 Val Ala Asp Leu Leu Gly Ser Val Ile Phe Val Tyr Ser Phe Ile Asp
 165 170 175
 Phe His Val Phe His Arg Lys Asp Ser Arg Asn Val Phe Leu Phe Lys
 180 185 190
 Leu Gly Gly Val Thr Ala Ser Phe Thr Ala Ser Val Gly Ser Leu Phe
 195 200 205
 Leu Thr Ala Ile Asp Arg Tyr Ile Ser Ile His Arg Pro Leu Ala Tyr
 210 215 220
 Lys Arg Ile Val Thr Arg Pro Lys Ala Val Val Ala Phe Cys Leu Met
 225 230 235 240
 Trp Thr Ile Ala Ile Val Ile Ala Val Leu Pro Leu Leu Gly Trp Asn
 245 250 255
 Cys Glu Lys Leu Gln Ser Val Cys Ser Asp Ile Phe Pro His Ile Asp
 260 265 270

Glu Thr Tyr Leu Met Phe Trp Ile Gly Val Thr Ser Val Leu Leu Leu
 275 280 285
 Phe Ile Val Tyr Ala Tyr Met Tyr Ile Leu Trp Lys Ala His Ser His
 290 295 300
 Ala Val Arg Met Ile Gln Arg Gly Thr Gln Lys Ser Ile Ile Ile His
 305 310 315 320
 Thr Ser Glu Asp Gly Lys Val Gln Val Thr Arg Pro Asp Gln Ala Arg
 325 330 335
 Met Asp Ile Arg Leu Ala Lys Thr Leu Val Leu Ile Leu Val Val Leu
 340 345 350
 Ile Ile Cys Trp Gly Pro Leu Leu Ala Ile Met Val Tyr Asp Val Phe
 355 360 365
 Gly Lys Met Asn Lys Leu Ile Lys Thr Val Phe Ala Phe Cys Ser Met
 370 375 380
 Leu Cys Leu Leu Asn Ser Thr Val Asn Pro Ile Ile Tyr Ala Leu Arg
 385 390 395 400
 Ser Lys Asp Leu Arg His Ala Phe Arg Ser Met Phe Pro Ser Cys Glu
 405 410 415
 Gly Thr Ala Gln Pro Leu Asp Asn Ser Met Gly Asp Ser Asp Cys Leu
 420 425 430
 His Lys His Ala Asn Asn Ala Ala Ser Val His Arg Ala Ala Glu Ser
 435 440 445
 Cys Ile Lys Ser Thr Val Lys Ile Ala Lys Val Thr Met Ser Val Ser
 450 455 460
 Thr Asp Thr Ser Ala Glu Ala Leu Tyr Arg Thr Arg Glu Arg Arg Ala
 465 470 475 480
 Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile
 485 490 495
 Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp
 500 505 510
 Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys
 515 520 525
 Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His
 530 535 540

Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly⁴⁸¹ Ile Thr Asp Leu Ala Pro
 545 550 555 560
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro
 565 570 575
 Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile
 580 585 590
 Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu
 595 600 605
 Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu
 610 615 620
 Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln
 625 630 635 640
 Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile
 645 650 655
 Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu
 660 665 670
 Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg
 675 680 685
 Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp
 690 695 700
 Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala
 705 710 715 720
 Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp
 725 730 735
 Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val
 740 745 750
 Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg
 755 760 765
 Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro
 770 775 780
 Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe
 785 790 795 800
 Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu
 805 810 815
 Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg

482

820 825 830

Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys
 835 840 845

Phe Ser Ile Ser Pro Asp Ser Leu Ser
 850 855

<210> 201
 <211> 2427
 <212> DNA
 <213> Artificial sequence

<220>
 <223> hybrid sequence

<220>
 <221> CDS
 <222> (1)..(2427)

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

483																576
ttc	cac	gtg	ttc	cac	cgc	aaa	gat	agc	cgc	aac	gtg	ttt	ctg	ttc	aaa	
Phe	His	Val	Phe	His	Arg	Lys	Asp	Ser	Arg	Asn	Val	Phe	Leu	Phe	Lys	
			180					185					190			
ctg	ggg	ggg	gtc	acg	gcc	tcc	ttc	act	gcc	tcc	gtg	ggc	agc	ctg	ttc	624
Leu	Gly	Gly	Val	Thr	Ala	Ser	Phe	Thr	Ala	Ser	Val	Gly	Ser	Leu	Phe	
		195					200					205				
ctc	aca	gcc	atc	gac	agg	tac	ata	tcc	att	cac	agg	ccc	ctg	gcc	tat	672
Leu	Thr	Ala	Ile	Asp	Arg	Tyr	Ile	Ser	Ile	His	Arg	Pro	Leu	Ala	Tyr	
	210					215					220					
aag	agg	att	gtc	acc	agg	ccc	aag	gcc	gtg	gtg	gcg	ttt	tgc	ctg	atg	720
Lys	Arg	Ile	Val	Thr	Arg	Pro	Lys	Ala	Val	Val	Ala	Phe	Cys	Leu	Met	
225					230				235						240	
tgg	acc	ata	gcc	att	gtg	atc	gcc	gtg	ctg	cct	ctc	ctg	ggc	tgg	aac	768
Trp	Thr	Ile	Ala	Ile	Val	Ile	Ala	Val	Leu	Pro	Leu	Leu	Gly	Trp	Asn	
				245					250					255		
tgc	gag	aaa	ctg	caa	tct	gtt	tgc	tca	gac	att	ttc	cca	cac	att	gat	816
Cys	Glu	Lys	Leu	Gln	Ser	Val	Cys	Ser	Asp	Ile	Phe	Pro	His	Ile	Asp	
			260					265					270			
gaa	acc	tac	ctg	atg	ttc	tgg	atc	ggg	gtc	acc	agc	gta	ctg	ctt	ctg	864
Glu	Thr	Tyr	Leu	Met	Phe	Trp	Ile	Gly	Val	Thr	Ser	Val	Leu	Leu	Leu	
		275					280					285				
ttc	atc	gtg	tat	gcg	tac	atg	tat	att	ctc	tgg	aag	gct	cac	agc	cac	912
Phe	Ile	Val	Tyr	Ala	Tyr	Met	Tyr	Ile	Leu	Trp	Lys	Ala	His	Ser	His	
	290					295					300					
gcc	gtc	cgc	atg	att	cag	cgt	ggc	acc	cag	aag	agc	atc	atc	atc	cac	960
Ala	Val	Arg	Met	Ile	Gln	Arg	Gly	Thr	Gln	Lys	Ser	Ile	Ile	Ile	His	
305					310					315					320	
acg	tct	gag	gat	ggg	aag	gta	cag	gtg	acc	cgg	cca	gac	caa	gcc	cgc	1008
Thr	Ser	Glu	Asp	Gly	Lys	Val	Gln	Val	Thr	Arg	Pro	Asp	Gln	Ala	Arg	
				325					330					335		
atg	gac	att	agg	tta	gcc	aag	acc	ctg	gtc	ctg	atc	ctg	gtg	gtg	ttg	1056
Met	Asp	Ile	Arg	Leu	Ala	Lys	Thr	Leu	Val	Leu	Ile	Leu	Val	Val	Leu	
			340					345					350			
atc	atc	tgc	tgg	ggc	cct	ctg	ctt	gca	atc	atg	gtg	tat	gat	gtc	ttt	1104
Ile	Ile	Cys	Trp	Gly	Pro	Leu	Leu	Ala	Ile	Met	Val	Tyr	Asp	Val	Phe	
		355					360					365				
ggg	aag	atg	aac	aag	ctc	att	aag	acg	gtg	ttt	gca	ttc	tgc	agt	atg	1152
Gly	Lys	Met	Asn	Lys	Leu	Ile	Lys	Thr	Val	Phe	Ala	Phe	Cys	Ser	Met	
	370					375					380					
ctc	tgc	ctg	ctg	aac	tcc	acc	gtg	aac	ccc	atc	atc	tat	gct	ctg	agg	1200
Leu	Cys	Leu	Leu	Asn	Ser	Thr	Val	Asn	Pro	Ile	Ile	Tyr	Ala	Leu	Arg	
385					390					395					400	
agt	aag	gac	ctg	cga	cac	gct	ttc	cgg	agc	atg	ttt	ccc	tct	tgt	gaa	1248
Ser	Lys	Asp	Leu	Arg	His	Ala	Phe	Arg	Ser	Met	Phe	Pro	Ser	Cys	Glu	
				405					410					415		
ggc	act	gcg	cag	cct	ctg	gat	aac	tac	cgt	act	cga	gag	agg	agg	gcc	1296
Gly	Thr	Ala	Gln	Pro	Leu	Asp	Asn	Tyr	Arg	Thr	Arg	Glu	Arg	Arg	Ala	
			420					425					430			
cgc	ttc	gtg	tcc	aag	aaa	ggc	aac	tgc	aac	gtc	gcc	cac	aag	aac	att	1344
Arg	Phe	Val	Ser	Lys	Lys	Gly	Asn	Cys	Asn	Val	Ala	His	Lys	Asn	Ile	
		435					440					445				
cga	gag	cag	ggc	cgc	ttc	ctg	cag	gat	gtg	ttc	acc	acg	ctg	gtg	gac	1392

484															
Arg	Glu 450	Gln	Gly	Arg	Phe	Leu 455	Gln	Asp	Val	Phe	Thr 460	Thr	Leu	Val	Asp
ctc Leu 465	aaa Lys	tgg Trp	cca Pro	cac His	act Thr 470	ctg Leu	ctc Leu	att Ile	ttc Phe	acc Thr 475	atg Met	tcc Ser	ttc Phe	ctg Leu	tgc Cys 480
agc Ser	tgg Trp	ctg Leu	ctc Leu	ttt Phe 485	gcc Ala	atg Met	gtc Val	tgg Trp	tgg Trp 490	ctc Leu	atc Ile	gcc Ala	ttc Phe	gcc Ala 495	cac His
ggt Gly	gat Asp	ctc Leu	tat Tyr 500	gct Ala	tac Tyr	atg Met	gag Glu	aaa Lys 505	ggc Gly	atc Ile	acg Thr	gac Asp	ctg Leu 510	gcc Ala	ccc Pro
tac Tyr	cca Pro	tac Tyr 515	gat Asp	gta Val	cca Pro	gat Asp	tac Tyr 520	gcc Ala	gga Gly	gag Glu	ggc Gly	acc Thr 525	aat Asn	gtg Val	ccc Pro
tgc Cys	gtc Val 530	aca Thr	agc Ser	atc Ile	cac His	tcc Ser 535	ttt Phe	tca Ser	tct Ser	gcc Ala	ttc Phe 540	ctt Leu	ttc Phe	tcc Ser	atc Ile
gag Glu 545	gtc Val	cag Gln	gtg Val	acc Thr	att Ile 550	ggt Gly	ttc Phe	ggc Gly	ggg Gly	cgc Arg 555	atg Met	gtg Val	aca Thr	gag Glu	gaa Glu 560
tgt Cys	ccc Pro	ctg Leu	gcc Ala	atc Ile 565	ctc Leu	att Ile	ctc Leu	att Ile	gtg Val 570	cag Gln	aat Asn	atc Ile	gtc Val	ggg Gly 575	ctg Leu
atg Met	atc Ile	aac Asn	gcc Ala 580	atc Ile	atg Met	ctg Leu	ggc Gly	tgc Cys 585	atc Ile	ttc Phe	atg Met	aaa Lys	acg Thr 590	gcc Ala	cag Gln
gca Ala	cat His	cgg Arg 595	cgg Arg	gca Ala	gaa Glu	acc Thr	ctc Leu 600	atc Ile	ttc Phe	agc Ser	aag Lys	cat His 605	gct Ala	gtg Val	atc Ile
acc Thr	ctg Leu 610	cgc Arg	cat His	ggc Gly	cgc Arg	ctg Leu 615	tgc Cys	ttc Phe	atg Met	ctg Leu	cgc Arg 620	gta Val	ggg Gly	gac Asp	ctc Leu
cga Arg 625	aag Lys	agc Ser	atg Met	atc Ile	att Ile 630	agc Ser	gcc Ala	acc Thr	atc Ile	cac His 635	atg Met	cag Gln	gtg Val	gtg Val	cgc Arg 640
aag Lys	acc Thr	acc Thr	agc Ser	ccc Pro 645	gag Glu	ggc Gly	gaa Glu	gtt Val	gtg Val 650	cct Pro	ctc Leu	cac His	cag Gln	gta Val 655	gac Asp
atc Ile	ccc Pro	atg Met	gag Glu 660	aat Asn	ggc Gly	gtg Val	ggt Gly	ggt Gly 665	aac Asn	ggc Gly	atc Ile	ttc Phe	ctg Leu 670	gtg Val	gcc Ala
cca Pro	ctc Leu	atc Ile 675	atc Ile	tac Tyr	cac His	gtc Val	atc Ile 680	gac Asp	tcc Ser	aac Asn	agc Ser	ccg Pro 685	ctc Leu	tac Tyr	gac Asp
ctg Leu	gct Ala 690	cct Pro	agt Ser	gac Asp	ctg Leu	cac His 695	cac His	cac His	cag Gln	gac Asp	ctg Leu 700	gag Glu	atc Ile	att Ile	gtc Val
atc Ile 705	ttg Leu	gaa Glu	ggc Gly	gtg Val	gta Val 710	gaa Glu	acc Thr	acg Thr	ggc Gly	atc Ile 715	acc Thr	acc Thr	cag Gln	gcc Ala	cgc Arg 720
acc Thr	tcc Ser	tac Tyr	cta Leu	gct Ala	gac Asp	gag Glu	att Ile	cta Leu	tgg Trp	ggg Gly	cag Gln	cgc Arg	ttt Phe	gtc Val	ccc Pro

										485										
										730			735							
att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	2256				
Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe					
			740				745						750							
ggt	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	2304				
Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu					
			755				760						765							
gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	2352				
Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg					
			770				775						780							
ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	2400				
Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys					
			785				790						800							
ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc								2427				
Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser												
			805																	

<210> 202
 <211> 809
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 202

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

Pro Leu Thr Ser Phe Arg Gly Ser Pro Phe Gln Glu Lys Met Thr Ala
50 55 60

Gly Asp Asn Pro Gln Leu Val Pro Ala Asp Gln Val Asn Ile Thr Glu
65 70 75 80

Phe Tyr Asn Lys Ser Leu Ser Ser Phe Lys Glu Asn Glu Glu Asn Ile
85 90 95

Gln Cys Gly Glu Asn Phe Met Asp Ile Glu Cys Phe Met Val Leu Asn
100 105 110

Pro Ser Gln Gln Leu Ala Ile Ala Val Leu Ser Leu Thr Leu Gly Thr
115 120 125

Phe Thr Val Leu Glu Asn Leu Leu Val Leu Cys Val Ile Leu His Ser
130 135 140

Arg Ser Leu Arg Cys Arg Pro Ser Tyr His⁴⁸⁶ Phe Ile Gly Ser Leu Ala
 145 150 155 160
 Val Ala Asp Leu¹⁶⁵ Leu Gly Ser Val Ile Phe Val Tyr Ser Phe Ile Asp
 170 175
 Phe His Val¹⁸⁰ Phe His Arg Lys Asp Ser Arg Asn Val Phe Leu Phe Lys
 185 190
 Leu Gly Gly Val Thr Ala Ser Phe Thr Ala Ser Val Gly Ser Leu Phe
 195 200 205
 Leu Thr Ala Ile Asp Arg Tyr Ile Ser Ile His Arg Pro Leu Ala Tyr
 210 215 220
 Lys Arg Ile Val Thr Arg Pro Lys Ala Val Val Ala Phe Cys Leu Met
 225 230 235 240
 Trp Thr Ile Ala Ile Val Ile Ala Val Leu Pro Leu Leu Gly Trp Asn
 245 250 255
 Cys Glu Lys Leu Gln Ser Val Cys Ser Asp Ile Phe Pro His Ile Asp
 260 265 270
 Glu Thr Tyr Leu Met Phe Trp Ile Gly Val Thr Ser Val Leu Leu Leu
 275 280 285
 Phe Ile Val Tyr Ala Tyr Met Tyr Ile Leu Trp Lys Ala His Ser His
 290 295 300
 Ala Val Arg Met Ile Gln Arg Gly Thr Gln Lys Ser Ile Ile Ile His
 305 310 315 320
 Thr Ser Glu Asp Gly Lys Val Gln Val Thr Arg Pro Asp Gln Ala Arg
 325 330 335
 Met Asp Ile Arg Leu Ala Lys Thr Leu Val Leu Ile Leu Val Val Leu
 340 345 350
 Ile Ile Cys Trp Gly Pro Leu Leu Ala Ile Met Val Tyr Asp Val Phe
 355 360 365
 Gly Lys Met Asn Lys Leu Ile Lys Thr Val Phe Ala Phe Cys Ser Met
 370 375 380
 Leu Cys Leu Leu Asn Ser Thr Val Asn Pro Ile Ile Tyr Ala Leu Arg
 385 390 395 400
 Ser Lys Asp Leu Arg His Ala Phe Arg Ser Met Phe Pro Ser Cys Glu
 405 410 415
 Gly Thr Ala Gln Pro Leu Asp Asn Tyr Arg Thr Arg Glu Arg Arg Ala

420 425 487 430
 Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile
 435 440 445
 Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp
 450 455 460
 Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys
 465 470 475 480
 Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His
 485 490 495
 Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro
 500 505 510
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro
 515 520 525
 Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile
 530 535 540
 Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu
 545 550 555 560
 Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu
 565 570 575
 Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln
 580 585 590
 Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile
 595 600 605
 Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu
 610 615 620
 Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg
 625 630 635 640
 Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp
 645 650 655
 Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala
 660 665 670
 Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp
 675 680 685
 Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val
 690 695 700

Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg
705 710 715 720

Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro
725 730 735

Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe
740 745 750

Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu
755 760 765

Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg
770 775 780

Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys
785 790 795 800

Phe Ser Ile Ser Pro Asp Ser Leu Ser
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<210> 203
<211> 2355
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2355)

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Met Ala Ser Leu Ser Gln Leu Ser Ser His Leu Asn Tyr Thr Cys Gly
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gca gag aac tcc aca ggt gcc agc cag gcc cgc cca cat gcc tac tat 96
Ala Glu Asn Ser Thr Gly Ala Ser Gln Ala Arg Pro His Ala Tyr Tyr
20 25 30

gcc ctc tcc tac tgc gcg ctc atc ctg gcc atc gtc ttc ggc aat ggc 144
Ala Leu Ser Tyr Cys Ala Leu Ile Leu Ala Ile Val Phe Gly Asn Gly
35 40 45

ctg gtg tgc atg gct gtg ctg aag gag cgg gcc ctg cag act acc acc 192
Leu Val Cys Met Ala Val Leu Lys Glu Arg Ala Leu Gln Thr Thr Thr
50 55 60

aac tac tta gta gtg agc ctg gct gtg gca gac ttg ctg gtg gcc acc 240
Asn Tyr Leu Val Val Ser Leu Ala Val Ala Asp Leu Leu Val Ala Thr
65 70 75 80

ttg gtg atg ccc tgg gtg gta tac ctg gag gtg aca ggt gga gtc tgg 288
Leu Val Met Pro Trp Val Val Tyr Leu Glu Val Thr Gly Gly Val Trp
85 90 95

aat ttc agc cgc att tgc tgt gat gtt ttt gtc acc ctg gat gtc atg 336

489															
Asn	Phe	Ser	Arg 100	Ile	Cys	Cys	Asp	Val 105	Phe	Val	Thr	Leu	Asp 110	Val	Met
atg Met	tgt Cys	aca Thr 115	gcc Ala	agc Ser	atc Ile	ctt Leu	aat Asn 120	ctc Leu	tgt Cys	gcc Ala	atc Ile	agc Ser 125	ata Ile	gac Asp	agg Arg
tac Tyr	act Thr 130	gca Ala	gtg Val	gtc Val	atg Met	ccc Pro 135	gtt Val	cac His	tac Tyr	cag Gln	cat His 140	ggc Gly	acg Thr	gga Gly	cag Gln
agc Ser 145	tcc Ser	tgt Cys	cgg Arg	cgc Arg	gtg Val 150	gcc Ala	ctc Leu	atg Met	atc Ile	acg Thr 155	gcc Ala	gtc Val	tgg Trp	gta Val	ctg Leu 160
gcc Ala	ttt Phe	gct Ala	gtg Val	tcc Ser 165	tgc Cys	cct Pro	ctt Leu	ctg Leu	ttt Phe 170	ggc Gly	ttt Phe	aat Asn	acc Thr	aca Thr 175	ggg Gly
gac Asp	ccc Pro	act Thr	gtc Val 180	tgc Cys	tcc Ser	atc Ile	tcc Ser	aac Asn 185	cct Pro	gat Asp	ttt Phe	gtc Val	atc Ile 190	tac Tyr	tct Ser
tca Ser	gtg Val	gtg Val 195	tcc Ser	ttc Phe	tac Tyr	ctg Leu	ccc Pro 200	ttt Phe	gga Gly	gtg Val	act Thr	gtc Val 205	ctt Leu	gtc Val	tat Tyr
gcc Ala	aga Arg 210	atc Ile	tat Tyr	gtg Val	gtg Val	ctg Leu 215	aaa Lys	caa Gln	agg Arg	aga Arg	cgg Arg 220	aaa Lys	agg Arg	atc Ile	ctc Leu
act Thr 225	cga Arg	cag Gln	aac Asn	agt Ser	cag Gln 230	tgc Cys	aac Asn	agt Ser	gtc Val	agg Arg 235	cct Pro	ggc Gly	ttc Phe	ccc Pro	caa Gln 240
caa Gln	acc Thr	ctc Leu	tct Ser	cct Pro 245	gac Asp	ccg Pro	gca Ala	cat His	ctg Leu 250	gag Glu	ctg Leu	aag Lys	cgt Arg	tac Tyr 255	tac Tyr
agc Ser	atc Ile	tgc Cys	cag Gln 260	gac Asp	act Thr	gcc Ala	ttg Leu	ggt Gly 265	gga Gly	cca Pro	ggc Gly	ttc Phe	caa Gln 270	gaa Glu	aga Arg
gga Gly	gga Gly	gag Glu 275	tta Leu	aaa Lys	aga Arg	gag Glu	gag Glu 280	aag Lys	act Thr	cgg Arg	aat Asn	tcc Ser 285	ctg Leu	agt Ser	ccc Pro
acc Thr	ata Ile 290	gcg Ala	cct Pro	aag Lys	ctc Leu	agc Ser 295	tta Leu	gaa Glu	gtt Val	cga Arg	aag Lys 300	ctc Leu	agc Ser	aat Asn	ggc Gly
aga Arg 305	tta Leu	tcg Ser	aca Thr	tct Ser	ttg Leu 310	aag Lys	ctg Leu	ggg Gly	ccc Pro	ctg Leu 315	caa Gln	cct Pro	cgg Arg	gga Gly	gtg Val 320
cca Pro	ctt Leu	cgg Arg	gag Glu	aag Lys 325	aag Lys	gca Ala	acc Thr	caa Gln	atg Met 330	gtg Val	gcc Ala	att Ile	gtg Val	ctt Leu 335	ggg Gly
gcc Ala	ttc Phe	att Ile	gtc Val 340	tgc Cys	tgg Trp	ctg Leu	ccc Pro	ttc Phe 345	ttc Phe	ttg Leu	acc Thr	cat His	gtt Val 350	ctc Leu	aat Asn
acc Thr	cac His	tgc Cys 355	cag Gln	aca Thr	tgc Cys	cac His	gtg Val 360	tcc Ser	cca Pro	gag Glu	ctt Leu	tac Tyr 365	agt Ser	gcc Ala	acg Thr
aca Thr	tgg Trp	ctg Leu	ggc Gly	tac Tyr	gtg Val	aat Asn	agc Ser	gcc Ala	ctc Leu	aac Asn	cct Pro	gtg Val	atc Ile	tat Tyr	acc Thr

370				375				490				380				
acc Thr 385	ttc Phe	aat Asn	atc Ile	gag Glu	ttc Phe 390	cgg Arg	aaa Lys	gcc Ala	ttc Phe	ctc Leu 395	aag Lys	atc Ile	ctg Leu	tct Ser	tgc Cys 400	1200
tac Tyr	cgt Arg	act Thr	cga Arg	gag Glu 405	agg Arg	agg Arg	gcc Ala	cgc Arg	ttc Phe 410	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly 415	aac Asn	1248
tgc Cys	aac Asn	gtc Val	gcc Ala 420	cac His	aag Lys	aac Asn	att Ile	cga Arg 425	gag Glu	cag Gln	ggc Gly	cgc Arg	ttc Phe 430	ctg Leu	cag Gln	1296
gat Asp	gtg Val 435	ttc Phe	acc Thr	acg Thr	ctg Leu	gtg Val	gac Asp 440	ctc Leu	aaa Lys	tgg Trp	cca Pro	cac His 445	act Thr	ctg Leu	ctc Leu	1344
att Ile 450	ttc Phe	acc Thr	atg Met	tcc Ser	ttc Phe 455	ctg Leu	tgc Cys	agc Ser	tgg Trp	ctg Leu 460	ctc Leu	ttt Phe	gcc Ala	atg Met	gtc Val	1392
tgg Trp 465	tgg Trp	ctc Leu	atc Ile	gcc Ala	ttc Phe 470	gcc Ala	cac His	ggt Gly	gat Asp	ctc Leu 475	tat Tyr	gct Ala	tac Tyr	atg Met	gag Glu 480	1440
aaa Lys	ggc Gly	atc Ile	acg Thr	gac Asp 485	ctg Leu	gcc Ala	ccc Pro	tac Tyr	cca Pro 490	tac Tyr	gat Asp	gta Val	cca Pro	gat Asp 495	tac Tyr	1488
gcc Ala	gga Gly	gag Glu	ggc Gly 500	acc Thr	aat Asn	gtg Val	ccc Pro	tgc Cys 505	gtc Val	aca Thr	agc Ser	atc Ile	cac His 510	tcc Ser	ttt Phe	1536
tca Ser	tct Ser	gcc Ala 515	ttc Phe	ctt Leu	ttc Phe	tcc Ser	atc Ile 520	gag Glu	gtc Val	cag Gln	gtg Val	acc Thr 525	att Ile	ggc Gly	ttc Phe	1584
ggc Gly 530	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr	gag Glu 535	gaa Glu	tgt Cys	ccc Pro	ctg Leu	gcc Ala 540	atc Ile	ctc Leu	att Ile	ctc Leu	1632
att Ile 545	gtg Val	cag Gln	aat Asn	atc Ile	gtc Val 550	ggg Gly	ctg Leu	atg Met	atc Ile	aac Asn 555	gcc Ala	atc Ile	atg Met	ctg Leu	ggc Gly 560	1680
tgc Cys	atc Ile	ttc Phe	atg Met	aaa Lys 565	acg Thr	gcc Ala	cag Gln	gca Ala	cat His 570	cgg Arg	cgg Arg	gca Ala	gaa Glu	acc Thr 575	ctc Leu	1728
atc Ile	ttc Phe	agc Ser	aag Lys 580	cat His	gct Ala	gtg Val	atc Ile	acc Thr 585	ctg Leu	cgc Arg	cat His	ggc Gly	cgc Arg 590	ctg Leu	tgc Cys	1776
ttc Phe	atg Met	ctg Leu 595	cgc Arg	gta Val	ggg Gly	gac Asp	ctc Leu 600	cga Arg	aag Lys	agc Ser	atg Met	atc Ile 605	att Ile	agc Ser	gcc Ala	1824
acc Thr 610	atc Ile	cac His	atg Met	cag Gln	gtg Val	gtg Val 615	cgc Arg	aag Lys	acc Thr	acc Thr	agc Ser 620	ccc Pro	gag Glu	ggc Gly	gaa Glu	1872
gtt Val 625	gtg Val	cct Pro	ctc Leu	cac His	cag Gln 630	gta Val	gac Asp	atc Ile	ccc Pro	atg Met 635	gag Glu	aat Asn	ggc Gly	gtg Val	ggc Gly 640	1920
ggc Gly	aac Asn	ggc Gly	atc Ile	ttc Phe 645	ctg Leu	gtg Val	gcc Ala	cca Pro	ctc Leu 650	atc Ile	atc Ile	tac Tyr	cac His	gtc Val 655	atc Ile	1968

gac tcc aac agc ccg ctc tac gac ctg gct cct agt gac ctg cac cac	2016
Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His	
660 665 670	
cac cag gac ctg gag atc att gtc atc ttg gaa ggc gtg gta gaa acc	2064
His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr	
675 680 685	
acg ggc atc acc acc cag gcc cgc acc tcc tac cta gct gac gag att	2112
Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile	
690 695 700	
cta tgg ggg cag cgc ttt gtc ccc att gtg gcc gag gag gac ggc cgc	2160
Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg	
705 710 715 720	
tat tct gtg gac tac tcc aaa ttt ggt aac acc att aaa gtg ccc aca	2208
Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr	
725 730 735	
cca ctc tgc aca gcc cgc cag ctt gat gag gac cgc agt ctg ctg gat	2256
Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp	
740 745 750	
gcc ctg acc ctc gcc tcg tcg cgg ggg ccc ctg cgc aag cgc agt gtg	2304
Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val	
755 760 765	
gct gtg gcg aag gcc aag ccc aag ttt agc atc tct cca gat tcc ttg	2352
Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu	
770 775 780	
tcc	2355
Ser	
785	

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 <212> PRT
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 <223> Synthetic Construct
 <400> 204

Met Ala Ser Leu Ser Gln Leu Ser Ser His Leu Asn Tyr Thr Cys Gly
1 5 10 15
Ala Glu Asn Ser Thr Gly Ala Ser Gln Ala Arg Pro His Ala Tyr Tyr
20 25 30
Ala Leu Ser Tyr Cys Ala Leu Ile Leu Ala Ile Val Phe Gly Asn Gly
35 40 45
Leu Val Cys Met Ala Val Leu Lys Glu Arg Ala Leu Gln Thr Thr Thr
50 55 60
Asn Tyr Leu Val Val Ser Leu Ala Val Ala Asp Leu Leu Val Ala Thr
65 70 75 80
Leu Val Met Pro Trp Val Val Tyr Leu Glu Val Thr Gly Gly Val Trp

492

85	90	95
Asn Phe Ser Arg ₁₀₀ Ile Cys Cys Asp Val ₁₀₅ Phe Val Thr Leu Asp ₁₁₀ Val Met		
Met Cys Thr ₁₁₅ Ala Ser Ile Leu Asn ₁₂₀ Leu Cys Ala Ile Ser ₁₂₅ Ile Asp Arg		
Tyr Thr ₁₃₀ Ala Val Val Met Pro ₁₃₅ Val His Tyr Gln His ₁₄₀ Gly Thr Gly Gln		
Ser ₁₄₅ Ser Cys Arg Arg Val ₁₅₀ Ala Leu Met Ile Thr ₁₅₅ Ala Val Trp Val Leu ₁₆₀		
Ala Phe Ala Val Ser ₁₆₅ Cys Pro Leu Leu Phe ₁₇₀ Gly Phe Asn Thr Thr ₁₇₅ Gly		
Asp Pro Thr Val ₁₈₀ Cys Ser Ile Ser Asn ₁₈₅ Pro Asp Phe Val Ile ₁₉₀ Tyr Ser		
Ser Val Val ₁₉₅ Ser Phe Tyr Leu Pro ₂₀₀ Phe Gly Val Thr Val ₂₀₅ Leu Val Tyr		
Ala Arg ₂₁₀ Ile Tyr Val Val Leu ₂₁₅ Lys Gln Arg Arg Arg ₂₂₀ Lys Arg Ile Leu		
Thr ₂₂₅ Arg Gln Asn Ser Gln ₂₃₀ Cys Asn Ser Val Arg ₂₃₅ Pro Gly Phe Pro Gln ₂₄₀		
Gln Thr Leu Ser Pro ₂₄₅ Asp Pro Ala His Leu ₂₅₀ Glu Leu Lys Arg Tyr ₂₅₅ Tyr		
Ser Ile Cys Gln ₂₆₀ Asp Thr Ala Leu Gly ₂₆₅ Gly Pro Gly Phe Gln ₂₇₀ Glu Arg		
Gly Gly Glu ₂₇₅ Leu Lys Arg Glu Glu ₂₈₀ Lys Thr Arg Asn Ser ₂₈₅ Leu Ser Pro		
Thr Ile ₂₉₀ Ala Pro Lys Leu Ser ₂₉₅ Leu Glu Val Arg Lys ₃₀₀ Leu Ser Asn Gly		
Arg ₃₀₅ Leu Ser Thr Ser Leu ₃₁₀ Lys Leu Gly Pro Leu ₃₁₅ Gln Pro Arg Gly Val ₃₂₀		
Pro Leu Arg Glu Lys ₃₂₅ Lys Ala Thr Gln Met ₃₃₀ Val Ala Ile Val Leu ₃₃₅ Gly		
Ala Phe Ile Val ₃₄₀ Cys Trp Leu Pro Phe ₃₄₅ Phe Leu Thr His Val ₃₅₀ Leu Asn		
Thr His Cys ₃₅₅ Gln Thr Cys His Val ₃₆₀ Ser Pro Glu Leu Tyr ₃₆₅ Ser Ala Thr		

Thr Trp Leu Gly Tyr Val Asn Ser Ala Leu Asn Pro Val Ile Tyr Thr
 370 375 380
 Thr Phe Asn Ile Glu Phe Arg Lys Ala Phe Leu Lys Ile Leu Ser Cys
 385 390 395 400
 Tyr Arg Thr Arg Glu Arg Arg Ala Arg Phe Val Ser Lys Lys Gly Asn
 405 410 415
 Cys Asn Val Ala His Lys Asn Ile Arg Glu Gln Gly Arg Phe Leu Gln
 420 425 430
 Asp Val Phe Thr Thr Leu Val Asp Leu Lys Trp Pro His Thr Leu Leu
 435 440 445
 Ile Phe Thr Met Ser Phe Leu Cys Ser Trp Leu Leu Phe Ala Met Val
 450 455 460
 Trp Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu
 465 470 475 480
 Lys Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr
 485 490 495
 Ala Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe
 500 505 510
 Ser Ser Ala Phe Leu Phe Ser Ile Glu Val Gln Val Thr Ile Gly Phe
 515 520 525
 Gly Gly Arg Met Val Thr Glu Glu Cys Pro Leu Ala Ile Leu Ile Leu
 530 535 540
 Ile Val Gln Asn Ile Val Gly Leu Met Ile Asn Ala Ile Met Leu Gly
 545 550 555 560
 Cys Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu
 565 570 575
 Ile Phe Ser Lys His Ala Val Ile Thr Leu Arg His Gly Arg Leu Cys
 580 585 590
 Phe Met Leu Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala
 595 600 605
 Thr Ile His Met Gln Val Val Arg Lys Thr Thr Ser Pro Glu Gly Glu
 610 615 620
 Val Val Pro Leu His Gln Val Asp Ile Pro Met Glu Asn Gly Val Gly
 625 630 635 640

Gly Asn Gly Ile Phe Leu Val Ala Pro Leu Ile Ile Tyr His Val Ile
645 650 655

Asp Ser Asn Ser Pro Leu Tyr Asp Leu Ala Pro Ser Asp Leu His His
660 665 670

His Gln Asp Leu Glu Ile Ile Val Ile Leu Glu Gly Val Val Glu Thr
675 680 685

Thr Gly Ile Thr Thr Gln Ala Arg Thr Ser Tyr Leu Ala Asp Glu Ile
690 695 700

Leu Trp Gly Gln Arg Phe Val Pro Ile Val Ala Glu Glu Asp Gly Arg
705 710 715 720

Tyr Ser Val Asp Tyr Ser Lys Phe Gly Asn Thr Ile Lys Val Pro Thr
725 730 735

Pro Leu Cys Thr Ala Arg Gln Leu Asp Glu Asp Arg Ser Leu Leu Asp
740 745 750

Ala Leu Thr Leu Ala Ser Ser Arg Gly Pro Leu Arg Lys Arg Ser Val
755 760 765

Ala Val Ala Lys Ala Lys Pro Lys Phe Ser Ile Ser Pro Asp Ser Leu
770 775 780

Ser
785

<210> 205
<211> 2235
<212> DNA
<213> Artificial sequence

<220>
<223> hybrid sequence

<220>
<221> CDS
<222> (1)..(2235)

<400> 205
atg ctg tcc aca tct cgt tct cgg ttt atc aga aat acc aac gag agc 48
Met Leu Ser Thr Ser Arg Ser Arg Phe Ile Arg Asn Thr Asn Glu Ser
1 5 10 15

ggt gaa gaa gtc acc acc ttt ttt gat tat gat tac ggt gct ccc tgt 96
Gly Glu Glu Val Thr Thr Phe Phe Asp Tyr Asp Tyr Gly Ala Pro Cys
20 25 30

cat aaa ttt gac gtg aag caa att ggg gcc caa ctc ctg cct ccg ctc 144
His Lys Phe Asp Val Lys Gln Ile Gly Ala Gln Leu Leu Pro Pro Leu
35 40 45

tac tcg ctg gtg ttc atc ttt ggt ttt gtg ggc aac atg ctg gtc gtc 192
Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn Met Leu Val Val

50					55					495	60					
ctc Leu 65	atc Ile	tta Leu	ata Ile	aac Asn	tgc Cys 70	aaa Lys	aag Lys	ctg Leu	aag Lys	tgc Cys 75	ttg Leu	act Thr	gac Asp	att Ile	tac Tyr 80	240
ctg Leu	ctc Leu	aac Asn	ctg Leu	gcc Ala 85	atc Ile	tct Ser	gat Asp	ctg Leu	ctt Leu 90	ttt Phe	ctt Leu	att Ile	act Thr	ctc Leu 95	cca Pro	288
ttg Leu	tgg Trp	gct Ala	cac His 100	tct Ser	gct Ala	gca Ala	aat Asn	gag Glu 105	tgg Trp	gtc Val	ttt Phe	ggg Gly	aat Asn 110	gca Ala	atg Met	336
tgc Cys	aaa Lys	tta Leu 115	ttc Phe	aca Thr	ggg Gly	ctg Leu	tat Tyr 120	cac His	atc Ile	ggg Gly	tat Tyr	ttt Phe 125	ggc Gly	gga Gly	atc Ile	384
ttc Phe	ttc Phe 130	atc Ile	atc Ile	ctc Leu	ctg Leu	aca Thr 135	atc Ile	gat Asp	aga Arg	tac Tyr	ctg Leu 140	gct Ala	att Ile	gtc Val	cat His	432
gct Ala 145	gtg Val	ttt Phe	gct Ala	tta Leu	aaa Lys 150	gcc Ala	agg Arg	acg Thr	gtc Val	acc Thr 155	ttt Phe	ggg Gly	gtg Val	gtg Val	aca Thr 160	480
agt Ser	gtg Val	atc Ile	acc Thr	tgg Trp 165	ttg Leu	gtg Val	gct Ala	gtg Val	ttt Phe 170	gct Ala	tct Ser	gtc Val	cca Pro	gga Gly 175	atc Ile	528
atc Ile	ttt Phe	act Thr	aaa Lys 180	tgc Cys	cag Gln	aaa Lys	gaa Glu	gat Asp 185	tct Ser	ggt Val	tat Tyr	gtc Val	tgt Cys 190	ggc Gly	cct Pro	576
tat Tyr	ttt Phe	cca Pro 195	cga Arg	gga Gly	tgg Trp	aat Asn	aat Asn 200	ttc Phe	cac His	aca Thr	ata Ile	atg Met 205	agg Arg	aac Asn	att Ile	624
ttg Leu	ggg Gly 210	ctg Leu	gtc Val	ctg Leu	ccg Pro	ctg Leu 215	ctc Leu	atc Ile	atg Met	gtc Val	atc Ile 220	tgc Cys	tac Tyr	tcg Ser	gga Gly	672
atc Ile 225	ctg Leu	aaa Lys	acc Thr	ctg Leu	ctt Leu 230	cgg Arg	tgt Cys	cga Arg	aac Asn	gag Glu 235	aag Lys	aag Lys	agg Arg	cat His	agg Arg 240	720
gca Ala	gtg Val	aga Arg	gtc Val	atc Ile 245	ttc Phe	acc Thr	atc Ile	atg Met	att Ile 250	ggt Val	tac Tyr	ttt Phe	ctc Leu	ttc Phe 255	tgg Trp	768
act Thr	ccc Pro	tat Tyr	aac Asn 260	att Ile	gtc Val	att Ile	ctc Leu	ctg Leu 265	aac Asn	acc Thr	ttc Phe	cag Gln	gaa Glu 270	ttc Phe	ttc Phe	816
ggc Gly	ctg Leu	agt Ser 275	aac Asn	tgt Cys	gaa Glu	agc Ser	acc Thr 280	agt Ser	caa Gln	ctg Leu	gac Asp	caa Gln 285	gcc Ala	acg Thr	cag Gln	864
gtg Val	aca Thr 290	gag Glu	act Thr	ctt Leu	ggg Gly	atg Met 295	act Thr	cac His	tgc Cys	tgc Cys	atc Ile 300	aat Asn	ccc Pro	atc Ile	atc Ile	912
tat Tyr 305	gcc Ala	ttc Phe	gtt Val	ggg Gly	gag Glu 310	aag Lys	ttc Phe	aga Arg	agg Arg	tat Tyr 315	ctc Leu	tcg Ser	gtg Val	ttc Phe	ttc Phe 320	960
cga Arg	aag Lys	cac His	atc Ile	acc Thr 325	aag Lys	cgc Arg	ttc Phe	tgc Cys	aaa Lys 330	caa Gln	tgt Cys	cca Pro	gtt Val	ttc Phe 335	tac Tyr	1008

agg Arg	gag Glu	aca Thr	gtg Val 340	gat Asp	gga Gly	gtg Val	act Thr	tca Ser 345	aca Thr	aac Asn	acg Thr	cct Pro	tcc Ser 350	act Thr	ggg Gly	1056
gag Glu	cag Gln	gaa Glu 355	gtc Val	tcg Ser	gct Ala	ggt Gly	tta Leu 360	tac Tyr	cgt Arg	act Thr	cga Arg	gag Glu 365	agg Arg	agg Arg	gcc Ala	1104
cgc Arg	ttc Phe 370	gtg Val	tcc Ser	aag Lys	aaa Lys	ggc Gly 375	aac Asn	tgc Cys	aac Asn	gtc Val	gcc Ala 380	cac His	aag Lys	aac Asn	att Ile	1152
cga Arg 385	gag Glu	cag Gln	ggc Gly	cgc Arg	ttc Phe 390	ctg Leu	cag Gln	gat Asp	gtg Val	ttc Phe 395	acc Thr	acg Thr	ctg Leu	gtg Val	gac Asp 400	1200
ctc Leu	aaa Lys	tgg Trp	cca Pro	cac His 405	act Thr	ctg Leu	ctc Leu	att Ile	ttc Phe 410	acc Thr	atg Met	tcc Ser	ttc Phe 415	ctg Leu	tgc Cys	1248
agc Ser	tgg Trp	ctg Leu	ctc Leu 420	ttt Phe	gcc Ala	atg Met	gtc Val	tgg Trp 425	tgg Trp	ctc Leu	atc Ile	gcc Ala	ttc Phe 430	gcc Ala	cac His	1296
ggt Gly	gat Asp	ctc Leu 435	tat Tyr	gct Ala	tac Tyr	atg Met	gag Glu 440	aaa Lys	ggc Gly	atc Ile	acg Thr	gac Asp 445	ctg Leu	gcc Ala	ccc Pro	1344
tac Tyr	cca Pro 450	tac Tyr	gat Asp	gta Val	cca Pro	gat Asp 455	tac Tyr	gcc Ala	gga Gly	gag Glu	ggc Gly 460	acc Thr	aat Asn	gtg Val	ccc Pro	1392
tgc Cys 465	gtc Val	aca Thr	agc Ser	atc Ile	cac His 470	tcc Ser	ttt Phe	tca Ser	tct Ser	gcc Ala 475	ttc Phe	ctt Leu	ttc Phe	tcc Ser	atc Ile 480	1440
gag Glu	gtc Val	cag Gln	gtg Val 485	acc Thr	att Ile	ggt Gly	ttc Phe	ggc Gly 490	ggg Gly	cgc Arg	atg Met	gtg Val	aca Thr	gag Glu 495	gaa Glu	1488
tgt Cys	ccc Pro	ctg Leu	gcc Ala 500	atc Ile	ctc Leu	att Ile	ctc Leu	att Ile 505	gtg Val	cag Gln	aat Asn	atc Ile	gtc Val 510	ggg Gly	ctg Leu	1536
atg Met	atc Ile	aac Asn 515	gcc Ala	atc Ile	atg Met	ctg Leu	ggc Gly 520	tgc Cys	atc Ile	ttc Phe	atg Met	aaa Lys 525	acg Thr	gcc Ala	cag Gln	1584
gca Ala	cat His 530	cgg Arg	cgg Arg	gca Ala	gaa Glu	acc Thr 535	ctc Leu	atc Ile	ttc Phe	agc Ser	aag Lys 540	cat His	gct Ala	gtg Val	atc Ile	1632
acc Thr 545	ctg Leu	cgc Arg	cat His	ggc Gly	cgc Arg 550	ctg Leu	tgc Cys	ttc Phe	atg Met	ctg Leu 555	cgc Arg	gta Val	ggg Gly	gac Asp	ctc Leu 560	1680
cga Arg	aag Lys	agc Ser	atg Met	atc Ile 565	att Ile	agc Ser	gcc Ala	acc Thr	atc Ile 570	cac His	atg Met	cag Gln	gtg Val	gtg Val 575	cgc Arg	1728
aag Lys	acc Thr	acc Thr	agc Ser 580	ccc Pro	gag Glu	ggc Gly	gaa Glu	gtt Val 585	gtg Val	cct Pro	ctc Leu	cac His	cag Gln 590	gta Val	gac Asp	1776
atc Ile	ccc Pro	atg Met 595	gag Glu	aat Asn	ggc Gly	gtg Val	ggt Gly 600	ggt Gly	aac Asn	ggc Gly	atc Ile	ttc Phe 605	ctg Leu	gtg Val	gcc Ala	1824

497

cca	ctc	atc	atc	tac	cac	gtc	atc	gac	tcc	aac	agc	ccg	ctc	tac	gac	1872
Pro	Leu	Ile	Ile	Tyr	His	Val	Ile	Asp	Ser	Asn	Ser	Pro	Leu	Tyr	Asp	
	610					615					620					
ctg	gct	cct	agt	gac	ctg	cac	cac	cac	cag	gac	ctg	gag	atc	att	gtc	1920
Leu	Ala	Pro	Ser	Asp	Leu	His	His	His	Gln	Asp	Leu	Glu	Ile	Ile	Val	
625					630					635					640	
atc	ttg	gaa	ggc	gtg	gta	gaa	acc	acg	ggc	atc	acc	acc	cag	gcc	cgc	1968
Ile	Leu	Glu	Gly	Val	Val	Glu	Thr	Thr	Gly	Ile	Thr	Thr	Gln	Ala	Arg	
				645					650					655		
acc	tcc	tac	cta	gct	gac	gag	att	cta	tgg	ggg	cag	cgc	ttt	gtc	ccc	2016
Thr	Ser	Tyr	Leu	Ala	Asp	Glu	Ile	Leu	Trp	Gly	Gln	Arg	Phe	Val	Pro	
			660					665					670			
att	gtg	gcc	gag	gag	gac	ggc	cgc	tat	tct	gtg	gac	tac	tcc	aaa	ttt	2064
Ile	Val	Ala	Glu	Glu	Asp	Gly	Arg	Tyr	Ser	Val	Asp	Tyr	Ser	Lys	Phe	
		675					680					685				
ggt	aac	acc	att	aaa	gtg	ccc	aca	cca	ctc	tgc	aca	gcc	cgc	cag	ctt	2112
Gly	Asn	Thr	Ile	Lys	Val	Pro	Thr	Pro	Leu	Cys	Thr	Ala	Arg	Gln	Leu	
	690					695					700					
gat	gag	gac	cgc	agt	ctg	ctg	gat	gcc	ctg	acc	ctc	gcc	tcg	tcg	cgg	2160
Asp	Glu	Asp	Arg	Ser	Leu	Leu	Asp	Ala	Leu	Thr	Leu	Ala	Ser	Ser	Arg	
705					710					715					720	
ggg	ccc	ctg	cgc	aag	cgc	agt	gtg	gct	gtg	gcg	aag	gcc	aag	ccc	aag	2208
Gly	Pro	Leu	Arg	Lys	Arg	Ser	Val	Ala	Val	Ala	Lys	Ala	Lys	Pro	Lys	
				725					730					735		
ttt	agc	atc	tct	cca	gat	tcc	ttg	tcc								2235
Phe	Ser	Ile	Ser	Pro	Asp	Ser	Leu	Ser								
			740					745								

<210> 206
 <211> 745
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Synthetic Construct

<400> 206

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

Gly Glu Glu Val Thr Thr Phe Phe Asp Tyr Asp Tyr Gly Ala Pro Cys
 20 25 30

His Lys Phe Asp Val Lys Gln Ile Gly Ala Gln Leu Leu Pro Pro Leu
 35 40 45

Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn Met Leu Val Val
 50 55 60

Leu Ile Leu Ile Asn Cys Lys Lys Leu Lys Cys Leu Thr Asp Ile Tyr
 65 70 75 80

Leu Leu Asn Leu Ala Ile Ser Asp Leu Leu Phe Leu Ile Thr Leu Pro
 85 90 95

Leu Trp Ala His Ser Ala Ala Asn Glu Trp Val Phe Gly Asn Ala Met
 100 105 110
 Cys Lys Leu Phe Thr Gly Leu Tyr His Ile Gly Tyr Phe Gly Gly Ile
 115 120 125
 Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu Ala Ile Val His
 130 135 140
 Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe Gly Val Val Thr
 145 150 155 160
 Ser Val Ile Thr Trp Leu Val Ala Val Phe Ala Ser Val Pro Gly Ile
 165 170 175
 Ile Phe Thr Lys Cys Gln Lys Glu Asp Ser Val Tyr Val Cys Gly Pro
 180 185 190
 Tyr Phe Pro Arg Gly Trp Asn Asn Phe His Thr Ile Met Arg Asn Ile
 195 200 205
 Leu Gly Leu Val Leu Pro Leu Leu Ile Met Val Ile Cys Tyr Ser Gly
 210 215 220
 Ile Leu Lys Thr Leu Leu Arg Cys Arg Asn Glu Lys Lys Arg His Arg
 225 230 235 240
 Ala Val Arg Val Ile Phe Thr Ile Met Ile Val Tyr Phe Leu Phe Trp
 245 250 255
 Thr Pro Tyr Asn Ile Val Ile Leu Leu Asn Thr Phe Gln Glu Phe Phe
 260 265 270
 Gly Leu Ser Asn Cys Glu Ser Thr Ser Gln Leu Asp Gln Ala Thr Gln
 275 280 285
 Val Thr Glu Thr Leu Gly Met Thr His Cys Cys Ile Asn Pro Ile Ile
 290 295 300
 Tyr Ala Phe Val Gly Glu Lys Phe Arg Arg Tyr Leu Ser Val Phe Phe
 305 310 315 320
 Arg Lys His Ile Thr Lys Arg Phe Cys Lys Gln Cys Pro Val Phe Tyr
 325 330 335
 Arg Glu Thr Val Asp Gly Val Thr Ser Thr Asn Thr Pro Ser Thr Gly
 340 345 350
 Glu Gln Glu Val Ser Ala Gly Leu Tyr Arg Thr Arg Glu Arg Arg Ala
 355 360 365

Arg Phe Val Ser Lys Lys Gly Asn Cys Asn Val Ala His Lys Asn Ile
 370 375 380
 Arg Glu Gln Gly Arg Phe Leu Gln Asp Val Phe Thr Thr Leu Val Asp
 385 390 395 400
 Leu Lys Trp Pro His Thr Leu Leu Ile Phe Thr Met Ser Phe Leu Cys
 405 410 415
 Ser Trp Leu Leu Phe Ala Met Val Trp Trp Leu Ile Ala Phe Ala His
 420 425 430
 Gly Asp Leu Tyr Ala Tyr Met Glu Lys Gly Ile Thr Asp Leu Ala Pro
 435 440 445
 Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Glu Gly Thr Asn Val Pro
 450 455 460
 Cys Val Thr Ser Ile His Ser Phe Ser Ser Ala Phe Leu Phe Ser Ile
 465 470 475 480
 Glu Val Gln Val Thr Ile Gly Phe Gly Gly Arg Met Val Thr Glu Glu
 485 490 495
 Cys Pro Leu Ala Ile Leu Ile Leu Ile Val Gln Asn Ile Val Gly Leu
 500 505
 Met Ile Asn Ala Ile Met Leu Gly Cys Ile Phe Met Lys Thr Ala Gln
 515 520 525
 Ala His Arg Arg Ala Glu Thr Leu Ile Phe Ser Lys His Ala Val Ile
 530 535 540
 Thr Leu Arg His Gly Arg Leu Cys Phe Met Leu Arg Val Gly Asp Leu
 545 550 555 560
 Arg Lys Ser Met Ile Ile Ser Ala Thr Ile His Met Gln Val Val Arg
 565 570 575
 Lys Thr Thr Ser Pro Glu Gly Glu Val Val Pro Leu His Gln Val Asp
 580 585 590
 Ile Pro Met Glu Asn Gly Val Gly Gly Asn Gly Ile Phe Leu Val Ala
 595 600 605
 Pro Leu Ile Ile Tyr His Val Ile Asp Ser Asn Ser Pro Leu Tyr Asp
 610 615 620
 Leu Ala Pro Ser Asp Leu His His His Gln Asp Leu Glu Ile Ile Val
 625 630 635 640

Ile Leu Glu Gly Val Val Glu Thr Thr Gly Ile Thr Thr Gln Ala Arg
 645 650 655
 Thr Ser Tyr Leu Ala Asp Glu Ile Leu Trp Gly Gln Arg Phe Val Pro
 660 665 670
 Ile Val Ala Glu Glu Asp Gly Arg Tyr Ser Val Asp Tyr Ser Lys Phe
 675 680 685
 Gly Asn Thr Ile Lys Val Pro Thr Pro Leu Cys Thr Ala Arg Gln Leu
 690 695 700
 Asp Glu Asp Arg Ser Leu Leu Asp Ala Leu Thr Leu Ala Ser Ser Arg
 705 710 715 720
 Gly Pro Leu Arg Lys Arg Ser Val Ala Val Ala Lys Ala Lys Pro Lys
 725 730 735
 Phe Ser Ile Ser Pro Asp Ser Leu Ser
 740 745

<210> 207
 <211> 391
 <212> PRT
 <213> Homo sapiens

<400> 207

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

Gly Phe Arg Cys Val Thr Glu Gln Cys Ala Thr Ala Ile Phe Leu Leu
145 150 155 160

Ile Phe Gln Ser Ile Leu Gly Val Ile Ile Asn Ser Phe Met Cys Gly
165 170 175

Ala Ile Leu Ala Lys Ile Ser Arg Pro Lys Lys Arg Ala Lys Thr Ile
180 185 190

Thr Phe Ser Lys Asn Ala Val Ile Ser Lys Arg Gly Gly Lys Leu Cys
195 200 205

Leu Leu Ile Arg Val Ala Asn Leu Arg Lys Ser Leu Leu Ile Gly Ser
210 215 220

His Ile Tyr Gly Lys Leu Leu Lys Thr Thr Val Thr Pro Glu Gly Glu
225 230 235 240

Thr Ile Ile Leu Asp Gln Ile Asn Ile Asn Phe Val Val Asp Ala Gly
245 250 255

Asn Glu Asn Leu Phe Phe Ile Ser Pro Leu Thr Ile Tyr His Val Ile
260 265 270

Asp His Asn Ser Pro Phe Phe His Met Ala Ala Glu Thr Leu Leu Gln
275 280 285

Gln Asp Phe Glu Leu Val Val Phe Leu Asp Gly Thr Val Glu Ser Thr
290 295 300

Ser Ala Thr Cys Gln Val Arg Thr Ser Tyr Val Pro Glu Glu Val Leu
305 310 315 320

Trp Gly Tyr Arg Phe Ala Pro Ile Val Ser Lys Thr Lys Glu Gly Lys
325 330 335

Tyr Arg Val Asp Phe His Asn Phe Ser Lys Thr Val Glu Val Glu Thr
340 345 350

Pro His Cys Ala Met Cys Leu Tyr Asn Glu Lys Asp Val Arg Ala Arg
355 360 365

Met Lys Arg Gly Tyr Asp Asn Pro Asn Phe Ile Leu Ser Glu Val Asn
370 375 380

Glu Thr Asp Asp Thr Lys Met
385 390

<210> 208
<211> 427
<212> PRT

<213> Homo sapiens

<400> 208

Met Gly Ser Val Arg Thr Asn Arg Tyr Ser Ile Val Ser Ser Glu Glu
 1 5 10 15
 Asp Gly Met Lys Leu Ala Thr Met Ala Val Ala Asn Gly Phe Gly Asn
 20 25 30
 Gly Lys Ser Lys Val His Thr Arg Gln Gln Cys Arg Ser Arg Phe Val
 35 40 45
 Lys Lys Asp Gly His Cys Asn Val Gln Phe Ile Asn Val Gly Glu Lys
 50 55 60
 Gly Gln Arg Tyr Leu Ala Asp Ile Phe Thr Thr Cys Val Asp Ile Arg
 65 70 75 80
 Trp Arg Trp Met Leu Val Ile Phe Cys Leu Ala Phe Val Leu Ser Trp
 85 90 95
 Leu Phe Phe Gly Cys Val Phe Trp Leu Ile Ala Leu Leu His Gly Asp
 100 105 110
 Leu Asp Ala Ser Lys Glu Gly Lys Ala Cys Val Ser Glu Val Asn Ser
 115 120 125
 Phe Thr Ala Ala Phe Leu Phe Ser Ile Glu Thr Gln Thr Thr Ile Gly
 130 135 140
 Tyr Gly Phe Arg Cys Val Thr Asp Glu Cys Pro Ile Ala Val Phe Met
 145 150 155 160
 Val Val Phe Gln Ser Ile Val Gly Cys Ile Ile Asp Ala Phe Ile Ile
 165 170 175
 Gly Ala Val Met Ala Lys Met Ala Lys Pro Lys Lys Arg Asn Glu Thr
 180 185 190
 Leu Val Phe Ser His Asn Ala Val Ile Ala Met Arg Asp Gly Lys Leu
 195 200 205
 Cys Leu Met Trp Arg Val Gly Asn Leu Arg Lys Ser His Leu Val Glu
 210 215 220
 Ala His Val Arg Ala Gln Leu Leu Lys Ser Arg Ile Thr Ser Glu Gly
 225 230 235 240
 Glu Tyr Ile Pro Leu Asp Gln Ile Asp Ile Asn Val Gly Phe Asp Ser
 245 250 255
 Gly Ile Asp Arg Ile Phe Leu Val Ser Pro Ile Thr Ile Val His Glu

260 265 503 270
 Ile Asp Glu Asp Ser Pro Leu Tyr Asp Leu Ser Lys Gln Asp Ile Asp
 275 280 285
 Asn Ala Asp Phe Glu Ile Val Val Ile Leu Glu Gly Met Val Glu Ala
 290 295 300
 Thr Ala Met Thr Thr Gln Cys Arg Ser Ser Tyr Leu Ala Asn Glu Ile
 305 310 315 320
 Leu Trp Gly His Arg Tyr Glu Pro Val Leu Phe Glu Glu Lys His Tyr
 325 330 335
 Tyr Lys Val Asp Tyr Ser Arg Phe His Lys Thr Tyr Glu Val Pro Asn
 340 345 350
 Thr Pro Leu Cys Ser Ala Arg Asp Leu Ala Glu Lys Lys Tyr Ile Leu
 355 360 365
 Ser Asn Ala Asn Ser Phe Cys Tyr Glu Asn Glu Val Ala Leu Thr Ser
 370 375 380
 Lys Glu Glu Asp Asp Ser Glu Asn Gly Val Pro Glu Ser Thr Ser Thr
 385 390 395 400
 Asp Thr Pro Pro Asp Ile Asp Leu His Asn Gln Ala Ser Val Pro Leu
 405 410 415
 Glu Pro Arg Pro Leu Arg Arg Glu Ser Glu Ile
 420 425

<210> 209
 <211> 433
 <212> PRT
 <213> Homo sapiens

<400> 209

Met Thr Ala Ala Ser Arg Ala Asn Pro Tyr Ser Ile Val Ser Ser Glu
 1 5 10 15
 Glu Asp Gly Leu His Leu Val Thr Met Ser Gly Ala Asn Gly Phe Gly
 20 25 30
 Asn Gly Lys Val His Thr Arg Arg Cys Arg Asn Arg Phe Val Lys
 35 40 45
 Lys Asn Gly Gln Cys Asn Ile Glu Phe Ala Asn Met Asp Glu Lys Ser
 50 55 60
 Gln Arg Tyr Leu Ala Asp Met Phe Thr Thr Cys Val Asp Ile Arg Trp
 65 70 75 80

Arg Tyr Met Leu Leu Ile Phe Ser Leu Ala Phe Leu Ala Ser Trp Leu
 85 90 95
 Leu Phe Gly Ile Ile Phe Trp Val Ile Ala Val Ala His Gly Asp Leu
 100 105 110
 Glu Pro Ala Glu Gly Arg Gly Arg Thr Pro Cys Val Met Gln Val His
 115 120 125
 Gly Phe Met Ala Ala Phe Leu Phe Ser Ile Glu Thr Gln Thr Thr Ile
 130 135 140
 Gly Tyr Gly Leu Arg Cys Val Thr Glu Glu Cys Pro Val Ala Val Phe
 145 150 155 160
 Met Val Val Ala Gln Ser Ile Val Gly Cys Ile Ile Asp Ser Phe Met
 165 170 175
 Ile Gly Ala Ile Met Ala Lys Met Ala Arg Pro Lys Lys Arg Ala Gln
 180 185 190
 Thr Leu Leu Phe Ser His Asn Ala Val Val Ala Leu Arg Asp Gly Lys
 195 200 205
 Leu Cys Leu Met Trp Arg Val Gly Asn Leu Arg Lys Ser His Ile Val
 210 215 220
 Glu Ala His Val Arg Ala Gln Leu Ile Lys Pro Arg Val Thr Glu Glu
 225 230 235 240
 Gly Glu Tyr Ile Pro Leu Asp Gln Ile Asp Ile Asp Val Gly Phe Asp
 245 250 255
 Lys Gly Leu Asp Arg Ile Phe Leu Val Ser Pro Ile Thr Ile Leu His
 260 265 270
 Glu Ile Asp Glu Ala Ser Pro Leu Phe Gly Ile Ser Arg Gln Asp Leu
 275 280 285
 Glu Thr Asp Asp Phe Glu Ile Val Val Ile Leu Glu Gly Met Val Glu
 290 295 300
 Ala Thr Ala Met Thr Thr Gln Ala Arg Ser Ser Tyr Leu Ala Asn Glu
 305 310 315 320
 Ile Leu Trp Gly His Arg Phe Glu Pro Val Leu Phe Glu Glu Lys Asn
 325 330 335
 Gln Tyr Lys Ile Asp Tyr Ser His Phe His Lys Thr Tyr Glu Val Pro
 340 345 350

Ser Thr Pro Arg Cys Ser Ala Lys Asp Leu Val Glu Asn Lys Phe Leu
 355 360 505 365
 Leu Pro Ser Ala Asn Ser Phe Cys Tyr Glu Asn Glu Leu Ala Phe Leu
 370 375 380
 Ser Arg Asp Glu Glu Asp Glu Ala Asp Gly Asp Gln Asp Gly Arg Ser
 385 390 395 400
 Arg Asp Gly Leu Ser Pro Gln Ala Arg His Asp Phe Asp Arg Leu Gln
 405 410 415
 Ala Gly Gly Gly Val Leu Glu Gln Arg Pro Tyr Arg Arg Glu Ser Glu
 420 425 430

Ile

<210> 210
 <211> 445
 <212> PRT
 <213> Homo sapiens

<400> 210

Met His Gly His Ser Arg Asn Gly Gln Ala His Val Pro Arg Arg Lys
 1 5 10 15
 Arg Arg Asn Arg Phe Val Lys Lys Asn Gly Gln Cys Asn Val Tyr Phe
 20 25 30
 Ala Asn Leu Ser Asn Lys Ser Gln Arg Tyr Met Ala Asp Ile Phe Thr
 35 40 45
 Thr Cys Val Asp Thr Arg Trp Arg Tyr Met Leu Met Ile Phe Ser Ala
 50 55 60
 Ala Phe Leu Val Ser Trp Leu Phe Phe Gly Leu Leu Phe Trp Cys Ile
 65 70 75 80
 Ala Phe Phe His Gly Asp Leu Glu Ala Ser Pro Gly Val Pro Ala Ala
 85 90 95
 Gly Gly Pro Ala Ala Gly Gly Gly Gly Ala Ala Pro Val Ala Pro Lys
 100 105 110
 Pro Cys Ile Met His Val Asn Gly Phe Leu Gly Ala Phe Leu Phe Ser
 115 120 125
 Val Glu Thr Gln Thr Thr Ile Gly Tyr Gly Phe Arg Cys Val Thr Glu
 130 135 140
 Glu Cys Pro Leu Ala Val Ile Ala Val Val Val Gln Ser Ile Val Gly
 145 150 155 160

Cys Val Ile Asp Ser Phe Met Ile Gly Thr Ile Met Ala Lys Met Ala
 165 170 175
 Arg Pro Lys Lys Arg Ala Gln Thr Leu Leu Phe Ser His His Ala Val
 180 185 190
 Ile Ser Val Arg Asp Gly Lys Leu Cys Leu Met Trp Arg Val Gly Asn
 195 200 205
 Leu Arg Lys Ser His Ile Val Glu Ala His Val Arg Ala Gln Leu Ile
 210 215 220
 Lys Pro Tyr Met Thr Gln Glu Gly Glu Tyr Leu Pro Leu Asp Gln Arg
 225 230 235 240
 Asp Leu Asn Val Gly Tyr Asp Ile Gly Leu Asp Arg Ile Phe Leu Val
 245 250 255
 Ser Pro Ile Ile Ile Val His Glu Ile Asp Glu Asp Ser Pro Leu Tyr
 260 265 270
 Gly Met Gly Lys Glu Glu Leu Glu Ser Glu Asp Phe Glu Ile Val Val
 275 280 285
 Ile Leu Glu Gly Met Val Glu Ala Thr Ala Met Thr Thr Gln Ala Arg
 290 295 300
 Ser Ser Tyr Leu Ala Ser Glu Ile Leu Trp Gly His Arg Phe Glu Pro
 305 310 315 320
 Val Val Phe Glu Glu Lys Ser His Tyr Lys Val Asp Tyr Ser Arg Phe
 325 330 335
 His Lys Thr Tyr Glu Val Ala Gly Thr Pro Cys Cys Ser Ala Arg Glu
 340 345 350
 Leu Gln Glu Ser Lys Ile Thr Val Leu Pro Ala Pro Pro Pro Pro
 355 360 365
 Ser Ala Phe Cys Tyr Glu Asn Glu Leu Ala Leu Met Ser Gln Glu Glu
 370 375 380
 Glu Glu Met Glu Glu Glu Ala Ala Ala Ala Ala Ala Val Ala Ala Gly
 385 390 395 400
 Leu Gly Leu Glu Ala Gly Ser Lys Glu Glu Ala Gly Ile Ile Arg Met
 405 410 415
 Leu Glu Phe Gly Ser His Leu Asp Leu Glu Arg Met Gln Ala Ser Leu
 420 425 430

Pro Leu Asp Asn Ile Ser Tyr Arg Arg Glu Ser Ala Ile
 435 440 445

<210> 211
 <211> 436
 <212> PRT
 <213> Homo sapiens

<400> 211

Met Gly Leu Ala Arg Ala Leu Arg Arg Leu Ser Gly Ala Leu Asp Ser
 1 5 10 15

Gly Asp Ser Arg Ala Gly Asp Glu Glu Glu Ala Gly Pro Gly Leu Cys
 20 25 30

Arg Asn Gly Trp Ala Pro Ala Pro Val Gln Ser Pro Val Gly Arg Arg
 35 40 45

Arg Gly Arg Phe Val Lys Lys Asp Gly His Cys Asn Val Arg Phe Val
 50 55 60

Asn Leu Gly Gly Gln Gly Ala Arg Tyr Leu Ser Asp Leu Phe Thr Thr
 65 70 75 80

Cys Val Asp Val Arg Trp Arg Trp Met Cys Leu Leu Phe Ser Cys Ser
 85 90 95

Phe Leu Ala Ser Trp Leu Leu Phe Gly Leu Ala Phe Trp Leu Ile Ala
 100 105 110

Ser Leu His Gly Asp Leu Ala Ala Pro Pro Pro Pro Ala Pro Cys Phe
 115 120 125

Ser His Val Ala Ser Phe Leu Ala Ala Phe Leu Phe Ala Leu Glu Thr
 130 135 140

Gln Thr Ser Ile Gly Tyr Gly Val Arg Ser Val Thr Glu Glu Cys Pro
 145 150 155 160

Ala Ala Val Ala Ala Val Val Leu Gln Cys Ile Ala Gly Cys Val Leu
 165 170 175

Asp Ala Phe Val Val Gly Ala Val Met Ala Lys Met Ala Lys Pro Lys
 180 185 190

Lys Arg Asn Glu Thr Leu Val Phe Ser Glu Asn Ala Val Val Ala Leu
 195 200 205

Arg Asp His Arg Leu Cys Leu Met Trp Arg Val Gly Asn Leu Arg Arg
 210 215 220

Ser His Leu Val Glu Ala His Val Arg Ala Gln Leu Leu Gln Pro Arg

Pro Gln Gln Gln Leu Val Pro Lys Lys Lys Arg Gln Arg Phe Val Asp
 35 40 45
 Lys Asn Gly Arg Cys Asn Val Gln His Gly Asn Leu Gly Ser Glu Thr
 50 55 60
 Ser Arg Tyr Leu Ser Asp Leu Phe Thr Thr Leu Val Asp Leu Lys Trp
 65 70 75 80
 Arg Trp Asn Leu Phe Ile Phe Ile Leu Thr Tyr Thr Val Ala Trp Leu
 85 90 95
 Phe Met Ala Ser Met Trp Trp Val Ile Ala Tyr Thr Arg Gly Asp Leu
 100 105 110
 Asn Lys Ala His Val Gly Asn Tyr Thr Pro Cys Val Ala Asn Val Tyr
 115 120 125
 Asn Phe Pro Ser Ala Phe Leu Phe Phe Ile Glu Thr Glu Ala Thr Ile
 130 135 140
 Gly Tyr Gly Tyr Arg Tyr Ile Thr Asp Lys Cys Pro Glu Gly Ile Ile
 145 150 155 160
 Leu Phe Leu Phe Gln Ser Ile Leu Gly Ser Ile Val Asp Ala Phe Leu
 165 170 175
 Ile Gly Cys Met Phe Ile Lys Met Ser Gln Pro Lys Lys Arg Ala Glu
 180 185 190
 Thr Leu Met Phe Ser Glu His Ala Val Ile Ser Met Arg Asp Gly Lys
 195 200 205
 Leu Thr Leu Met Phe Arg Val Gly Asn Leu Arg Asn Ser His Met Val
 210 215 220
 Ser Ala Gln Ile Arg Cys Lys Leu Leu Lys Ser Arg Gln Thr Pro Glu
 225 230 235 240
 Gly Glu Phe Leu Pro Leu Asp Gln Leu Glu Leu Asp Val Gly Phe Ser
 245 250 255
 Thr Gly Ala Asp Gln Leu Phe Leu Val Ser Pro Leu Thr Ile Cys His
 260 265 270
 Val Ile Asp Ala Lys Ser Pro Phe Tyr Asp Leu Ser Gln Arg Ser Met
 275 280 285
 Gln Thr Glu Gln Phe Glu Ile Val Val Ile Leu Glu Gly Ile Val Glu
 290 295 300

Thr Thr Gly Met Thr Cys Gln Ala Arg Thr Ser Tyr Thr Glu Asp Glu
 305 310 315 320
 Val Leu Trp Gly His Arg Phe Phe Pro Val Ile Ser Leu Glu Glu Gly
 325 330 335
 Phe Phe Lys Val Asp Tyr Ser Gln Phe His Ala Thr Phe Glu Val Pro
 340 345 350
 Thr Pro Pro Tyr Ser Val Lys Glu Gln Glu Glu Met Leu Leu Met Ser
 355 360 365
 Ser Pro Leu Ile Ala Pro Ala Ile Thr Asn Ser Lys Glu Arg His Asn
 370 375 380
 Ser Val Glu Cys Leu Asp Gly Leu Asp Asp Ile Thr Thr Lys Leu Pro
 385 390 395 400
 Ser Lys Leu Gln Lys Ile Thr Gly Arg Glu Asp Phe Pro Lys Lys Leu
 405 410 415
 Leu Arg Met Ser Ser Thr Thr Ser Glu Lys Ala Tyr Ser Leu Gly Asp
 420 425 430
 Leu Pro Met Lys Leu Gln Arg Ile Ser Ser Val Pro Gly Asn Ser Glu
 435 440 445
 Glu Lys Leu Val Ser Lys Thr Thr Lys Met Leu Ser Asp Pro Met Ser
 450 455 460
 Gln Ser Val Ala Asp Leu Pro Pro Lys Leu Gln Lys Met Ala Gly Gly
 465 470 475 480
 Ala Ala Arg Met Glu Gly Asn Leu Pro Ala Lys Leu Arg Lys Met Asn
 485 490 495
 Ser Asp Arg Phe Thr
 500

<210> 213
 <211> 423
 <212> PRT
 <213> Homo sapiens

<400> 213

Met Ala Lys Leu Thr Glu Ser Met Thr Asn Val Leu Glu Gly Asp Ser
 1 5 10 15
 Met Asp Gln Asp Val Glu Ser Pro Val Ala Ile His Gln Pro Lys Leu
 20 25 30
 Pro Lys Gln Ala Arg Asp Asp Leu Pro Arg His Ile Ser Arg Asp Arg
 35 40 45

Thr Lys Arg Lys Ile Gln Arg Tyr Val Arg Lys Asp Gly Lys Cys Asn
 50 55 60
 Val His His Gly Asn Val Arg Glu Thr Tyr Arg Tyr Leu Thr Asp Ile
 65 70 75 80
 Phe Thr Thr Leu Val Asp Leu Lys Trp Arg Phe Asn Leu Leu Ile Phe
 85 90 95
 Val Met Val Tyr Thr Val Thr Trp Leu Phe Phe Gly Met Ile Trp Trp
 100 105 110
 Leu Ile Ala Tyr Ile Arg Gly Asp Met Asp His Ile Glu Asp Pro Ser
 115 120 125
 Trp Thr Pro Cys Val Thr Asn Leu Asn Gly Phe Val Ser Ala Phe Leu
 130 135 140
 Phe Ser Ile Glu Thr Glu Thr Thr Ile Gly Tyr Gly Tyr Arg Val Ile
 145 150 155 160
 Thr Asp Lys Cys Pro Glu Gly Ile Ile Leu Leu Leu Ile Gln Ser Val
 165 170 175
 Leu Gly Ser Ile Val Asn Ala Phe Met Val Gly Cys Met Phe Val Lys
 180 185 190
 Ile Ser Gln Pro Lys Lys Arg Ala Glu Thr Leu Val Phe Ser Thr His
 195 200 205
 Ala Val Ile Ser Met Arg Asp Gly Lys Leu Cys Leu Met Phe Arg Val
 210 215 220
 Gly Asp Leu Arg Asn Ser His Ile Val Glu Ala Ser Ile Arg Ala Lys
 225 230 235 240
 Leu Ile Lys Ser Lys Gln Thr Ser Glu Gly Glu Phe Ile Pro Leu Asn
 245 250 255
 Gln Thr Asp Ile Asn Val Gly Tyr Tyr Thr Gly Asp Asp Arg Leu Phe
 260 265 270
 Leu Val Ser Pro Leu Ile Ile Ser His Glu Ile Asn Gln Gln Ser Pro
 275 280 285
 Phe Trp Glu Ile Ser Lys Ala Gln Leu Pro Lys Glu Glu Leu Glu Ile
 290 295 300
 Val Val Ile Leu Glu Gly Met Val Glu Ala Thr Gly Met Thr Cys Gln
 305 310 315 320

Ala Arg Ser Ser Tyr Ile Thr Ser Glu Ile Leu Trp Gly Tyr Arg Phe
325 330 335

Thr Pro Val Leu Thr Leu Glu Asp Gly Phe Tyr Glu Val Asp Tyr Asn
340 345 350

Ser Phe His Glu Thr Tyr Glu Thr Ser Thr Pro Ser Leu Ser Ala Lys
355 360 365

Glu Leu Ala Glu Leu Ala Ser Arg Ala Glu Leu Pro Leu Ser Trp Ser
370 375 380

Val Ser Ser Lys Leu Asn Gln His Ala Glu Leu Glu Thr Glu Glu Glu
385 390 395 400

Glu Lys Asn Leu Glu Glu Gln Thr Glu Arg Asn Gly Asp Val Ala Asn
405 410 415

Leu Glu Asn Glu Ser Lys Val
420

<210>	214
<211>	393
<212>	PRT
<213>	Homo sapiens

$\langle 400 \rangle$ 214

Met Ala Gln Glu Asn Ala Ala Phe Ser Pro Gly Gln Glu Glu Pro Pro
1 5 10 15

Arg Arg Arg Gly Arg Gln Arg Tyr Val Glu Lys Asp Gly Arg Cys Asn
20 25 30

Val Gln Gln Gly Asn Val Arg Glu Thr Tyr Arg Tyr Leu Thr Asp Leu
35 40 45

Phe Thr Thr Leu Val Asp Leu Gln Trp Arg Leu Ser Leu Leu Phe Phe
50 55 60

Val Leu Ala Tyr Ala Leu Thr Trp Leu Phe Phe Gly Ala Ile Trp Trp
65 70 75 80

Leu Ile Ala Tyr Gly Arg Gly Asp Leu Glu His Leu Glu Asp Thr Ala
85 90 95

Trp Thr Pro Cys Val Asn Asn Leu Asn Gly Phe Val Ala Ala Phe Leu
100 105 110

Phe Ser Ile Glu Thr Glu Thr Thr Ile Gly Tyr Gly His Arg Val Ile
115 120 125

Thr Asp Gln Cys Pro Glu Gly Ile Val Leu Leu Leu Leu Gln Ala Ile

130 135 513 140
 Leu Gly Ser Met Val Asn Ala Phe Met Val Gly Cys Met Phe Val Lys
 145 150 155 160
 Ile Ser Gln Pro Asn Lys Arg Ala Ala Thr Leu Val Phe Ser Ser His
 165 170 175
 Ala Val Val Ser Leu Arg Asp Gly Arg Leu Cys Leu Met Phe Arg Val
 180 185 190
 Gly Asp Leu Arg Ser Ser His Ile Val Glu Ala Ser Ile Arg Ala Lys
 195 200 205
 Leu Ile Arg Ser Arg Gln Thr Leu Glu Gly Glu Phe Ile Pro Leu His
 210 215 220
 Gln Thr Asp Leu Ser Val Gly Phe Asp Thr Gly Asp Asp Arg Leu Phe
 225 230 235 240
 Leu Val Ser Pro Leu Val Ile Ser His Glu Ile Asp Ala Ala Ser Pro
 245 250 255
 Phe Trp Glu Ala Ser Arg Arg Ala Leu Glu Arg Asp Asp Phe Glu Ile
 260 265 270
 Val Val Ile Leu Glu Gly Met Val Glu Ala Thr Gly Met Thr Cys Gln
 275 280 285
 Ala Arg Ser Ser Tyr Leu Val Asp Glu Val Leu Trp Gly His Arg Phe
 290 295 300
 Thr Ser Val Leu Thr Leu Glu Asp Gly Phe Tyr Glu Val Asp Tyr Ala
 305 310 315 320
 Ser Phe His Glu Thr Phe Glu Val Pro Thr Pro Ser Cys Ser Ala Arg
 325 330 335
 Glu Leu Ala Glu Ala Ala Ala Arg Leu Asp Ala His Leu Tyr Trp Ser
 340 345 350
 Ile Pro Ser Arg Leu Asp Glu Lys Val Glu Glu Glu Gly Ala Gly Glu
 355 360 365
 Gly Ala Gly Gly Glu Ala Gly Ala Asp Lys Glu Gln Asn Gly Cys Leu
 370 375 380
 Pro Pro Pro Glu Ser Glu Ser Lys Val
 385 390

<210> 215
 <211> 419

<212> PRT
 <213> Homo sapiens

<400> 215

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Met Ala Gly Asp Ser Arg Asn Ala Met Asn Gln Asp Met Glu Ile Gly
1      5      10      15

Val Thr Pro Trp Asp Pro Lys Lys Ile Pro Lys Gln Ala Arg Asp Tyr
      20      25      30

Val Pro Ile Ala Thr Asp Arg Thr Arg Leu Leu Ala Glu Gly Lys Lys
      35      40      45

Pro Arg Gln Arg Tyr Met Glu Lys Ser Gly Lys Cys Asn Val His His
      50      55      60

Gly Asn Val Gln Glu Thr Tyr Arg Tyr Leu Ser Asp Leu Phe Thr Thr
65      70      75      80

Leu Val Asp Leu Lys Trp Arg Phe Asn Leu Leu Val Phe Thr Met Val
      85      90      95

Tyr Thr Val Thr Trp Leu Phe Phe Gly Phe Ile Trp Trp Leu Ile Ala
      100      105      110

Tyr Ile Arg Gly Asp Leu Asp His Val Gly Asp Gln Glu Trp Ile Pro
      115      120      125

Cys Val Glu Asn Leu Ser Gly Phe Val Ser Ala Phe Leu Phe Ser Ile
      130      135      140

Glu Thr Glu Thr Thr Ile Gly Tyr Gly Phe Arg Val Ile Thr Glu Lys
145      150      155      160

Cys Pro Glu Gly Ile Ile Leu Leu Leu Val Gln Ala Ile Leu Gly Ser
      165      170      175

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

Pro Lys Lys Arg Ala Glu Thr Leu Met Phe Ser Asn Asn Ala Val Ile
      195      200      205

Ser Met Arg Asp Glu Lys Leu Cys Leu Met Phe Arg Val Gly Asp Leu
210      215      220

Arg Asn Ser His Ile Val Glu Ala Ser Ile Arg Ala Lys Leu Ile Lys
225      230      235      240

Ser Arg Gln Thr Lys Glu Gly Glu Phe Ile Pro Leu Asn Gln Thr Asp
      245      250      255

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Ile Asn Val Gly Phe Asp Thr Gly Asp⁵¹⁵ Arg Leu Phe Leu Val Ser
 260 265 270
 Pro Leu Ile Ile Ser His Glu Ile Asn Glu Lys Ser Pro Phe Trp Glu
 275 280 285
 Met Ser Gln Ala Gln Leu His Gln Glu Glu Phe Glu Val Val Val Ile
 290 295 300
 Leu Glu Gly Met Val Glu Ala Thr Gly Met Thr Cys Gln Ala Arg Ser
 305 310 315 320
 Ser Tyr Met Asp Thr Glu Val Leu Trp Gly His Arg Phe Thr Pro Val
 325 330 335
 Leu Thr Leu Glu Lys Gly Phe Tyr Glu Val Asp Tyr Asn Thr Phe His
 340 345 350
 Asp Thr Tyr Glu Thr Asn Thr Pro Ser Cys Cys Ala Lys Glu Leu Ala
 355 360 365
 Glu Met Lys Arg Glu Gly Arg Leu Leu Gln Tyr Leu Pro Ser Pro Pro
 370 375 380
 Leu Leu Gly Gly Cys Ala Glu Ala Gly Leu Asp Ala Glu Ala Glu Gln
 385 390 395 400
 Asn Glu Glu Asp Glu Pro Lys Gly Leu Gly Gly Ser Arg Glu Ala Arg
 405 410 415

Gly Ser Val

<210> 216
 <211> 379
 <212> PRT
 <213> Homo sapiens

<400> 216

Met Thr Ser Val Ala Lys Val Tyr Tyr Ser Gln Thr Thr Gln Thr Glu
 1 5 10 15
 Ser Arg Pro Leu Met Gly Pro Gly Ile Arg Arg Arg Arg Val Leu Thr
 20 25 30
 Lys Asp Gly Arg Ser Asn Val Arg Met Glu His Ile Ala Asp Lys Arg
 35 40 45
 Phe Leu Tyr Leu Lys Asp Leu Trp Thr Thr Phe Ile Asp Met Gln Trp
 50 55 60
 Arg Tyr Lys Leu Leu Leu Phe Ser Ala Thr Phe Ala Gly Thr Trp Phe
 65 70 75 80

Leu Phe Gly Val Val Trp Tyr Leu Val Ala Val Ala His Gly Asp Leu
 85 90 95
 Leu Glu Leu Asp Pro Pro Ala Asn His Thr Pro Cys Val Val Gln Val
 100 105 110
 His Thr Leu Thr Gly Ala Phe Leu Phe Ser Leu Glu Ser Gln Thr Thr
 115 120 125
 Ile Gly Tyr Gly Phe Arg Tyr Ile Ser Glu Glu Cys Pro Leu Ala Ile
 130 135 140
 Val Leu Leu Ile Ala Gln Leu Val Leu Thr Thr Ile Leu Glu Ile Phe
 145 150 155 160
 Ile Thr Gly Thr Phe Leu Ala Lys Ile Ala Arg Pro Lys Lys Arg Ala
 165 170 175
 Glu Thr Ile Arg Phe Ser Gln His Ala Val Val Ala Ser His Asn Gly
 180 185 190
 Lys Pro Cys Leu Met Ile Arg Val Ala Asn Met Arg Lys Ser Leu Leu
 195 200 205
 Ile Gly Cys Gln Val Thr Gly Lys Leu Leu Gln Thr His Gln Thr Lys
 210 215 220
 Glu Gly Glu Asn Ile Arg Leu Asn Gln Val Asn Val Thr Phe Gln Val
 225 230 235 240
 Asp Thr Ala Ser Asp Ser Pro Phe Leu Ile Leu Pro Leu Thr Phe Tyr
 245 250 255
 His Val Val Asp Glu Thr Ser Pro Leu Lys Asp Leu Pro Leu Arg Ser
 260 265 270
 Gly Glu Gly Asp Phe Glu Leu Val Leu Ile Leu Ser Gly Thr Val Glu
 275 280 285
 Ser Thr Ser Ala Thr Cys Gln Val Arg Thr Ser Tyr Leu Pro Glu Glu
 290 295 300
 Ile Leu Trp Gly Tyr Glu Phe Thr Pro Ala Ile Ser Leu Ser Ala Ser
 305 310 315 320
 Gly Lys Tyr Ile Ala Asp Phe Ser Leu Phe Asp Gln Val Val Lys Val
 325 330 335
 Ala Ser Pro Ser Gly Leu Arg Asp Ser Thr Val Arg Tyr Gly Asp Pro
 340 345 350

517

Glu Lys Leu Lys Leu Glu Glu Ser Leu Arg Glu Gln Ala Glu Lys Glu
355 360 365

Gly Ser Ala Leu Ser Val Arg Ile Ser Asn Val
370 375

<210> 217
<211> 375
<212> PRT
<213> Homo sapiens
<400> 217

Met Asp Ala Ile His Ile Gly Met Ser Ser Thr Pro Leu Val Lys His
1 5 10 15

Thr Ala Gly Ala Gly Leu Lys Ala Asn Arg Pro Arg Val Met Ser Lys
20 25 30

Ser Gly His Ser Asn Val Arg Ile Asp Lys Val Asp Gly Ile Tyr Leu
35 40 45

Leu Tyr Leu Gln Asp Leu Trp Thr Thr Val Ile Asp Met Lys Trp Arg
50 55 60

Tyr Lys Leu Thr Leu Phe Ala Ala Thr Phe Val Met Thr Trp Phe Leu
65 70 75 80

Phe Gly Val Ile Tyr Tyr Ala Ile Ala Phe Ile His Gly Asp Leu Glu
85 90 95

Pro Gly Glu Pro Ile Ser Asn His Thr Pro Cys Ile Met Lys Val Asp
100 105 110

Ser Leu Thr Gly Ala Phe Leu Phe Ser Leu Glu Ser Gln Thr Thr Ile
115 120 125

Gly Tyr Gly Val Arg Ser Ile Thr Glu Glu Cys Pro His Ala Ile Phe
130 135 140

Leu Leu Val Ala Gln Leu Val Ile Thr Thr Leu Ile Glu Ile Phe Ile
145 150 155 160

Thr Gly Thr Phe Leu Ala Lys Ile Ala Arg Pro Lys Lys Arg Ala Glu
165 170 175

Thr Ile Lys Phe Ser His Cys Ala Val Ile Thr Lys Gln Asn Gly Lys
180 185 190

Leu Cys Leu Val Ile Gln Val Ala Asn Met Arg Lys Ser Leu Leu Ile
195 200 205

Gln Cys Gln Leu Ser Gly Lys Leu Leu Gln Thr His Val Thr Lys Glu

210 215 518 220
 Gly Glu Arg Ile Leu Leu Asn Gln Ala Thr Val Lys Phe His Val Asp
 225 230 235 240
 Ser Ser Ser Glu Ser Pro Phe Leu Ile Leu Pro Met Thr Phe Tyr His
 245 250 255
 Val Leu Asp Glu Thr Ser Pro Leu Arg Asp Leu Thr Pro Gln Asn Leu
 260 265 270
 Lys Glu Lys Glu Phe Glu Leu Val Val Leu Leu Asn Ala Thr Val Glu
 275 280 285
 Ser Thr Ser Ala Val Cys Gln Ser Arg Thr Ser Tyr Ile Pro Glu Glu
 290 295 300
 Ile Tyr Trp Gly Phe Glu Phe Val Pro Val Val Ser Leu Ser Lys Asn
 305 310 315 320
 Gly Lys Tyr Val Ala Asp Phe Ser Gln Phe Glu Gln Ile Arg Lys Ser
 325 330 335
 Pro Asp Cys Thr Phe Tyr Cys Ala Asp Ser Glu Lys Gln Gln Leu Glu
 340 345 350
 Glu Lys Tyr Arg Gln Glu Asp Gln Arg Glu Arg Glu Leu Arg Thr Leu
 355 360 365
 Leu Leu Gln Gln Ser Asn Val
 370 375

<210> 218
 <211> 418
 <212> PRT
 <213> Homo sapiens

<400> 218

Met Ser Tyr Tyr Gly Ser Ser Tyr His Ile Ile Asn Ala Asp Ala Lys
 1 5 10 15
 Tyr Pro Gly Tyr Pro Pro Glu His Ile Ile Ala Glu Lys Arg Arg Ala
 20 25 30
 Arg Arg Arg Leu Leu His Lys Asp Gly Ser Cys Asn Val Tyr Phe Lys
 35 40 45
 His Ile Phe Gly Glu Trp Gly Ser Tyr Val Val Asp Ile Phe Thr Thr
 50 55 60
 Leu Val Asp Thr Lys Trp Arg His Met Phe Val Ile Phe Ser Leu Ser
 65 70 75 80

Tyr Ile Leu Ser Trp₈₅ Leu Ile Phe Gly Ser₉₀ Val Phe Trp Leu Ile₉₅ Ala
 Phe His His Gly₁₀₀ Asp Leu Leu Asn Asp₁₀₅ Pro Asp Ile Thr Pro₁₁₀ Cys Val
 Asp Asn Val₁₁₅ His Ser Phe Thr Gly₁₂₀ Ala Phe Leu Phe Ser₁₂₅ Leu Glu Thr
 Gln Thr₁₃₀ Thr Ile Gly Tyr Gly₁₃₅ Tyr Arg Cys Val Thr₁₄₀ Glu Glu Cys Ser
 Val₁₄₅ Ala Val Leu Met Val₁₅₀ Ile Leu Gln Ser Ile₁₅₅ Leu Ser Cys Ile Ile₁₆₀
 Asn Thr Phe Ile Ile₁₆₅ Gly Ala Ala Leu Ala₁₇₀ Lys Met Ala Thr Ala₁₇₅ Arg
 Lys Arg Ala Gln₁₈₀ Thr Ile Arg Phe Ser₁₈₅ Tyr Phe Ala Leu Ile₁₉₀ Gly Met
 Arg Asp Gly₁₉₅ Lys Leu Cys Leu Met₂₀₀ Trp Arg Ile Gly Asp₂₀₅ Phe Arg Pro
 Asn His₂₁₀ Val Val Glu Gly Thr₂₁₅ Val Arg Ala Gln Leu₂₂₀ Leu Arg Tyr Thr
 Glu₂₂₅ Asp Ser Glu Gly Arg₂₃₀ Met Thr Met Ala Phe₂₃₅ Lys Asp Leu Lys Leu₂₄₀
 Val Asn Asp Gln₂₄₅ Ile Ile Leu Val Thr Pro₂₅₀ Val Thr Ile Val His₂₅₅ Glu
 Ile Asp His Glu₂₆₀ Ser Pro Leu Tyr Ala₂₆₅ Leu Asp Arg Lys Ala₂₇₀ Val Ala
 Lys Asp Asn₂₇₅ Phe Glu Ile Leu Val₂₈₀ Thr Phe Ile Tyr Thr₂₈₅ Gly Asp Ser
 Thr Gly₂₉₀ Thr Ser His Gln Ser₂₉₅ Arg Ser Ser Tyr Val₃₀₀ Pro Arg Glu Ile
 Leu₃₀₅ Trp Gly His Arg Phe₃₁₀ Asn Asp Val Leu Glu₃₁₅ Val Lys Arg Lys Tyr₃₂₀
 Tyr Lys Val Asn Cys₃₂₅ Leu Gln Phe Glu Gly₃₃₀ Ser Val Glu Val Tyr₃₃₅ Ala
 Pro Phe Cys Ser₃₄₀ Ala Lys Gln Leu Asp₃₄₅ Trp Lys Asp Gln Gln₃₅₀ Leu His

Ile Glu Lys₃₅₅ Ala Pro Pro Val Arg₃₆₀ Glu Ser Cys₅₂₀ Thr Ser₃₆₅ Asp Thr Lys
 Ala Arg₃₇₀ Arg Arg Ser Phe Ser₃₇₅ Ala Val Ala Ile Val₃₈₀ Ser Ser Cys Glu
 Asn₃₈₅ Pro Glu Glu Thr Thr₃₉₀ Thr Ser Ala Thr His₃₉₅ Glu Tyr Arg Glu Thr₄₀₀
 Pro Tyr Gln Lys Ala₄₀₅ Leu Leu Thr Leu Asn₄₁₀ Arg Ile Ser Val Glu₄₁₅ Ser

Gln Met

<210> 219
 <211> 424
 <212> PRT
 <213> Homo sapiens

<400> 219

Met Leu Ala Arg Lys₅ Ser Ile Ile Pro Glu₁₀ Glu Tyr Val Leu Ala Arg₁₅
 Ile Ala Ala Glu₂₀ Asn Leu Arg Lys₂₅ Pro Arg Ile Arg Asp Arg₃₀ Leu Pro
 Lys Ala Arg₃₅ Phe Ile Ala Lys₄₀ Ser Gly Ala Cys Asn₄₅ Leu Ala His Lys
 Asn Ile Arg Glu Gln Gly₅₅ Arg Phe Leu Gln Asp Ile₆₀ Phe Thr Thr Leu
 Val Asp Leu Lys Trp Arg₇₀ His Thr Leu Val Ile₇₅ Phe Thr Met Ser Phe₈₀
 Leu Cys Ser Trp Leu₈₅ Leu Phe Ala Ile Met₉₀ Trp Trp Leu Val Ala₉₅ Phe
 Ala His Gly Asp₁₀₀ Ile Tyr Ala Tyr Met₁₀₅ Glu Lys Ser Gly Met₁₁₀ Glu Lys
 Ser Gly Leu₁₁₅ Glu Ser Thr Val Cys₁₂₀ Val Thr Asn Val Arg₁₂₅ Ser Phe Thr
 Ser Ala Phe Leu Phe Ser Ile₁₃₅ Glu Val Gln Val Thr₁₄₀ Ile Gly Phe Gly
 Gly Arg Met Met Thr Glu₁₅₀ Glu Cys Pro Leu Ala₁₅₅ Ile Thr Val Leu Ile₁₆₀
 Leu Gln Asn Ile Val₁₆₅ Gly Leu Ile Ile Asn₁₇₀ Ala Val Met Leu Gly₁₇₅ Cys

Ile Phe Met Lys Thr Ala Gln Ala His Arg Arg Ala Glu Thr Leu Ile
 180 185 190

Phe Ser Arg His Ala Val Ile Ala Val Arg Asn Gly Lys Leu Cys Phe
 195 200 205

Met Phe Arg Val Gly Asp Leu Arg Lys Ser Met Ile Ile Ser Ala Ser
 210 215 220

Val Arg Ile Gln Val Val Lys Lys Thr Thr Thr Pro Glu Gly Glu Val
 225 230 235 240

Val Pro Ile His Gln Leu Asp Ile Pro Val Asp Asn Pro Ile Glu Ser
 245 250 255

Asn Asn Ile Phe Leu Val Ala Pro Leu Ile Ile Cys His Val Ile Asp
 260 265 270

Lys Arg Ser Pro Leu Tyr Asp Ile Ser Ala Thr Asp Leu Ala Asn Gln
 275 280 285

Asp Leu Glu Val Ile Val Ile Leu Glu Gly Val Val Glu Thr Thr Gly
 290 295 300

Ile Thr Thr Gln Ala Arg Thr Ser Tyr Ile Ala Glu Glu Ile Gln Trp
 305 310 315 320

Gly His Arg Phe Val Ser Ile Val Thr Glu Glu Glu Gly Val Tyr Ser
 325 330 335

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

Cys Ser Ala Arg Glu Leu Asp Glu Lys Pro Ser Ile Leu Ile Gln Thr
 355 360 365

Leu Gln Lys Ser Glu Leu Ser His Gln Asn Ser Leu Arg Lys Arg Asn
 370 375 380

Ser Met Arg Arg Asn Asn Ser Met Arg Arg Asn Asn Ser Ile Arg Arg
 385 390 395 400

Asn Asn Ser Ser Leu Met Val Pro Lys Val Gln Phe Met Thr Pro Glu
 405 410 415

Gly Asn Gln Asn Thr Ser Glu Ser
 420

<210> 220
 <211> 360
 <212> PRT

<213> Homo sapiens

<400> 220

Met Asp Ser Ser Asn Cys Lys Val Ile Ala Pro Leu Leu Ser Gln Arg
 1 5 10 15
 Tyr Arg Arg Met Val Thr Lys Asp Gly His Ser Thr Leu Gln Met Asp
 20 25 30
 Gly Ala Gln Arg Gly Leu Ala Tyr Leu Arg Asp Ala Trp Gly Ile Leu
 35 40 45
 Met Asp Met Arg Trp Arg Trp Met Met Leu Val Phe Ser Ala Ser Phe
 50 55 60
 Val Val His Trp Leu Val Phe Ala Val Leu Trp Tyr Val Leu Ala Glu
 65 70 75 80
 Met Asn Gly Asp Leu Glu Leu Asp His Asp Ala Pro Pro Glu Asn His
 85 90 95
 Thr Ile Cys Val Lys Tyr Ile Thr Ser Phe Thr Ala Ala Phe Ser Phe
 100 105 110
 Ser Leu Glu Thr Gln Leu Thr Ile Gly Tyr Gly Thr Met Phe Pro Ser
 115 120 125
 Gly Asp Cys Pro Ser Ala Ile Ala Leu Leu Ala Ile Gln Met Leu Leu
 130 135 140
 Gly Leu Met Leu Glu Ala Phe Ile Thr Gly Ala Phe Val Ala Lys Ile
 145 150 155 160
 Ala Arg Pro Lys Asn Arg Ala Phe Ser Ile Arg Phe Thr Asp Thr Ala
 165 170 175
 Val Val Ala His Met Asp Gly Lys Pro Asn Leu Ile Phe Gln Val Ala
 180 185 190
 Asn Thr Arg Pro Ser Pro Leu Thr Ser Val Arg Val Ser Ala Val Leu
 195 200 205
 Tyr Gln Glu Arg Glu Asn Gly Lys Leu Tyr Gln Thr Ser Val Asp Phe
 210 215 220
 His Leu Asp Gly Ile Ser Ser Asp Glu Cys Pro Phe Phe Ile Phe Pro
 225 230 235 240
 Leu Thr Tyr Tyr His Ser Ile Thr Pro Ser Ser Pro Leu Ala Thr Leu
 245 250 255
 Leu Gln His Glu Asn Pro Ser His Phe Glu Leu Val Val Phe Leu Ser

260 265 523 270
 Ala Met Gln Glu Gly Thr Gly Glu Ile Cys Gln Arg Arg Thr Ser Tyr
 275 280 285
 Leu Pro Ser Glu Ile Met Leu His His Cys Phe Ala Ser Leu Leu Thr
 290 295 300
 Arg Gly Ser Lys Gly Glu Tyr Gln Ile Lys Met Glu Asn Phe Asp Lys
 305 310 315 320
 Thr Val Pro Glu Phe Pro Thr Pro Leu Val Ser Lys Ser Pro Asn Arg
 325 330 335
 Thr Asp Leu Asp Ile His Ile Asn Gly Gln Ser Ile Asp Asn Phe Gln
 340 345 350
 Ile Ser Glu Thr Gly Leu Thr Glu
 355 360

<210> 221
 <211> 495
 <212> PRT
 <213> Homo sapiens

<400> 221

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

Pro Glu Lys Glu Tyr Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr Pro
 145 150 155 160
 Glu Ser Ser Gly Pro Ala Arg Val Ile Ala Ile Val Ser Val Met Val
 165 170 175
 Ile Leu Ile Ser Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Leu
 180 185 190
 Lys Asp Asp Lys Asp Phe Thr Gly Thr Val His Arg Ile Asp Asn Thr
 195 200 205
 Thr Val Ile Tyr Asn Ser Asn Ile Phe Thr Asp Pro Phe Phe Ile Val
 210 215 220
 Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe Glu Leu Val Val Arg Phe
 225 230 235 240
 Phe Ala Cys Pro Ser Lys Thr Asp Phe Phe Lys Asn Ile Met Asn Phe
 245 250 255
 Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe Ile Thr Leu Gly Thr Glu
 260 265 270
 Ile Ala Glu Gln Glu Gly Asn Gln Lys Gly Glu Gln Ala Thr Ser Leu
 275 280 285
 Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys
 290 295 300
 Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Lys
 305 310 315 320
 Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly
 325 330 335
 Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Ala Glu Glu Ala
 340 345 350
 Glu Ser His Phe Ser Ser Ile Pro Asp Ala Phe Trp Trp Ala Val Val
 355 360 365
 Ser Met Thr Thr Val Gly Tyr Gly Asp Met Tyr Pro Val Thr Ile Gly
 370 375 380
 Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile
 385 390 395 400
 Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn Tyr Phe Tyr His
 405 410 415

Arg Glu Thr Glu Gly Glu Glu Gln Ala Gln Leu Leu His Val Ser Ser
420 425 525 430

Pro Asn Leu Ala Ser Asp Ser Asp Leu Ser Arg Arg Ser Ser Ser Thr
435 440 445

Met Ser Lys Ser Glu Tyr Met Glu Ile Glu Glu Asp Met Asn Asn Ser
450 455 460

Ile Ala His Tyr Arg Gln Val Asn Ile Arg Thr Ala Asn Cys Thr Thr
465 470 475 480

Ala Asn Gln Asn Cys Val Asn Lys Ser Lys Leu Leu Thr Asp Val
485 490 495

<210> 222
<211> 499
<212> PRT
<213> Homo sapiens

<400> 222

Met Thr Val Ala Thr Gly Asp Pro Ala Asp Glu Ala Ala Ala Leu Pro
1 5 10 15

Gly His Pro Gln Asp Thr Tyr Asp Pro Glu Ala Asp His Glu Cys Cys
20 25 30

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

Lys Thr Leu Ala Gln Phe Pro Glu Thr Leu Leu Gly Asp Pro Lys Lys
50 55 60

Arg Met Arg Tyr Phe Asp Pro Leu Arg Asn Glu Tyr Phe Phe Asp Arg
65 70 75 80

Asn Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr Tyr Gln Ser Gly Gly
85 90 95

Arg Leu Arg Arg Pro Val Asn Val Pro Leu Asp Ile Phe Ser Glu Glu
100 105 110

Ile Arg Phe Tyr Glu Leu Gly Glu Glu Ala Met Glu Met Phe Arg Glu
115 120 125

Asp Glu Gly Tyr Ile Lys Glu Glu Glu Arg Pro Leu Pro Glu Asn Glu
130 135 140

Phe Gln Arg Gln Val Trp Leu Leu Phe Glu Tyr Pro Glu Ser Ser Gly
145 150 155 160

Pro Ala Arg Ile Ile Ala Ile Val Ser Val Met Val Ile Leu Ile Ser
165 170 175

Ile Val Ser Phe Cys Leu Glu Thr Leu Pro Ile Phe Arg Asp Glu Asn
 180 185 190
 Glu Asp Met His Gly Ser Gly Val Thr Phe His Thr Tyr Ser Asn Ser
 195 200 205
 Thr Ile Gly Tyr Gln Gln Ser Thr Ser Phe Thr Asp Pro Phe Phe Ile
 210 215 220
 Val Glu Thr Leu Cys Ile Ile Trp Phe Ser Phe Glu Phe Leu Val Arg
 225 230 235 240
 Phe Phe Ala Cys Pro Ser Lys Ala Gly Phe Phe Thr Asn Ile Met Asn
 245 250 255
 Ile Ile Asp Ile Val Ala Ile Ile Pro Tyr Phe Ile Thr Leu Gly Thr
 260 265 270
 Glu Leu Ala Glu Lys Pro Glu Asp Ala Gln Gln Gly Gln Gln Ala Met
 275 280 285
 Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile
 290 295 300
 Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr
 305 310 315 320
 Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe
 325 330 335
 Ile Gly Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Ala Asp
 340 345 350
 Glu Arg Glu Ser Gln Phe Pro Ser Ile Pro Asp Ala Phe Trp Trp Ala
 355 360 365
 Val Val Ser Met Thr Thr Val Gly Tyr Gly Asp Met Val Pro Thr Thr
 370 375 380
 Ile Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu
 385 390 395 400
 Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser Asn Phe Asn Tyr Phe
 405 410 415
 Tyr His Arg Glu Thr Glu Gly Glu Glu Gln Ala Gln Tyr Leu Gln Val
 420 425 430
 Thr Ser Cys Pro Lys Ile Pro Ser Ser Pro Asp Leu Lys Lys Ser Arg
 435 440 445

Ser Ala Ser Thr Ile Ser Lys Ser Asp Tyr Met Glu Ile Gln Glu Gly
450 455 460

Val Asn Asn Ser Asn Glu Asp Phe Arg Glu Glu Asn Leu Lys Thr Ala
465 470 475 480

Asn Cys Thr Leu Ala Asn Thr Asn Tyr Val Asn Ile Thr Lys Met Leu
485 490 495

Thr Asp Val

<210> 223
<211> 575
<212> PRT
<213> Homo sapiens

<400> 223

Met Asp Glu Arg Leu Ser Leu Leu Arg Ser Pro Pro Pro Pro Ser Ala
1 5 10 15

Arg His Arg Ala His Pro Pro Gln Arg Pro Ala Ser Ser Gly Gly Ala
20 25 30

His Thr Leu Val Asn His Gly Tyr Ala Glu Pro Ala Ala Gly Arg Glu
35 40 45

Leu Pro Pro Asp Met Thr Val Val Pro Gly Asp His Leu Leu Glu Pro
50 55 60

Glu Val Ala Asp Gly Gly Gly Ala Pro Pro Gln Gly Gly Cys Gly Gly
65 70 75 80

Gly Gly Cys Asp Arg Tyr Glu Pro Leu Pro Pro Ser Leu Pro Ala Ala
85 90 95

Gly Glu Gln Asp Cys Cys Gly Glu Arg Val Val Ile Asn Ile Ser Gly
100 105 110

Leu Arg Phe Glu Thr Gln Leu Lys Thr Leu Cys Gln Phe Pro Glu Thr
115 120 125

Leu Leu Gly Asp Pro Lys Arg Arg Met Arg Tyr Phe Asp Pro Leu Arg
130 135 140

Asn Glu Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Ala Ile Leu
145 150 155 160

Tyr Tyr Tyr Gln Ser Gly Gly Arg Ile Arg Arg Pro Val Asn Val Pro
165 170 175

Ile Asp Ile Phe Ser Glu Glu Ile Arg Phe Tyr Gln Leu Gly Glu Glu

180 528 190
 Ala Met Glu₁₉₅ Lys Phe Arg Glu Asp₂₀₀ Glu Gly Phe Leu Arg₂₀₅ Glu Glu Glu
 Arg Pro₂₁₀ Leu Pro Arg Arg Asp₂₁₅ Phe Gln Arg Gln Val₂₂₀ Trp Leu Leu Phe
 Glu₂₂₅ Tyr Pro Glu Ser Ser₂₃₀ Gly Pro Ala Arg Gly₂₃₅ Ile Ala Ile Val Ser₂₄₀
 Val Leu Val Ile Leu₂₄₅ Ile Ser Ile Val Ile₂₅₀ Phe Cys Leu Glu Thr₂₅₅ Leu
 Pro Glu Phe Arg₂₆₀ Asp Glu Lys Asp Tyr₂₆₅ Pro Ala Ser Thr Ser₂₇₀ Gln Asp
 Ser Phe Glu₂₇₅ Ala Ala Gly Asn Ser₂₈₀ Thr Ser Gly Ser Arg₂₈₅ Ala Gly Ala
 Ser Ser₂₉₀ Phe Ser Asp Pro Phe₂₉₅ Phe Val Val Glu Thr₃₀₀ Leu Cys Ile Ile
 Trp₃₀₅ Phe Ser Phe Glu Leu₃₁₀ Leu Val Arg Phe Phe₃₁₅ Ala Cys Pro Ser Lys₃₂₀
 Ala Thr Phe Ser Arg₃₂₅ Asn Ile Met Asn Leu₃₃₀ Ile Asp Ile Val Ala₃₃₅ Ile
 Ile Pro Tyr Phe₃₄₀ Ile Thr Leu Gly Thr₃₄₅ Glu Leu Ala Glu Arg₃₅₀ Gln Gly
 Asn Gly Gln₃₅₅ Gln Ala Met Ser Leu₃₆₀ Ala Ile Leu Arg Val₃₆₅ Ile Arg Leu
 Val Arg₃₇₀ Val Phe Arg Ile Phe₃₇₅ Lys Leu Ser Arg His₃₈₀ Ser Lys Gly Leu
 Gln₃₈₅ Ile Leu Gly Gln Thr₃₉₀ Leu Lys Ala Ser Met₃₉₅ Arg Glu Leu Gly Leu₄₀₀
 Leu Ile Phe Phe Leu₄₀₅ Phe Ile Gly Val Ile₄₁₀ Leu Phe Ser Ser Ala₄₁₅ Val
 Tyr Phe Ala Glu₄₂₀ Ala Asp Asp Pro Thr₄₂₅ Ser Gly Phe Ser Ser₄₃₀ Ile Pro
 Asp Ala Phe₄₃₅ Trp Trp Ala Val Val₄₄₀ Thr Met Thr Thr Val₄₄₅ Gly Tyr Gly
 Asp Met₄₅₀ His Pro Val Thr Ile₄₅₅ Gly Gly Lys Ile Val₄₆₀ Gly Ser Leu Cys

Ala Ile Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val
465 470 475 480

Ser Asn Phe Asn Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu Gln
485 490 495

Ser Gln Tyr Met His Val Gly Ser Cys Gln His Leu Ser Ser Ser Ala
500 505 510

Glu Glu Leu Arg Lys Ala Arg Ser Asn Ser Thr Leu Ser Lys Ser Glu
515 520 525

Tyr Met Val Ile Glu Glu Gly Gly Met Asn His Ser Ala Phe Pro Gln
530 535 540

Thr Pro Phe Lys Thr Gly Asn Ser Thr Ala Thr Cys Thr Thr Asn Asn
545 550 555 560

Asn Pro Asn Ser Cys Val Asn Ile Lys Lys Ile Phe Thr Asp Val
565 570 575

<210> 224
<211> 653
<212> PRT
<213> Homo sapiens
<400> 224

Met Glu Val Ala Met Val Ser Ala Glu Ser Ser Gly Cys Asn Ser His
1 5 10 15

Met Pro Tyr Gly Tyr Ala Ala Gln Ala Arg Ala Arg Glu Arg Glu Arg
20 25 30

Leu Ala His Ser Arg Arg Ala Ala Ala Arg Ala Val Ala Ala Ala Thr
35 40 45

Ala Ala Val Glu Gly Ser Gly Gly Ser Gly Gly Gly Ser His His His
50 55 60

His Gln Ser Arg Gly Ala Cys Thr Ser His Asp Pro Gln Ser Ser Arg
65 70 75 80

Gly Ser Arg Glu Glu Glu Ala Thr Arg Ser Glu Lys Lys Lys Ala His
85 90 95

Tyr Arg Gln Ser Ser Phe Pro His Cys Ser Asp Leu Met Pro Ser Gly
100 105 110

Ser Glu Glu Lys Ile Leu Arg Glu Leu Ser Glu Glu Glu Glu Asp Glu
115 120 125

Glu Glu Glu Glu Glu Glu Glu Glu Glu Gly Arg⁵³⁰ Phe Tyr Tyr Ser Glu
 130 135 140
 Asp Asp His Gly Asp Glu Cys Ser Tyr Thr Asp Leu Leu Pro Gln Asp
 145 150 155 160
 Glu Gly Gly Gly Gly Tyr Ser Ser Val Arg Tyr Ser Asp Cys Cys Glu
 165 170 175
 Arg Val Val Ile Asn Val Ser Gly Leu Arg Phe Glu Thr Gln Met Lys
 180 185 190
 Thr Leu Ala Gln Phe Pro Glu Thr Leu Leu Gly Asp Pro Glu Lys Arg
 195 200 205
 Thr Gln Tyr Phe Asp Pro Leu Arg Asn Glu Tyr Phe Phe Asp Arg Asn
 210 215 220
 Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr Tyr Gln Ser Gly Gly Arg
 225 230 235 240
 Leu Lys Arg Pro Val Asn Val Pro Phe Asp Ile Phe Thr Glu Glu Val
 245 250 255
 Lys Phe Tyr Gln Leu Gly Glu Glu Ala Leu Leu Lys Phe Arg Glu Asp
 260 265 270
 Glu Gly Phe Val Arg Glu Glu Glu Asp Arg Ala Leu Pro Glu Asn Glu
 275 280 285
 Phe Lys Lys Gln Ile Trp Leu Leu Phe Glu Tyr Pro Glu Ser Ser Asp
 290 295 300
 Pro Ala Arg Gly Ile Ala Ile Val Ser Val Leu Val Ile Leu Ile Ser
 305 310 315 320
 Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Phe Arg Asp Asp Arg
 325 330 335
 Asp Leu Val Met Ala Leu Ser Ala Gly Gly His Gly Gly Leu Leu Asn
 340 345 350
 Asp Thr Ser Ala Pro His Leu Glu Asn Ser Gly His Thr Ile Phe Asn
 355 360 365
 Asp Pro Phe Phe Ile Val Glu Thr Val Cys Ile Val Trp Phe Ser Phe
 370 375 380
 Glu Phe Val Val Arg Cys Phe Ala Cys Pro Ser Gln Ala Leu Phe Phe
 385 390 395 400
 Lys Asn Ile Met Asn Ile Ile Asp Ile Val Ser Ile Leu Pro Tyr Phe

405 531 415
 Ile Thr Leu Gly Thr Asp Leu Ala Gln Gln Gln Gly Gly Gly Asn Gly
 420 425 430
 Gln Gln Gln Gln Ala Met Ser Phe Ala Ile Leu Arg Ile Ile Arg Leu
 435 440 445
 Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu
 450 455 460
 Gln Ile Leu Gly His Thr Leu Arg Ala Ser Met Arg Glu Leu Gly Leu
 465 470 475 480
 Leu Ile Phe Phe Leu Phe Ile Gly Val Ile Leu Phe Ser Ser Ala Val
 485 490 495
 Tyr Phe Ala Glu Ala Asp Glu Pro Thr Thr His Phe Gln Ser Ile Pro
 500 505 510
 Asp Ala Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr Gly
 515 520 525
 Asp Met Lys Pro Ile Thr Val Gly Gly Lys Ile Val Gly Val Leu Cys
 530 535 540
 Ala Ile Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val
 545 550 555 560
 Ser Asn Phe Asn Tyr Phe Tyr His Arg Glu Thr Glu Asn Glu Glu Gln
 565 570 575
 Thr Gln Leu Thr Gln Asn Ala Val Ser Cys Pro Tyr Leu Pro Ser Asn
 580 585 590
 Leu Leu Lys Lys Phe Arg Ser Ser Thr Ser Ser Ser Leu Gly Asp Lys
 595 600 605
 Ser Glu Tyr Leu Glu Met Glu Glu Gly Val Lys Glu Ser Leu Cys Ala
 610 615 620
 Lys Glu Glu Lys Cys Gln Ala Lys Gly Asp Asp Ser Glu Thr Asp Lys
 625 630 635 640
 Asn Asn Cys Ser Asn Ala Lys Ala Val Glu Thr Asp Val
 645 650

<210> 225
 <211> 613
 <212> PRT
 <213> Homo sapiens
 <400> 225

Met Glu Ile Ala Leu Val Pro Leu Glu Asn Gly Gly Ala Met Thr Val
 1 5 10 15
 Arg Gly Gly Asp Glu Ala Arg Ala Gly Cys Gly Gln Ala Thr Gly Gly
 20 25 30
 Glu Leu Gln Cys Pro Pro Thr Ala Gly Leu Ser Asp Gly Pro Lys Glu
 35 40 45
 Pro Ala Pro Lys Gly Arg Gly Ala Gln Arg Asp Ala Asp Ser Gly Val
 50 55 60
 Arg Pro Leu Pro Pro Leu Pro Asp Pro Gly Val Arg Pro Leu Pro Pro
 65 70 75 80
 Leu Pro Glu Glu Leu Pro Arg Pro Arg Arg Pro Pro Pro Glu Asp Glu
 85 90 95
 Glu Glu Glu Gly Asp Pro Gly Leu Gly Thr Val Glu Asp Gln Ala Leu
 100 105 110
 Gly Thr Ala Ser Leu His His Gln Arg Val His Ile Asn Ile Ser Gly
 115 120 125
 Leu Arg Phe Glu Thr Gln Leu Gly Thr Leu Ala Gln Phe Pro Asn Thr
 130 135 140
 Leu Leu Gly Asp Pro Ala Lys Arg Leu Arg Tyr Phe Asp Pro Leu Arg
 145 150 155 160
 Asn Glu Tyr Phe Phe Asp Arg Asn Arg Pro Ser Phe Asp Gly Ile Leu
 165 170 175
 Tyr Tyr Tyr Gln Ser Gly Gly Arg Leu Arg Arg Pro Val Asn Val Ser
 180 185 190
 Leu Asp Val Phe Ala Asp Glu Ile Arg Phe Tyr Gln Leu Gly Asp Glu
 195 200 205
 Ala Met Glu Arg Phe Arg Glu Asp Glu Gly Phe Ile Lys Glu Glu Glu
 210 215 220
 Lys Pro Leu Pro Arg Asn Glu Phe Gln Arg Gln Val Trp Leu Ile Phe
 225 230 235 240
 Glu Tyr Pro Glu Ser Ser Gly Ser Ala Arg Ala Ile Ala Ile Val Ser
 245 250 255
 Val Leu Val Ile Leu Ile Ser Ile Ile Thr Phe Cys Leu Glu Thr Leu
 260 265 270

Pro Glu Phe Arg Asp Glu Arg Glu Leu Leu Arg His Pro Pro Ala Pro
 275 280 533 285

His Gln Pro Pro Ala Pro Ala Pro Gly Ala Asn Gly Ser Gly Val Met
 290 295 300

Ala Pro Pro Ser Gly Pro Thr Val Ala Pro Leu Leu Pro Arg Thr Leu
 305 310 315 320

Ala Asp Pro Phe Phe Ile Val Glu Thr Thr Cys Val Ile Trp Phe Thr
 325 330 335

Phe Glu Leu Leu Val Arg Phe Phe Ala Cys Pro Ser Lys Ala Gly Phe
 340 345 350

Ser Arg Asn Ile Met Asn Ile Ile Asp Val Val Ala Ile Phe Pro Tyr
 355 360 365

Phe Ile Thr Leu Gly Thr Glu Leu Ala Glu Gln Gln Pro Gly Gly Gly
 370 375 380

Gly Gly Gly Gln Asn Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg
 385 390 395 400

Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His
 405 410 415

Ser Lys Gly Leu Gln Ile Leu Gly Lys Thr Leu Gln Ala Ser Met Arg
 420 425 430

Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Ile Leu Phe
 435 440 445

Ser Ser Ala Val Tyr Phe Ala Glu Ala Asp Asn Gln Gly Thr His Phe
 450 455 460

Ser Ser Ile Pro Asp Ala Phe Trp Trp Ala Val Val Thr Met Thr Thr
 465 470 475 480

Val Gly Tyr Gly Asp Met Arg Pro Ile Thr Val Gly Gly Lys Ile Val
 485 490 495

Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ala Leu Pro Val
 500 505 510

Pro Val Ile Val Ser Asn Phe Asn Tyr Phe Tyr His Arg Glu Thr Asp
 515 520 525

His Glu Glu Pro Ala Val Leu Lys Glu Glu Gln Gly Thr Gln Ser Gln
 530 535 540

Gly Pro Gly Leu Asp Arg Gly Val Gln Arg Lys Val Ser Gly Ser Arg

534																560
555																
545																
550																
Gly	Ser	Phe	Cys	Lys	Ala	Gly	Gly	Thr	Leu	Glu	Asn	Ala	Asp	Ser	Ala	
				565												
Arg	Arg	Gly	Ser	Cys	Pro	Leu	Glu	Lys	Cys	Asn	Val	Lys	Ala	Lys	Ser	
				580												
Asn	Val	Asp	Leu	Arg	Arg	Ser	Leu	Tyr	Ala	Leu	Cys	Leu	Asp	Thr	Ser	
				595												
Arg	Glu	Thr	Asp	Leu												
				610												
<210> 226																
<211> 529																
<212> PRT																
<213> Homo sapiens																
<400> 226																
Met	Arg	Ser	Glu	Lys	Ser	Leu	Thr	Leu	Ala	Ala	Pro	Gly	Glu	Val	Arg	
				5												
Gly	Pro	Glu	Gly	Glu	Gln	Gln	Asp	Ala	Gly	Asp	Phe	Pro	Glu	Ala	Gly	
				20												
Gly	Gly	Gly	Gly	Cys	Cys	Ser	Ser	Glu	Arg	Leu	Val	Ile	Asn	Ile	Ser	
				35												
Gly	Leu	Arg	Phe	Glu	Thr	Gln	Leu	Arg	Thr	Leu	Ser	Leu	Phe	Pro	Asp	
				50												
Thr	Leu	Leu	Gly	Asp	Pro	Gly	Arg	Arg	Val	Arg	Phe	Phe	Asp	Pro	Leu	
				65												
Arg	Asn	Glu	Tyr	Phe	Phe	Asp	Arg	Asn	Arg	Pro	Ser	Phe	Asp	Ala	Ile	
				85												
Leu	Tyr	Tyr	Tyr	Gln	Ser	Gly	Gly	Arg	Leu	Arg	Arg	Pro	Val	Asn	Val	
				100												
Pro	Leu	Asp	Ile	Phe	Leu	Glu	Glu	Ile	Arg	Phe	Tyr	Gln	Leu	Gly	Asp	
				115												
Glu	Ala	Leu	Ala	Ala	Phe	Arg	Glu	Asp	Glu	Gly	Cys	Leu	Pro	Glu	Gly	
				130												
Gly	Glu	Asp	Glu	Lys	Pro	Leu	Pro	Ser	Gln	Pro	Phe	Gln	Arg	Gln	Val	
				145												
Trp	Leu	Leu	Phe	Glu	Tyr	Pro	Glu	Ser	Ser	Gly	Pro	Ala	Arg	Gly	Ile	
				165												

Ala Ile Val Ser Val Leu Val Ile Leu Ile Ser Ile Val Ile Phe Cys
 180 185 190
 Leu Glu Thr Leu Pro Gln Phe Arg Val Asp Gly Arg Gly Gly Asn Asn
 195 200 205
 Gly Gly Val Ser Arg Val Ser Pro Val Ser Arg Gly Ser Gln Glu Glu
 210 215 220
 Glu Glu Asp Glu Asp Asp Ser Tyr Thr Phe His His Gly Ile Thr Pro
 225 230 235 240
 Gly Glu Met Gly Thr Gly Gly Ser Ser Ser Leu Ser Thr Leu Gly Gly
 245 250 255
 Ser Phe Phe Thr Asp Pro Phe Phe Leu Val Glu Thr Leu Cys Ile Val
 260 265 270
 Trp Phe Thr Phe Glu Leu Leu Val Arg Phe Ser Ala Cys Pro Ser Lys
 275 280 285
 Pro Ala Phe Phe Arg Asn Ile Met Asn Ile Ile Asp Leu Val Ala Ile
 290 295 300
 Phe Pro Tyr Phe Ile Thr Leu Gly Thr Glu Leu Val Gln Gln Gln Glu
 305 310 315 320
 Gln Gln Pro Ala Ser Gly Gly Gly Gly Gln Asn Gly Gln Gln Ala Met
 325 330 335
 Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile
 340 345 350
 Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile Leu Gly Lys Thr
 355 360 365
 Leu Gln Ala Ser Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe
 370 375 380
 Ile Gly Val Ile Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Ala Asp
 385 390 395 400
 Asp Asp Asp Ser Leu Phe Pro Ser Ile Pro Asp Ala Phe Trp Trp Ala
 405 410 415
 Val Val Thr Met Thr Thr Val Gly Tyr Gly Asp Met Tyr Pro Met Thr
 420 425 430
 Val Gly Gly Lys Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu
 435 440 445

Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser⁵³⁶ Asn Phe Asn Tyr Phe
 450 455 460
 Tyr His Arg Glu Thr Glu Gln Glu Glu Gln Gly Gln Tyr Thr His Val
 465 470 475 480
 Thr Cys Gly Gln Pro Ala Pro Asp Leu Arg Ala Thr Asp Asn Gly Leu
 485 490 495
 Gly Lys Pro Asp Phe Pro Glu Ala Asn Arg Glu Arg Arg Pro Ser Tyr
 500 505 510
 Leu Pro Thr Pro His Arg Ala Tyr Ala Glu Lys Arg Met Leu Thr Glu
 515 520 525
 Val

<210> 227
 <211> 616
 <212> PRT
 <213> Homo sapiens

<400> 227

Met Ala Ala Val Ala Gly Leu Tyr Gly Leu Gly Glu Asp Arg Gln His
 1 5 10 15
 Arg Lys Lys Gln Gln Gln Gln Gln His Gln Lys Glu Gln Leu Glu
 20 25 30
 Gln Lys Glu Glu Gln Lys Lys Ile Ala Glu Arg Lys Leu Gln Leu Arg
 35 40 45
 Glu Gln Gln Leu Gln Arg Asn Ser Leu Asp Gly Tyr Gly Ser Leu Pro
 50 55 60
 Lys Leu Ser Ser Gln Asp Glu Glu Gly Gly Ala Gly His Gly Phe Gly
 65 70 75 80
 Gly Gly Pro Gln His Phe Glu Pro Ile Pro His Asp His Asp Phe Cys
 85 90 95
 Glu Arg Val Val Ile Asn Val Ser Gly Leu Arg Phe Glu Thr Gln Leu
 100 105 110
 Arg Thr Leu Asn Gln Phe Pro Asp Thr Leu Leu Gly Asp Pro Ala Arg
 115 120 125
 Arg Leu Arg Tyr Phe Asp Pro Leu Arg Asn Glu Tyr Phe Phe Asp Arg
 130 135 140
 Ser Arg Pro Ser Phe Asp Ala Ile Leu Tyr Tyr Tyr Gln Ser Gly Gly
 145 150 155 160

Arg Leu Arg Arg Pro Val Asn Val Pro Leu Asp Val Phe Ser Glu Glu
 165 170 175
 Ile Lys Phe Tyr Glu Leu Gly Asp Gln Ala Ile Asn Lys Phe Arg Glu
 180 185 190
 Asp Glu Gly Phe Ile Lys Glu Glu Glu Arg Pro Leu Pro Asp Asn Glu
 195 200 205
 Lys Gln Arg Lys Val Trp Leu Leu Phe Glu Tyr Pro Glu Ser Ser Gln
 210 215 220
 Ala Ala Arg Val Val Ala Ile Ile Ser Val Phe Val Ile Leu Leu Ser
 225 230 235 240
 Ile Val Ile Phe Cys Leu Glu Thr Leu Pro Glu Phe Lys His Tyr Lys
 245 250 255
 Val Phe Asn Thr Thr Thr Asn Gly Thr Lys Ile Glu Glu Asp Glu Val
 260 265 270
 Pro Asp Ile Thr Asp Pro Phe Phe Leu Ile Glu Thr Leu Cys Ile Ile
 275 280 285
 Trp Phe Thr Phe Glu Leu Thr Val Arg Phe Leu Ala Cys Pro Asn Lys
 290 295 300
 Leu Asn Phe Cys Arg Asp Val Met Asn Val Ile Asp Ile Ile Ala Ile
 305 310 315 320
 Ile Pro Tyr Phe Ile Thr Leu Ala Thr Val Val Ala Glu Glu Glu Asp
 325 330 335
 Thr Leu Asn Leu Pro Lys Ala Pro Val Ser Pro Gln Asp Lys Ser Ser
 340 345 350
 Asn Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu Val Arg
 355 360 365
 Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu Gln Ile
 370 375 380
 Leu Gly Arg Thr Leu Lys Ala Ser Met Arg Glu Leu Gly Leu Leu Ile
 385 390 395 400
 Phe Phe Leu Phe Ile Gly Val Val Leu Phe Ser Ser Ala Val Tyr Phe
 405 410 415
 Ala Glu Ala Gly Ser Glu Asn Ser Phe Phe Lys Ser Ile Pro Asp Ala
 420 425 430

Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr Gly Asp Met
435 440 445

Thr Pro Val Gly Phe Trp Gly Lys Ile Val Gly Ser Leu Cys Val Val
450 455 460

Ala Gly Val Leu Thr Ile Ala Leu Pro Val Pro Val Ile Val Ser Asn
465 470 475 480

Phe Asn Tyr Phe Tyr His Arg Glu Ala Asp Arg Glu Glu Met Gln Ser
485 490 495

Gln Asn Phe Asn His Val Thr Ser Cys Ser Tyr Leu Pro Gly Ala Leu
500 505 510

Gly Gln His Leu Lys Lys Ser Ser Leu Ser Glu Ser Ser Ser Asp Ile
515 520 525

Met Asp Leu Asp Asp Gly Ile Asp Ala Thr Thr Pro Gly Leu Thr Asp
530 535 540

His Thr Gly Arg His Met Val Pro Phe Leu Arg Thr Gln Gln Ser Phe
545 550 555 560

Glu Lys Gln Gln Leu Gln Leu Gln Leu Gln Leu Gln Gln Ser Gln
565 570 575

Ser Pro His Gly Gln Gln Met Thr Gln Gln Gln Gln Leu Gly Gln Asn
580 585 590

Gly Leu Arg Ser Thr Asn Ser Leu Gln Leu Arg His Asn Asn Ala Met
595 600 605

Ala Val Ser Ile Glu Thr Asp Val
610 615

<210> 228
<211> 619
<212> PRT
<213> Homo sapiens

<400> 228

Met Thr Tyr Ile Pro Lys Lys Met Gln His Tyr Ala His Ala Ala Met
1 5 10 15

Asn Leu Ile Asn Met Asp Ser Glu Asn Arg Val Val Leu Asn Val Gly
20 25 30

Gly Ile Arg His Glu Thr Tyr Lys Ala Thr Leu Lys Lys Ile Pro Ala
35 40 45

Thr Arg Leu Ser Arg Leu Thr Glu Ala Leu Ala Asn Tyr Asp Pro Ile

50 55 60
 Leu Asn Glu Tyr Phe Phe Asp Arg His Pro Gly Val Phe Ala Gln Val
 65 70 75 80
 Leu Asn Tyr Tyr Arg Thr Gly Lys Leu His Tyr Pro Thr Asp Val Cys
 85 90 95
 Gly Pro Leu Phe Glu Glu Glu Leu Glu Phe Trp Gly Leu Asp Ser Asn
 100 105 110
 Gln Val Glu Pro Cys Cys Trp Met Thr Tyr Thr Gln His Arg Asp Thr
 115 120 125
 Gln Glu Thr Leu Ala Val Leu Asp Arg Leu Asp Leu Asp Thr Glu Lys
 130 135 140
 Pro Ser Glu Glu Glu Leu Ala Arg Lys Phe Gly Phe Glu Glu Asp Tyr
 145 150 155 160
 Tyr Lys Gly Thr Ile Ser Trp Trp Gln Glu Met Lys Pro Arg Ile Trp
 165 170 175
 Ser Leu Phe Asp Glu Pro Tyr Ser Ser Asn Ala Ala Lys Thr Ile Gly
 180 185 190
 Val Val Ser Val Phe Phe Ile Cys Ile Ser Ile Leu Ser Phe Cys Leu
 195 200 205
 Lys Thr His Pro Asp Met Arg Val Pro Ile Val Arg Asn Ile Thr Val
 210 215 220
 Lys Thr Ala Asn Gly Ser Asn Gly Trp Phe Leu Asp Lys Thr Gln Thr
 225 230 235 240
 Asn Ala His Ile Ala Phe Phe Tyr Ile Glu Cys Val Cys Asn Ala Trp
 245 250 255
 Phe Thr Phe Glu Ile Leu Val Arg Phe Ile Ser Ser Pro Asn Lys Trp
 260 265 270
 Glu Phe Ile Lys Ser Ser Val Asn Ile Ile Asp Tyr Ile Ala Thr Leu
 275 280 285
 Ser Phe Tyr Ile Asp Leu Val Leu Gln Arg Phe Ala Ser His Leu Glu
 290 295 300
 Asn Ala Asp Ile Leu Glu Phe Phe Ser Ile Ile Arg Ile Met Arg Leu
 305 310 315 320
 Phe Lys Leu Thr Arg His Ser Ser Gly Leu Lys Ile Leu Ile Gln Thr
 325 330 335

Phe Arg Ala Ser₃₄₀ Ala Lys Glu Leu Thr₃₄₅ Leu Leu Val Phe Phe₃₅₀ Leu Val
 Leu Gly Ile₃₅₅ Val Ile Phe Ala Ser₃₆₀ Leu Val Tyr Tyr Ala₃₆₅ Glu Arg Ile
 Gln Pro₃₇₀ Asn Pro His Asn Asp₃₇₅ Phe Asn Ser Ile Pro₃₈₀ Leu Gly Leu Trp
 Trp₃₈₅ Ala Leu Val Thr Met₃₉₀ Thr Thr Val Gly Tyr₃₉₅ Gly Asp Met Ala Pro₄₀₀
 Lys Thr Tyr Ile Gly₄₀₅ Met Phe Val Gly Ala₄₁₀ Leu Cys Ala Leu Ala₄₁₅ Gly
 Val Leu Thr Ile₄₂₀ Ala Leu Pro Val Pro₄₂₅ Val Ile Val Ser Asn₄₃₀ Phe Ala
 Met Tyr Tyr₄₃₅ Ser His Thr Gln Ala₄₄₀ Arg Ala Lys Leu Pro₄₄₅ Lys Lys Arg
 Arg Arg₄₅₀ Val Leu Pro Val Glu₄₅₅ Gln Pro Arg Gln Pro₄₆₀ Arg Leu Pro Gly
 Ala₄₆₅ Pro Gly Gly Val Ser₄₇₀ Gly Cys Gly Thr Pro₄₇₅ Gly Ser Gly Pro His₄₈₀
 Ser Gly Pro Met Gly₄₈₅ Ser Gly Gly Thr Gly₄₉₀ Pro Arg Arg Met Asn₄₉₅ Asn
 Lys Thr Lys Asp₅₀₀ Leu Val Ser Pro Lys₅₀₅ Ser Val Ala Gln Leu₅₁₀ Phe Ala
 Gly Pro Leu₅₁₅ Gly Ala Ser Ile Val₅₂₀ Ala Met Ser Pro Arg₅₂₅ Thr Met Leu
 Asp Leu₅₃₀ Asn Pro Ala Leu Ala₅₃₅ Met Gly Lys Pro Thr₅₄₀ Phe Gln Pro Arg
 Ile₅₄₅ Pro Thr Pro Leu Ala₅₅₀ Ala Thr Pro Pro Pro₅₅₅ Pro Val Ser Ser Ala₅₆₀
 Gly Gly Met Thr Ala₅₆₅ Ser Gly Ile Gly Thr₅₇₀ Thr Ser Ala Thr Gly₅₇₅ Ala
 Thr Ser Ala Pro₅₈₀ Gln Pro Ala Thr Pro₅₈₅ Leu Pro Ser Ile Ala₅₉₀ Val Ser
 Thr Thr Ala₅₉₅ Ser Val Gly Lys Asp₆₀₀ Leu Gly Ile Ser Thr₆₀₅ Thr Thr Thr

Thr Ala Gln Glu Thr Ser Lys Lys Ala Phe Leu
610 615

<210> 229
<211> 400
<212> PRT
<213> Homo sapiens

<400> 229

Met Ala Ser Leu Ser Gln Leu Ser Ser His Leu Asn Tyr Thr Cys Gly
1 5 10 15

Ala Glu Asn Ser Thr Gly Ala Ser Gln Ala Arg Pro His Ala Tyr Tyr
20 25 30

Ala Leu Ser Tyr Cys Ala Leu Ile Leu Ala Ile Val Phe Gly Asn Gly
35 40 45

Leu Val Cys Met Ala Val Leu Lys Glu Arg Ala Leu Gln Thr Thr Thr
50 55 60

Asn Tyr Leu Val Val Ser Leu Ala Val Ala Asp Leu Leu Val Ala Thr
65 70 75 80

Leu Val Met Pro Trp Val Val Tyr Leu Glu Val Thr Gly Gly Val Trp
85 90 95

Asn Phe Ser Arg Ile Cys Cys Asp Val Phe Val Thr Leu Asp Val Met
100 105 110

Met Cys Thr Ala Ser Ile Leu Asn Leu Cys Ala Ile Ser Ile Asp Arg
115 120 125

Tyr Thr Ala Val Val Met Pro Val His Tyr Gln His Gly Thr Gly Gln
130 135 140

Ser Ser Cys Arg Arg Val Ala Leu Met Ile Thr Ala Val Trp Val Leu
145 150 155 160

Ala Phe Ala Val Ser Cys Pro Leu Leu Phe Gly Phe Asn Thr Thr Gly
165 170 175

Asp Pro Thr Val Cys Ser Ile Ser Asn Pro Asp Phe Val Ile Tyr Ser
180 185 190

Ser Val Val Ser Phe Tyr Leu Pro Phe Gly Val Thr Val Leu Val Tyr
195 200 205

Ala Arg Ile Tyr Val Val Leu Lys Gln Arg Arg Arg Lys Arg Ile Leu
210 215 220

Thr Arg Gln Asn Ser Gln Cys Asn Ser Val Arg Pro Gly Phe Pro Gln

Phe Tyr Asn Lys Ser₈₅ Leu Ser Ser Phe Lys₉₀ Glu Asn Glu Glu Asn₉₅ Ile
 Gln Cys Gly Glu₁₀₀ Asn Phe Met Asp Ile₁₀₅ Glu Cys Phe Met Val₁₁₀ Leu Asn
 Pro Ser Gln₁₁₅ Gln Leu Ala Ile Ala₁₂₀ Val Leu Ser Leu Thr₁₂₅ Leu Gly Thr
 Phe Thr₁₃₀ Val Leu Glu Asn Leu₁₃₅ Leu Val Leu Cys Val₁₄₀ Ile Leu His Ser
 Arg₁₄₅ Ser Leu Arg Cys Arg₁₅₀ Pro Ser Tyr His Phe₁₅₅ Ile Gly Ser Leu Ala₁₆₀
 Val Ala Asp Leu Leu₁₆₅ Gly Ser Val Ile Phe₁₇₀ Val Tyr Ser Phe Ile₁₇₅ Asp
 Phe His Val Phe₁₈₀ His Arg Lys Asp Ser₁₈₅ Arg Asn Val Phe Leu₁₉₀ Phe Lys
 Leu Gly Gly₁₉₅ Val Thr Ala Ser Phe₂₀₀ Thr Ala Ser Val Gly₂₀₅ Ser Leu Phe
 Leu Thr₂₁₀ Ala Ile Asp Arg Tyr₂₁₅ Ile Ser Ile His Arg₂₂₀ Pro Leu Ala Tyr
 Lys₂₂₅ Arg Ile Val Thr Arg₂₃₀ Pro Lys Ala Val Val₂₃₅ Ala Phe Cys Leu Met₂₄₀
 Trp Thr Ile Ala Ile₂₄₅ Val Ile Ala Val Leu₂₅₀ Pro Leu Leu Gly Trp₂₅₅ Asn
 Cys Glu Lys Leu₂₆₀ Gln Ser Val Cys Ser₂₆₅ Asp Ile Phe Pro His₂₇₀ Ile Asp
 Glu Thr Tyr₂₇₅ Leu Met Phe Trp Ile₂₈₀ Gly Val Thr Ser Val₂₈₅ Leu Leu Leu
 Phe Ile₂₉₀ Val Tyr Ala Tyr Met₂₉₅ Tyr Ile Leu Trp Lys₃₀₀ Ala His Ser His
 Ala Val Arg Met Ile Gln₃₁₀ Arg Gly Thr Gln Lys₃₁₅ Ser Ile Ile Ile His₃₂₀
 Thr Ser Glu Asp Gly₃₂₅ Lys Val Gln Val Thr₃₃₀ Arg Pro Asp Gln Ala₃₃₅ Arg
 Met Asp Ile Arg₃₄₀ Leu Ala Lys Thr Leu₃₄₅ Val Leu Ile Leu Val₃₅₀ Val Leu

Ile Ile Cys Trp Gly Pro Leu Leu Ala Ile Met Val Tyr Asp Val Phe
355 360 365 544

Gly Lys Met Asn Lys Leu Ile Lys Thr Val Phe Ala Phe Cys Ser Met
370 375 380

Leu Cys Leu Leu Asn Ser Thr Val Asn Pro Ile Ile Tyr Ala Leu Arg
385 390 395 400

Ser Lys Asp Leu Arg His Ala Phe Arg Ser Met Phe Pro Ser Cys Glu
405 410 415

Gly Thr Ala Gln Pro Leu Asp Asn Ser Met Gly Asp Ser Asp Cys Leu
420 425 430

His Lys His Ala Asn Asn Ala Ala Ser Val His Arg Ala Ala Glu Ser
435 440 445

Cys Ile Lys Ser Thr Val Lys Ile Ala Lys Val Thr Met Ser Val Ser
450 455 460

Thr Asp Thr Ser Ala Glu Ala Leu
465 470

<210> 231
<211> 374
<212> PRT
<213> Homo sapiens
<400> 231

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

Gly Glu Glu Val Thr Thr Phe Phe Asp Tyr Asp Tyr Gly Ala Pro Cys
20 25 30

His Lys Phe Asp Val Lys Gln Ile Gly Ala Gln Leu Leu Pro Pro Leu
35 40 45

Tyr Ser Leu Val Phe Ile Phe Gly Phe Val Gly Asn Met Leu Val Val
50 55 60

Leu Ile Leu Ile Asn Cys Lys Lys Leu Lys Cys Leu Thr Asp Ile Tyr
65 70 75 80

Leu Leu Asn Leu Ala Ile Ser Asp Leu Leu Phe Leu Ile Thr Leu Pro
85 90 95

Leu Trp Ala His Ser Ala Ala Asn Glu Trp Val Phe Gly Asn Ala Met
100 105 110

Cys Lys Leu Phe Thr Gly Leu Tyr His Ile Gly Tyr Phe Gly Gly Ile
115 120 125

Phe Phe Ile Ile Leu Leu Thr Ile Asp Arg Tyr Leu Ala Ile Val His
 130 135 140
 Ala Val Phe Ala Leu Lys Ala Arg Thr Val Thr Phe Gly Val Val Thr
 145 150 155 160
 Ser Val Ile Thr Trp Leu Val Ala Val Phe Ala Ser Val Pro Gly Ile
 165 170 175
 Ile Phe Thr Lys Cys Gln Lys Glu Asp Ser Val Tyr Val Cys Gly Pro
 180 185 190
 Tyr Phe Pro Arg Gly Trp Asn Asn Phe His Thr Ile Met Arg Asn Ile
 195 200 205
 Leu Gly Leu Val Leu Pro Leu Leu Ile Met Val Ile Cys Tyr Ser Gly
 210 215 220
 Ile Leu Lys Thr Leu Leu Arg Cys Arg Asn Glu Lys Lys Arg His Arg
 225 230 235 240
 Ala Val Arg Val Ile Phe Thr Ile Met Ile Val Tyr Phe Leu Phe Trp
 245 250 255
 Thr Pro Tyr Asn Ile Val Ile Leu Leu Asn Thr Phe Gln Glu Phe Phe
 260 265 270
 Gly Leu Ser Asn Cys Glu Ser Thr Ser Gln Leu Asp Gln Ala Thr Gln
 275 280 285
 Val Thr Glu Thr Leu Gly Met Thr His Cys Cys Ile Asn Pro Ile Ile
 290 295 300
 Tyr Ala Phe Val Gly Glu Lys Phe Arg Ser Leu Phe His Ile Ala Leu
 305 310 315 320
 Gly Cys Arg Ile Ala Pro Leu Gln Lys Pro Val Cys Gly Gly Pro Gly
 325 330 335
 Val Arg Pro Gly Lys Asn Val Lys Val Thr Thr Gln Gly Leu Leu Asp
 340 345 350
 Gly Arg Gly Lys Gly Lys Ser Ile Gly Arg Ala Pro Glu Ala Ser Leu
 355 360 365
 Gln Asp Lys Glu Gly Ala
 370

<210> 232
 <211> 29
 <212> PRT

<213> Artificial Sequence

<220>

<223> derived from Kir6.2

<400> 232

Trp Leu Ile Ala Phe Ala His Gly Asp Leu Ala Pro Gly Glu Gly Thr
1 5 10 15

Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser Ser
20 25

<210> 233

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> derived from Kir6.2

<400> 233

Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu Lys
1 5 10 15

Gly Ile Thr Asp Leu Ala Pro Gly Glu Gly Thr Asn Val Pro Cys Val
20 25 30

Thr Ser Ile His Ser Phe Ser Ser
35 40

<210> 234

<211> 49

<212> PRT

<213> Artificial Sequence

<220>

<223> derived from Kir6.2

<400> 234

Trp Leu Ile Ala Phe Ala His Gly Asp Leu Tyr Ala Tyr Met Glu Lys
1 5 10 15

Gly Ile Thr Asp Leu Ala Pro Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
20 25 30

Gly Glu Gly Thr Asn Val Pro Cys Val Thr Ser Ile His Ser Phe Ser
35 40 45

Ser