

SEQUENCE LISTING

<110> Universitaet Zu Koeln et al.
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 <151> 2007-10-02
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tttaaatcc agcagtttgc tcttgagaca tggtaatctc ttaatgtaac tactaaagga 6557
gaggtagatt gaaaagatct tgtatataca taattatgtc agatgggttca agatatcaaa 6617
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<210> 4
<211> 609
<212> PRT
<213> Homo sapiens

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<400> 4
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Met Glu Gly Pro Ser Leu Arg Gly Pro Ala Leu Arg Leu Ala Gly Leu
1           5           10           15

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Pro Thr Gln Gln Asp Cys Asn Ile Gln Glu Lys Ile Asp Leu Glu Ile
          20           25           30

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

Phe Ala Gly Phe Leu Asn Gln Gln Gln Met Val Glu Gly Leu Ile Ser
 290 295 300

Trp Arg Arg Leu Tyr Cys Val Leu Arg Gly Gly Lys Leu Tyr Cys Phe
 305 310 315 320

Tyr Ser Pro Glu Glu Ile Glu Ala Lys Val Glu Pro Ala Leu Val Val
 325 330 335

Pro Ile Asn Lys Glu Thr Arg Ile Arg Ala Met Asp Lys Asp Ala Lys
 340 345 350

Lys Arg Ile His Asn Phe Ser Val Ile Asn Pro Val Pro Gly Gln Ala
 355 360 365

Ile Thr Gln Ile Phe Ala Val Asp Asn Arg Glu Asp Leu Gln Lys Trp
 370 375 380

Met Glu Ala Phe Trp Gln His Phe Phe Asp Leu Ser Gln Trp Lys His
 385 390 395 400

Cys Cys Glu Glu Leu Met Lys Ile Glu Ile Met Ser Pro Arg Lys Pro
 405 410 415

Pro Leu Phe Leu Thr Lys Glu Ala Thr Ser Val Tyr His Asp Met Ser
 420 425 430

Ile Asp Ser Pro Met Lys Leu Glu Ser Leu Thr Asp Ile Ile Gln Lys
 435 440 445

Lys Ile Glu Glu Thr Asn Gly Gln Phe Leu Ile Gly Gln His Glu Glu
 450 455 460

Ser Leu Pro Pro Pro Trp Ala Thr Leu Phe Asp Gly Asn His Gln Met
 465 470 475 480

Val Ile Gln Lys Lys Val Leu Tyr Pro Ala Ser Glu Pro Leu His Asp
 485 490 495

Glu Lys Gly Lys Lys Arg Gln Ala Pro Leu Pro Pro Ser Asp Lys Leu
 500 505 510

Pro Phe Ser Leu Lys Ser Gln Ser Asn Thr Asp Gln Leu Val Lys Asp
 515 520 525

Asn Trp Gly Lys Thr Ser Val Ser Gln Thr Ser Ser Leu Asp Thr Lys

530		535		540		
Leu Ser Thr Leu Met His His Leu Gln Lys Pro Met Ala Ala Pro Arg						
545		550		555	560	
Lys Leu Leu Pro Ala Arg Arg Asn Arg Leu Ser Asp Gly Glu His Thr						
	565		570		575	
Asp Thr Lys Thr Asn Phe Glu Ala Lys Pro Val Pro Ala Pro Arg Gln						
	580		585		590	
Lys Ser Ile Lys Asp Ile Leu Asp Pro Arg Ser Trp Leu Gln Ala Gln						
	595		600		605	
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				Met Glu Gly Pro Ser Leu		
				1 5		
agg ggt cct gcg ctc cgc ctg gcg ggg ctt ccc acc cag cag gac tgc					163	
Arg Gly Pro Ala Leu Arg Leu Ala Gly Leu Pro Thr Gln Gln Asp Cys						
	10		15	20		
aac att caa gaa aaa ata gac tta gaa att cga atg cga gaa gga ata					211	
Asn Ile Gln Glu Lys Ile Asp Leu Glu Ile Arg Met Arg Glu Gly Ile						
	25		30	35		
tgg aaa ctc ctt tct ctg agc act cag aaa gat caa gtt tta cat gca					259	
Trp Lys Leu Leu Ser Leu Ser Thr Gln Lys Asp Gln Val Leu His Ala						
	40		45	50		
gtt aag aat ctc atg gtg tgc aat gct cga cta atg gcc tat aca tcg					307	
Val Lys Asn Leu Met Val Cys Asn Ala Arg Leu Met Ala Tyr Thr Ser						
	55		60	65	70	
gag cta cag aaa tta gaa gaa cag att gca aat cag act gga aga tgt					355	
Glu Leu Gln Lys Leu Glu Glu Gln Ile Ala Asn Gln Thr Gly Arg Cys						
	75		80	85		
gat gtg aaa ttt gaa agt aaa gaa cga aca gca tgt aaa gga aag att					403	
Asp Val Lys Phe Glu Ser Lys Glu Arg Thr Ala Cys Lys Gly Lys Ile						
	90		95	100		

gcc ata tca gat att cga ata cca cta atg tgg aaa gac tct gat cac	451
Ala Ile Ser Asp Ile Arg Ile Pro Leu Met Trp Lys Asp Ser Asp His	
105 110 115	
ttc agc aat aaa gaa cga tca cga cgc tat gcc att ttt tgt tta ttc	499
Phe Ser Asn Lys Glu Arg Ser Arg Arg Tyr Ala Ile Phe Cys Leu Phe	
120 125 130	
aaa atg gga gct aat gtg ttt gat act gat gtg gtg aat gtg gat aaa	547
Lys Met Gly Ala Asn Val Phe Asp Thr Asp Val Val Asn Val Asp Lys	
135 140 145 150	
aca atc aca gat ata tgt ttt gaa aat gta acc ata ttg taa	589
Thr Ile Thr Asp Ile Cys Phe Glu Asn Val Thr Ile Leu	
155 160	
gtattttttta atcttcagag aataaaaata attttaaatt cttctttttt aaaagaaagt	649
tcttattatt gggtctttgg attcatttta tgtttaaatg tttaagtgat ctttaaagt	709
ttaatatgat tttaaaaatt attttggttca gaagaagtcc atttctctat ctgcagtttt	769
ctgatgtgaa ataaaaatgg aaatcttgta attactatta gcagtaaata ttgacttat	829
tagatatgac ccattttttaa attgttaata aatatagttc agttattaac aaagctatgc	889
atacaacaga atatcctgta atgttatttg atatagagag aatttaagca taaaacagga	949
tttttatctc atgtaggata tttggttgca gaaatactaa aatagtatag caactttatt	1009
tacaagatag tcctgaagta catgctatat aggaagagca ctttgaaatt ttgggggtgtt	1069
ctttttctta tgggtgcactt ctttcatgta cttcaaagca ataaaaaaaa atgggtgatc	1129
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agaacaagaa ggaactcctt gggtagccat agaaatcatt tttaactaac atagtttttc	1249
ctgccctcct tcaaaggttc tatgtgccta aatcagtgtg ggatttgtat tttagacttt	1309
taaagacacg atcttttagat ctaaagtgtta atagctacta actattaata taaaaatcca	1369
tgtgcatggg ttttgccatt ttcagctatg gagctagaca ggtgagattt tagaggccta	1429
gttttgccac tcacataaca ttaaaaaaaa ctataacaaa ccatattttg tagcttctgg	1489
tccagtgtct catagtaata gtatagcctg gaaaaataaa atgcattgtt ctgagttata	1549
agtagtaatt caggccttct tacaagctgt attgaaccaa aggaatttat ttaggatcca	1609
aaacatatcc ccaaatgctt atataattga ggctaaaaaaaa attacttttt tcttggttat	1669
ctgaatacat ttatttccat tatcaactat tgctagttaa cttttttttc tgccaaaatt	1729
accagttgat gggccctttt cttcacatca ttttgctatt gtttgttttg atcatggaga	1789
caaaaatcag actttttttt ccagggaag aacaatagaa gttactgagg aagacaacac	1849
atgatttata attttttgag aattctgtaa atatttttaa ttgtactaaa aataactgct	1909
gacaaatgtt ctacatgttg aaaaatgtgc tttttgttat gatgattgtt tttaataagt	1969

attcaatatt tatgaatctc tggtttttct ctaaattattg acatttggtta gtcattacca 2029
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<210> 6
 <211> 163
 <212> PRT
 <213> Homo sapiens

<400> 6

Met Glu Gly Pro Ser Leu Arg Gly Pro Ala Leu Arg Leu Ala Gly Leu
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Pro Thr Gln Gln Asp Cys Asn Ile Gln Glu Lys Ile Asp Leu Glu Ile
 20 25 30

Arg Met Arg Glu Gly Ile Trp Lys Leu Leu Ser Leu Ser Thr Gln Lys
 35 40 45

Asp Gln Val Leu His Ala Val Lys Asn Leu Met Val Cys Asn Ala Arg
 50 55 60

Leu Met Ala Tyr Thr Ser Glu Leu Gln Lys Leu Glu Glu Gln Ile Ala
 65 70 75 80

Asn Gln Thr Gly Arg Cys Asp Val Lys Phe Glu Ser Lys Glu Arg Thr
 85 90 95

Ala Cys Lys Gly Lys Ile Ala Ile Ser Asp Ile Arg Ile Pro Leu Met
 100 105 110

Trp Lys Asp Ser Asp His Phe Ser Asn Lys Glu Arg Ser Arg Arg Tyr
 115 120 125

Ala Ile Phe Cys Leu Phe Lys Met Gly Ala Asn Val Phe Asp Thr Asp
 130 135 140

Val Val Asn Val Asp Lys Thr Ile Thr Asp Ile Cys Phe Glu Asn Val
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Thr Ile Leu

<210> 7
 <211> 2592
 <212> DNA
 <213> Homo sapiens

<220>

<221> CDS

<222> (10)..(810)

<400> 7

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      Met His Val Asn Gly Lys Val Ala Leu Val Thr Gly Ala Ala
        1              5              10

cag ggc ata ggc aga gcc ttt gca gag gcg ctg ctg ctt aag ggc gcc      99
Gln Gly Ile Gly Arg Ala Phe Ala Glu Ala Leu Leu Leu Lys Gly Ala
15              20              25              30

aag gta gcg ctg gtg gat tgg aat ctt gaa gca ggt gta cag tgt aaa      147
Lys Val Ala Leu Val Asp Trp Asn Leu Glu Ala Gly Val Gln Cys Lys
              35              40              45

gct gcc ctg gat gag cag ttt gaa cct cag aag act ctg ttc atc cag      195
Ala Ala Leu Asp Glu Gln Phe Glu Pro Gln Lys Thr Leu Phe Ile Gln
              50              55              60

tgc gat gtg gct gac cag caa caa ctg aga gac act ttt aga aaa gtt      243
Cys Asp Val Ala Asp Gln Gln Leu Arg Asp Thr Phe Arg Lys Val
              65              70              75

gta gac cac ttt gga aga ctg gac att ttg gtc aat aat gct gga gtg      291
Val Asp His Phe Gly Arg Leu Asp Ile Leu Val Asn Asn Ala Gly Val
              80              85              90

aat aat gag aaa aac tgg gaa aaa act ctg caa att aat ttg gtt tct      339
Asn Asn Glu Lys Asn Trp Glu Lys Thr Leu Gln Ile Asn Leu Val Ser
95              100              105              110

gtt atc agt gga acc tat ctt ggt ttg gat tac atg agt aag caa aat      387
Val Ile Ser Gly Thr Tyr Leu Gly Leu Asp Tyr Met Ser Lys Gln Asn
              115              120              125

gga ggt gaa ggc ggc atc att atc aat atg tca tct tta gca gga ctc      435
Gly Gly Glu Gly Gly Ile Ile Ile Asn Met Ser Ser Leu Ala Gly Leu
              130              135              140

atg ccc gtt gca cag cag ccg gtt tat tgt gct tca aag cat ggc ata      483
Met Pro Val Ala Gln Gln Pro Val Tyr Cys Ala Ser Lys His Gly Ile
              145              150              155

gtt gga ttc aca cgc tca gca gcg ttg gct gct aat ctt atg aac agt      531
Val Gly Phe Thr Arg Ser Ala Ala Leu Ala Ala Asn Leu Met Asn Ser
              160              165              170

ggt gtg aga ctg aat gcc att tgt cca ggc ttt gtt aac aca gcc atc      579
Gly Val Arg Leu Asn Ala Ile Cys Pro Gly Phe Val Asn Thr Ala Ile
175              180              185              190

ctt gaa tca att gaa aaa gaa gaa aac atg gga caa tat ata gaa tat      627
Leu Glu Ser Ile Glu Lys Glu Glu Asn Met Gly Gln Tyr Ile Glu Tyr
              195              200              205

aag gat cat atc aag gat atg att aaa tac tat gga att ttg gac cca      675
Lys Asp His Ile Lys Asp Met Ile Lys Tyr Tyr Gly Ile Leu Asp Pro
              210              215              220

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cca ttg att gcc aat gga ttg ata aca ctc att gaa gat gat gct tta	723
Pro Leu Ile Ala Asn Gly Leu Ile Thr Leu Ile Glu Asp Asp Ala Leu	
225 230 235	
aat ggt gct att atg aag atc aca act tct aag gga att cat ttt caa	771
Asn Gly Ala Ile Met Lys Ile Thr Thr Ser Lys Gly Ile His Phe Gln	
240 245 250	
gac tat gat aca act cca ttt caa gca aaa acc caa tga acagcttatg	820
Asp Tyr Asp Thr Thr Pro Phe Gln Ala Lys Thr Gln	
255 260 265	
tgtagccat agctgaaaat aagcacaaat agcttatatt cagatcctat cttcatttga	880
atatagcttt taaatgaaat gttacagttt gaagttttcc ttcattgcact tgggtgataaa	940
cgtttttctaa attttttagtt aagtatatgg ataaaaagtt atgaactatt aaaaatgtga	1000
tgtggaccaa aggctaggtt gtaatcttga tagtctaaaa aatgatcaaa acaaatgatt	1060
ttcaaggaat attcaatatt ctgcctttca gaaagtgtat ttatatctgt gcttcataaa	1120
tattaatgtt cttcagaaca tcatttttaa ggagatactt gaattgttat ttaaatcaaa	1180
ccagatgtaa aacactcaca tacaagttca tacttttaaaa gaggaaagct acttaacaat	1240
gacaaatatt tcacaataat aatttttact tatataccat ctttcaactg aacatttcag	1300
ttcttccaag agcttcttag agtagtatat tttgggggca gtcaaggaat aaactacagt	1360
gtaaacatat ccagatgaa aactgctgta tggaaaaatg acagaaagta actgattgac	1420
actgttgatt cacagttcag cctcctatct gggaaagaca tttcttttct ctgctcactt	1480
taagaacttt taccgactcc aaaaatctca ggaattaaac ttttaacagt tacagcaata	1540
aagaatagtt agtactccaa aaatattata tttaagatgc tcaacaagaa aaaaatgcaa	1600
atgtaatatt tttttcaaat tacttcttta ttgacttgtc caaatttcaa aagtgcctac	1660
ccttcaataa aacttttttta ttctgatctc cataaattac ttagtcttct atgtatagct	1720
atcaaggaaa taaaaccaat tttgccacag ccacaactgt aaatgttttt gtacccatgc	1780
tgaaactcat aacaacacag acataaaaaat agctgtgagg ttttgctttt tttgttgtca	1840
gctatcttaa gaatcattaa atacacctgc tttgggtaaa actcttttgca agcagtaatt	1900
aacactagta acagtgaaag cacaagatth ccaaatcagt cgtttttctca aaaaaatata	1960
gtataagtga ctcatcctgt ctgctaactc cagacctccc agcttgaagc caaatctttc	2020
catgtgagat tgatatggat ttcttagaag tactggaatg ttgtcatatc ttgccctatt	2080
ttaattctgc tatagaaaac aattgccttc acttttaagg agtaatttga atattaataa	2140
ctctggtcta gatthttcata taatgtatta aagacaaagt agtgaacatc aatgaacatc	2200
tgatagagat aaactgtaat caggcataag cttgttttgta tgttctggca gtgactaatc	2260
agtaaatgat gtcggtttgc ccagtatcac ttatcttctg tatttttctc ctgtcgtgta	2320
aatagtataa ctttttcatt tatggacaat tttttggact agtagccttc aatatacatt	2380

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ctgctttgaa ttaatttttt caaatcaata aattatgtag acattttaaaa tcaaatatca 2440
agtagaattg aaaaatgtga gttacataag ttaaaaactt acttttaaadc ttaccttcta 2500
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<210> 8
<211> 266
<212> PRT
<213> Homo sapiens

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<400> 8

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Met His Val Asn Gly Lys Val Ala Leu Val Thr Gly Ala Ala Gln Gly
1          5          10          15

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Ile Gly Arg Ala Phe Ala Glu Ala Leu Leu Leu Lys Gly Ala Lys Val
          20          25          30

```

```

Ala Leu Val Asp Trp Asn Leu Glu Ala Gly Val Gln Cys Lys Ala Ala
          35          40          45

```

```

Leu Asp Glu Gln Phe Glu Pro Gln Lys Thr Leu Phe Ile Gln Cys Asp
          50          55          60

```

```

Val Ala Asp Gln Gln Gln Leu Arg Asp Thr Phe Arg Lys Val Val Asp
65          70          75          80

```

```

His Phe Gly Arg Leu Asp Ile Leu Val Asn Asn Ala Gly Val Asn Asn
          85          90          95

```

```

Glu Lys Asn Trp Glu Lys Thr Leu Gln Ile Asn Leu Val Ser Val Ile
          100          105          110

```

```

Ser Gly Thr Tyr Leu Gly Leu Asp Tyr Met Ser Lys Gln Asn Gly Gly
          115          120          125

```

```

Glu Gly Gly Ile Ile Ile Asn Met Ser Ser Leu Ala Gly Leu Met Pro
          130          135          140

```

```

Val Ala Gln Gln Pro Val Tyr Cys Ala Ser Lys His Gly Ile Val Gly
145          150          155          160

```

```

Phe Thr Arg Ser Ala Ala Leu Ala Ala Asn Leu Met Asn Ser Gly Val
          165          170          175

```

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Arg Leu Asn Ala Ile Cys Pro Gly Phe Val Asn Thr Ala Ile Leu Glu

```

180	185	190	
Ser Ile Glu Lys Glu Glu Asn Met Gly Gln Tyr Ile Glu Tyr Lys Asp			
195	200	205	
His Ile Lys Asp Met Ile Lys Tyr Tyr Gly Ile Leu Asp Pro Pro Leu			
210	215	220	
Ile Ala Asn Gly Leu Ile Thr Leu Ile Glu Asp Asp Ala Leu Asn Gly			
225	230	235	240
Ala Ile Met Lys Ile Thr Thr Ser Lys Gly Ile His Phe Gln Asp Tyr			
245	250	255	
Asp Thr Thr Pro Phe Gln Ala Lys Thr Gln			
260	265		
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attgctgtgg	attcccaggg	cctattccac	tagaagcaag atg gct gaa ctc aat 175
			Met Ala Glu Leu Asn 5
act cat gtg aat gtc aag gaa aag atc tat gca gtt aga tca gtt gtt 223			
Thr His Val Asn Val Lys Glu Lys Ile Tyr Ala Val Arg Ser Val Val			
10	15	20	
ccc aac aaa agc aat aat gaa ata gtc ctg gtg ctc caa cag ttt gat 271			
Pro Asn Lys Ser Asn Asn Glu Ile Val Leu Val Leu Gln Gln Phe Asp			
25	30	35	
ttt aat gtg gat aaa gcc gtg caa gcc ttt gtg gat ggc agt gca att 319			
Phe Asn Val Asp Lys Ala Val Gln Ala Phe Val Asp Gly Ser Ala Ile			
40	45	50	
caa gtt cta aaa gaa tgg aat atg aca gga aaa aag aag aac aat aaa 367			
Gln Val Leu Lys Glu Trp Asn Met Thr Gly Lys Lys Lys Asn Asn Lys			
55	60	65	
aga aaa aga agc aag tcc aag cag cat caa ggc aac aaa gat gct aaa 415			
Arg Lys Arg Ser Lys Ser Lys Gln His Gln Gly Asn Lys Asp Ala Lys			
70	75	80	85
gac aag gtg gag agg cct gag gca ggg ccc ctg cag ccg cag cca cca 463			

Asp	Lys	Val	Glu	Arg	Pro	Glu	Ala	Gly	Pro	Leu	Gln	Pro	Gln	Pro	Pro	
				90					95					100		
cag	att	caa	aac	ggc	ccc	atg	aat	ggc	tgc	gag	aag	gac	agc	tcg	tcc	511
Gln	Ile	Gln	Asn	Gly	Pro	Met	Asn	Gly	Cys	Glu	Lys	Asp	Ser	Ser	Ser	
			105					110					115			
aca	gat	tct	gct	aac	gaa	aaa	cca	gcc	ctt	atc	cct	cgt	gag	aaa	aag	559
Thr	Asp	Ser	Ala	Asn	Glu	Lys	Pro	Ala	Leu	Ile	Pro	Arg	Glu	Lys	Lys	
			120				125					130				
atc	tcg	ata	ctt	gag	gaa	cct	tca	aag	gca	ctt	cgt	ggg	gtc	aca	gaa	607
Ile	Ser	Ile	Leu	Glu	Glu	Pro	Ser	Lys	Ala	Leu	Arg	Gly	Val	Thr	Glu	
	135					140					145					
ggc	aac	aga	cta	ctg	caa	cag	aaa	cta	tcc	tta	gat	ggg	aac	ccc	aaa	655
Gly	Asn	Arg	Leu	Leu	Gln	Gln	Lys	Leu	Ser	Leu	Asp	Gly	Asn	Pro	Lys	
150					155				160						165	
cct	ata	cat	gga	aca	aca	gag	agg	tca	gat	ggc	cta	cag	tgg	tca	gct	703
Pro	Ile	His	Gly	Thr	Thr	Glu	Arg	Ser	Asp	Gly	Leu	Gln	Trp	Ser	Ala	
			170						175					180		
gag	cag	cct	tgt	aac	cca	agc	aag	cct	aag	gca	aaa	aca	tct	cct	gtt	751
Glu	Gln	Pro	Cys	Asn	Pro	Ser	Lys	Pro	Lys	Ala	Lys	Thr	Ser	Pro	Val	
			185					190					195			
aag	tcc	aat	acc	cct	gca	gct	cat	ctt	gaa	ata	aag	cca	gat	gag	ttg	799
Lys	Ser	Asn	Thr	Pro	Ala	Ala	His	Leu	Glu	Ile	Lys	Pro	Asp	Glu	Leu	
		200					205					210				
gca	aag	aaa	aga	ggc	cca	aat	att	gag	aaa	tca	gtg	aag	gat	ttg	caa	847
Ala	Lys	Lys	Arg	Gly	Pro	Asn	Ile	Glu	Lys	Ser	Val	Lys	Asp	Leu	Gln	
	215					220					225					
cgc	tgc	acc	gtt	tct	cta	act	aga	tat	cgc	gtc	atg	att	aag	gaa	gaa	895
Arg	Cys	Thr	Val	Ser	Leu	Thr	Arg	Tyr	Arg	Val	Met	Ile	Lys	Glu	Glu	
230					235					240					245	
gtg	gat	agt	tcc	gtg	aag	aag	atc	aaa	gct	gcc	ttt	gct	gaa	tta	cac	943
Val	Asp	Ser	Ser	Val	Lys	Lys	Ile	Lys	Ala	Ala	Phe	Ala	Glu	Leu	His	
				250					255					260		
aac	tgc	atc	att	gac	aaa	gaa	gtt	tca	tta	atg	gca	gaa	atg	gat	aaa	991
Asn	Cys	Ile	Ile	Asp	Lys	Glu	Val	Ser	Leu	Met	Ala	Glu	Met	Asp	Lys	
			265					270					275			
gtt	aaa	gaa	gaa	gcc	atg	gaa	atc	ctg	act	gct	cgt	cag	aag	aaa	gca	1039
Val	Lys	Glu	Glu	Ala	Met	Glu	Ile	Leu	Thr	Ala	Arg	Gln	Lys	Lys	Ala	
		280					285					290				
gaa	gaa	cta	aag	aga	ctc	act	aac	ctt	gcc	agt	cag	atg	gca	gag	atg	1087
Glu	Glu	Leu	Lys	Arg	Leu	Thr	Asn	Leu	Ala	Ser	Gln	Met	Ala	Glu	Met	
		295				300					305					
cag	ctg	gcc	gaa	ctc	agg	gca	gaa	att	aag	cac	ttt	gtc	agc	gag	cgt	1135
Gln	Leu	Ala	Glu	Leu	Arg	Ala	Glu	Ile	Lys	His	Phe	Val	Ser	Glu	Arg	
310					315					320					325	
aaa	tat	gac	gag	gag	ctc	ggg	aaa	gct	gcc	cgg	ttt	tcc	tgt	gac	atc	1183
Lys	Tyr	Asp	Glu	Glu	Leu	Gly	Lys	Ala	Ala	Arg	Phe	Ser	Cys	Asp	Ile	
				330					335					340		

gaa cag ctg aag gcc caa atc atg ctc tgc gga gaa att aca cat cca Glu Gln Leu Lys Ala Gln Ile Met Leu Cys Gly Glu Ile Thr His Pro 345 350 355	1231
aag aac aac tat tcc tca aga act ccc tgc agc tcc ctg ctg cct ctg Lys Asn Asn Tyr Ser Ser Arg Thr Pro Cys Ser Ser Leu Leu Pro Leu 360 365 370	1279
ctg aat gcg cac gca gca acc tct ggg aaa cag agt aac ttt tcc cga Leu Asn Ala His Ala Ala Thr Ser Gly Lys Gln Ser Asn Phe Ser Arg 375 380 385	1327
aaa tca tcc act cac aat aag ccc tct gaa ggc aaa gcg gca aac ccc Lys Ser Ser Thr His Asn Lys Pro Ser Glu Gly Lys Ala Ala Asn Pro 390 395 400 405	1375
aaa atg gtg agc agt ctc ccc agc acc gcc gac ccc tct cac cag acc Lys Met Val Ser Ser Leu Pro Ser Thr Ala Asp Pro Ser His Gln Thr 410 415 420	1423
atg ccg gcc aac aag cag aat gga tct tct aac caa aga cgg aga ttt Met Pro Ala Asn Lys Gln Asn Gly Ser Ser Asn Gln Arg Arg Arg Phe 425 430 435	1471
aat cca cag tat cat aac aac agg cta aat ggg cct gcc aag tcg cag Asn Pro Gln Tyr His Asn Asn Arg Leu Asn Gly Pro Ala Lys Ser Gln 440 445 450	1519
ggc agt ggg aat gaa gcc gag cca ctg gga aag ggc aac agc cgc cac Gly Ser Gly Asn Glu Ala Glu Pro Leu Gly Lys Gly Asn Ser Arg His 455 460 465	1567
gaa cac aga aga cag ccg cac aac ggc ttc cgg ccc aaa aac aaa ggc Glu His Arg Arg Gln Pro His Asn Gly Phe Arg Pro Lys Asn Lys Gly 470 475 480 485	1615
ggt gcc aaa aat caa gag gct tcc ttg ggg atg aag acc ccc gag gcc Gly Ala Lys Asn Gln Glu Ala Ser Leu Gly Met Lys Thr Pro Glu Ala 490 495 500	1663
ccg gcc cat tct gaa aag ccc cgg cga agg cag cac gct gca gac acc Pro Ala His Ser Glu Lys Pro Arg Arg Arg Gln His Ala Ala Asp Thr 505 510 515	1711
tcg gag gcc agg ccc ttc cgg ggt agt gtc ggt agg gtt tca cag tgc Ser Glu Ala Arg Pro Phe Arg Gly Ser Val Gly Arg Val Ser Gln Cys 520 525 530	1759
aat ctc tgc ccc acg aga ata gaa gtt tcc aca gat gca gca gtt ctc Asn Leu Cys Pro Thr Arg Ile Glu Val Ser Thr Asp Ala Ala Val Leu 535 540 545	1807
tca gtc ccg gct gtg acg ttg gtg gcc tga gctaggagga aaaagagcag Ser Val Pro Ala Val Thr Leu Val Ala 550 555	1857
ttttcactca gttttggttc cctgcccagag gtgctgaccc aattcgctgc caaaagagtg	1917
tcaatcagaa tatacaaadc ccgtatggtt gtgtcatcct ctcttaatca tttttactaa	1977
ttctaataat cagctctagc ttgcttcata attttcatgg ctttgcttga tctgttgatg	2037
ctttctctca tcaagacttt gcagcatttt agccaggcag tatttactca ttattaggaa	2097


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aatcaagatg tggctgaaga tcagaggctc agttagcaac ctgtgttgta gcagtgatgt 2157
cagtccatag attgtcttta gagagttaat gttacaaaaa agaattctta ataatcagac 2217
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aaaaaaaaaa aaaaaaaaaa 2355

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<210> 10
<211> 558
<212> PRT
<213> Homo sapiens

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<400> 10

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Met Ala Glu Leu Asn Thr His Val Asn Val Lys Glu Lys Ile Tyr Ala
1          5          10          15

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Val Arg Ser Val Val Pro Asn Lys Ser Asn Asn Glu Ile Val Leu Val
          20          25          30

```

```

Leu Gln Gln Phe Asp Phe Asn Val Asp Lys Ala Val Gln Ala Phe Val
          35          40          45

```

```

Asp Gly Ser Ala Ile Gln Val Leu Lys Glu Trp Asn Met Thr Gly Lys
50          55          60

```

```

Lys Lys Asn Asn Lys Arg Lys Arg Ser Lys Ser Lys Gln His Gln Gly
65          70          75          80

```

```

Asn Lys Asp Ala Lys Asp Lys Val Glu Arg Pro Glu Ala Gly Pro Leu
          85          90          95

```

```

Gln Pro Gln Pro Pro Gln Ile Gln Asn Gly Pro Met Asn Gly Cys Glu
          100          105          110

```

```

Lys Asp Ser Ser Ser Thr Asp Ser Ala Asn Glu Lys Pro Ala Leu Ile
          115          120          125

```

```

Pro Arg Glu Lys Lys Ile Ser Ile Leu Glu Glu Pro Ser Lys Ala Leu
          130          135          140

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Arg Gly Val Thr Glu Gly Asn Arg Leu Leu Gln Gln Lys Leu Ser Leu
145          150          155          160

```

```

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

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Leu Gln Trp Ser Ala Glu Gln Pro Cys Asn Pro Ser Lys Pro Lys Ala
 180 185 190

Lys Thr Ser Pro Val Lys Ser Asn Thr Pro Ala Ala His Leu Glu Ile
 195 200 205

Lys Pro Asp Glu Leu Ala Lys Lys Arg Gly Pro Asn Ile Glu Lys Ser
 210 215 220

Val Lys Asp Leu Gln Arg Cys Thr Val Ser Leu Thr Arg Tyr Arg Val
 225 230 235 240

Met Ile Lys Glu Glu Val Asp Ser Ser Val Lys Lys Ile Lys Ala Ala
 245 250 255

Phe Ala Glu Leu His Asn Cys Ile Ile Asp Lys Glu Val Ser Leu Met
 260 265 270

Ala Glu Met Asp Lys Val Lys Glu Glu Ala Met Glu Ile Leu Thr Ala
 275 280 285

Arg Gln Lys Lys Ala Glu Glu Leu Lys Arg Leu Thr Asn Leu Ala Ser
 290 295 300

Gln Met Ala Glu Met Gln Leu Ala Glu Leu Arg Ala Glu Ile Lys His
 305 310 315 320

Phe Val Ser Glu Arg Lys Tyr Asp Glu Glu Leu Gly Lys Ala Ala Arg
 325 330 335

Phe Ser Cys Asp Ile Glu Gln Leu Lys Ala Gln Ile Met Leu Cys Gly
 340 345 350

Glu Ile Thr His Pro Lys Asn Asn Tyr Ser Ser Arg Thr Pro Cys Ser
 355 360 365

Ser Leu Leu Pro Leu Leu Asn Ala His Ala Ala Thr Ser Gly Lys Gln
 370 375 380

Ser Asn Phe Ser Arg Lys Ser Ser Thr His Asn Lys Pro Ser Glu Gly
 385 390 395 400

Lys Ala Ala Asn Pro Lys Met Val Ser Ser Leu Pro Ser Thr Ala Asp
 405 410 415

Pro Ser His Gln Thr Met Pro Ala Asn Lys Gln Asn Gly Ser Ser Asn
 420 425 430

Gln Arg Arg Arg Phe Asn Pro Gln Tyr His Asn Asn Arg Leu Asn Gly
 435 440 445

Pro Ala Lys Ser Gln Gly Ser Gly Asn Glu Ala Glu Pro Leu Gly Lys
 450 455 460

Gly Asn Ser Arg His Glu His Arg Arg Gln Pro His Asn Gly Phe Arg
 465 470 475 480

Pro Lys Asn Lys Gly Gly Ala Lys Asn Gln Glu Ala Ser Leu Gly Met
 485 490 495

Lys Thr Pro Glu Ala Pro Ala His Ser Glu Lys Pro Arg Arg Arg Gln
 500 505 510

His Ala Ala Asp Thr Ser Glu Ala Arg Pro Phe Arg Gly Ser Val Gly
 515 520 525

Arg Val Ser Gln Cys Asn Leu Cys Pro Thr Arg Ile Glu Val Ser Thr
 530 535 540

Asp Ala Ala Val Leu Ser Val Pro Ala Val Thr Leu Val Ala
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (293) .. (790)

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 tctagctcag gcttttaggat cagagagcag cagattcaaa tcctgacggt tttggtaaag 180
 tcaattcaat ctctccaaga ctccgtttac ttgatctgcg aagtggggat aatggtatca 240
 cgtcgcaggg ttgtcaggcg gagctggtag gggagctgcc cccagagca gc atg gat 298
 Met Asp
 1
 gcc ccg cga agg gac atg gag ttg ctc agc aac agc ctg gct gcc tac 346
 Ala Pro Arg Arg Asp Met Glu Leu Leu Ser Asn Ser Leu Ala Ala Tyr
 5 10 15
 gcg cac atc cgc gcc aac ccc gag agc ttt ggc ctc tac ttc gtg ctg 394

Ala	His	Ile	Arg	Ala	Asn	Pro	Glu	Ser	Phe	Gly	Leu	Tyr	Phe	Val	Leu		
20						25					30						
ggc	gtc	tgc	ttc	ggc	ctg	ctg	ctc	acc	ctc	tgc	ctg	ctc	gtc	atc	agc		442
Gly	Val	Cys	Phe	Gly	Leu	Leu	Leu	Thr	Leu	Cys	Leu	Leu	Val	Ile	Ser		
35					40					45					50		
atc	tcg	tgg	gcg	ccc	cgc	ccg	cgg	ccc	cgg	ggc	ccg	gct	cag	cgc	cgg		490
Ile	Ser	Trp	Ala	Pro	Arg	Pro	Arg	Pro	Arg	Gly	Pro	Ala	Gln	Arg	Arg		
				55					60					65			
gac	ccc	cgc	agc	agc	acc	ctg	gag	ccc	gag	gac	gac	gac	gag	gac	gag		538
Asp	Pro	Arg	Ser	Ser	Thr	Leu	Glu	Pro	Glu	Asp	Asp	Asp	Glu	Asp	Glu		
			70					75					80				
gag	gac	acg	gtg	act	cgg	ctg	ggc	ccc	gac	gac	acg	ctg	ccg	ggc	ccc		586
Glu	Asp	Thr	Val	Thr	Arg	Leu	Gly	Pro	Asp	Asp	Thr	Leu	Pro	Gly	Pro		
		85					90					95					
gag	ctg	tcc	gca	gag	ccg	gac	ggg	ccc	ctc	aac	gtc	aac	gtc	ttc	acg		634
Glu	Leu	Ser	Ala	Glu	Pro	Asp	Gly	Pro	Leu	Asn	Val	Asn	Val	Phe	Thr		
	100					105					110						
tcg	gcg	gag	gag	ctg	gag	cgg	gcg	cag	cgg	ctg	gag	gag	cgc	gaa	cgg		682
Ser	Ala	Glu	Glu	Leu	Glu	Arg	Ala	Gln	Arg	Leu	Glu	Glu	Arg	Glu	Arg		
115					120					125					130		
atc	ctg	cgg	gag	atc	tgg	cgc	acc	ggg	cag	ccg	gac	ctg	ctg	ggc	aca		730
Ile	Leu	Arg	Glu	Ile	Trp	Arg	Thr	Gly	Gln	Pro	Asp	Leu	Leu	Gly	Thr		
				135					140					145			
ggc	acg	ctg	ggg	ccc	agc	ccc	acg	gcc	acg	ggc	acc	ctg	ggc	cgc	atg		778
Gly	Thr	Leu	Gly	Pro	Ser	Pro	Thr	Ala	Thr	Gly	Thr	Leu	Gly	Arg	Met		
			150					155					160				
cac	tat	tac	tga	tggg	ccctgg	ctccc	gccgc	aagg	cgctcg	gggt	accgga						830
His	Tyr	Tyr															
		165															
cctgt	acatg	agctc	agagc	tacccc	acac	cttcgg	actg	cctcgg	cccc	cacag	ctccc						890
aggtg	ctact	gggcgt	ggac	cgccac	cccc	tgagag	gctc	ccttcccc	cag	tctg	ccaga						950
agacccc	ggg	ggcggg	gagg	gggcag	catg	caggg	tcccc	actcc	ctctc	tgggg	togat						1010
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<210> 12
 <211> 165
 <212> PRT
 <213> Homo sapiens

<400> 12

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Ala	Tyr	Ala	His	Ile	Arg	Ala	Asn	Pro	Glu	Ser	Phe	Gly	Leu	Tyr	Phe		
			20				25						30				

Val Leu Gly Val Cys Phe Gly Leu Leu Leu Thr Leu Cys Leu Leu Val
 35 40 45

Ile Ser Ile Ser Trp Ala Pro Arg Pro Arg Pro Arg Gly Pro Ala Gln
 50 55 60

Arg Arg Asp Pro Arg Ser Ser Thr Leu Glu Pro Glu Asp Asp Asp Glu
 65 70 75 80

Asp Glu Glu Asp Thr Val Thr Arg Leu Gly Pro Asp Asp Thr Leu Pro
 85 90 95

Gly Pro Glu Leu Ser Ala Glu Pro Asp Gly Pro Leu Asn Val Asn Val
 100 105 110

Phe Thr Ser Ala Glu Glu Leu Glu Arg Ala Gln Arg Leu Glu Glu Arg
 115 120 125

Glu Arg Ile Leu Arg Glu Ile Trp Arg Thr Gly Gln Pro Asp Leu Leu
 130 135 140

Gly Thr Gly Thr Leu Gly Pro Ser Pro Thr Ala Thr Gly Thr Leu Gly
 145 150 155 160

Arg Met His Tyr Tyr
 165

<210> 13
 <211> 2213
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1422)..(1799)

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 cccagggcaa tgctgccagg agagggagtg ggttcccccg caggctatcc caccgatggg 180
 gctgagagct taatttgggg ttttatttga attggagaca ttgttccctc ttcgctcctc 240
 taccccataa aattccctac aaatgcaaaa attcgagata gaagaagccg tccctgaaag 300
 taagttctga aggattcctt tcatgcggtg aaggaacaac aacaatattc aacttcacct 360
 tgggtgtgtga gggtcgtcgt gttttaaaac actatccctg tagaaagatt agtgaaatgt 420
 attggaagaa gtagtggaac cgtgaatctt cctgggtctcg cgtttggatc ttctttggag 480

tcctcacctt cttaaatctg atgtttgttt gaaatcaggg ctgaatttcc atatatagga	540
cagaaagaaa gaaccccaat tttttaaaga aagctcccc ccccccgcca cgtttctcct	600
gagcccactt ggtctcccggt tattaggcgg cccagttaag aggcacgat tttcctttca	660
ttctctgacc actcgtctct cctgggccag ccaggctgcc cgcattcttct cctgctcaca	720
gcgctctcta aaccttttaa ttatttagtt gctgtctaac attcaccgga aacctctcca	780
taaacaagga gaaacgaatg cacacgcatt tttgctaaga agcccgggat taagatttaa	840
ggataacaagc tgaaagaaaa aatgaaaaat gcttctccgc gcgtcaatcg aggggtggat	900
gcgccacgca gcgtgagccc agctcacagc cagcgctaag accaaaagct gccatggggtt	960
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ccaggctcttg aaaatgctga cttctgaggc taagaattat ttcaaagaca aaaagaaaag	1080
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ggcgacggcg cggccaccgc ctagagagga gccggggccc ggggcggcgt gcgggtcggc	1320
agcagccggc ttggcctatc cgaaaccca ggctggaag cggctgcttt aggcgtcaag	1380
ttgagcgggg tatgtgtgtc ctcttgaaa aaaggtgaga a atg gag ccg gac ttt	1436
	Met Glu Pro Asp Phe
	1 5
ctc cac tcg gta ggg gtt aag cta cca cac aca ccc cca aac aca tgc	1484
Leu His Ser Val Gly Val Lys Leu Pro His Thr Pro Pro Asn Thr Cys	
	10 15 20
cca cgt gca agt ccc tcc cac ccg ccc tcc cag ggg cga aga gac cct	1532
Pro Arg Ala Ser Pro Ser His Pro Pro Ser Gln Gly Arg Arg Asp Pro	
	25 30 35
gtc cca gtg gaa gtg ggg aaa ccc agt cgg gta cag aaa gca gag gcc	1580
Val Pro Val Glu Val Gly Lys Pro Ser Arg Val Gln Lys Ala Glu Ala	
	40 45 50
atg gcg cag agc gga ggc gcg gct ttc tgg ggc tca gcc cta ggg cta	1628
Met Ala Gln Ser Gly Gly Ala Ala Phe Trp Gly Ser Ala Leu Gly Leu	
	55 60 65
cag acc cag ggc gcg gag atg ctc gcg gcc ggg cca ccc acc aga gcc	1676
Gln Thr Gln Gly Ala Glu Met Leu Ala Ala Gly Pro Pro Thr Arg Ala	
	70 75 80 85
agg caa ccg gcg ctt cca ggc gag ctc cgc ggg gcc gag gtg ccg gga	1724
Arg Gln Pro Ala Leu Pro Gly Glu Leu Arg Gly Ala Glu Val Pro Gly	
	90 95 100
gaa gcg gcc ccg ggc gcc cgc gcg ctg ccc gac ctg ggt aac agg caa	1772
Glu Ala Ala Pro Gly Ala Arg Ala Leu Pro Asp Leu Gly Asn Arg Gln	
	105 110 115

agc gga gcc ccg ggg tcg aag tcc taa agttactaat cccgcggagg 1819
 Ser Gly Ala Pro Gly Ser Lys Ser
 120 125

gggagagagc gtgcctcggg cgcgccgggg cggtcatttg agcgtgttta cttaaagact 1879
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<210> 14
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 <213> Homo sapiens

<400> 14

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

Gly Arg Arg Asp Pro Val Pro Val Glu Val Gly Lys Pro Ser Arg Val
 35 40 45

Gln Lys Ala Glu Ala Met Ala Gln Ser Gly Gly Ala Ala Phe Trp Gly
 50 55 60

Ser Ala Leu Gly Leu Gln Thr Gln Gly Ala Glu Met Leu Ala Ala Gly
 65 70 75 80

Pro Pro Thr Arg Ala Arg Gln Pro Ala Leu Pro Gly Glu Leu Arg Gly
 85 90 95

Ala Glu Val Pro Gly Glu Ala Ala Pro Gly Ala Arg Ala Leu Pro Asp
 100 105 110

Leu Gly Asn Arg Gln Ser Gly Ala Pro Gly Ser Lys Ser
 115 120 125

<210> 15
 <211> 1330
 <212> DNA
 <213> Homo sapiens

<220>

<221> CDS

<222> (48)..(1181)

<400> 15

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gaa gag gac agc act gcc ttg gtg tgt gac aat ggc tct ggg ctc tgt      104
Glu Glu Asp Ser Thr Ala Leu Val Cys Asp Asn Gly Ser Gly Leu Cys
      5                      10                      15

aag gcc ggc ttt gct ggg gac gat gct ccc agg gct gtt ttc cca tcc      152
Lys Ala Gly Phe Ala Gly Asp Asp Ala Pro Arg Ala Val Phe Pro Ser
20                      25                      30                      35

att gtg gga cgt ccc aga cat cag ggg gtg atg gtg gga atg gga caa      200
Ile Val Gly Arg Pro Arg His Gln Gly Val Met Val Gly Met Gly Gln
                        40                      45                      50

aaa gac agc tac gtg ggt gac gaa gca cag agc aaa aga gga atc ctg      248
Lys Asp Ser Tyr Val Gly Asp Glu Ala Gln Ser Lys Arg Gly Ile Leu
                        55                      60                      65

acc ctg aag tac ccg ata gaa cat ggc atc atc acc aac tgg gac gac      296
Thr Leu Lys Tyr Pro Ile Glu His Gly Ile Ile Thr Asn Trp Asp Asp
      70                      75                      80

atg gaa aag atc tgg cac cac tct ttc tac aat gag ctt cgt gtt gcc      344
Met Glu Lys Ile Trp His His Ser Phe Tyr Asn Glu Leu Arg Val Ala
      85                      90                      95

cct gaa gag cat ccc acc ctg ctc acg gag gca ccc ctg aac ccc aag      392
Pro Glu Glu His Pro Thr Leu Leu Thr Glu Ala Pro Leu Asn Pro Lys
100                      105                      110                      115

gcc aac cgg gag aaa atg act caa att atg ttt gag act ttc aat gtc      440
Ala Asn Arg Glu Lys Met Thr Gln Ile Met Phe Glu Thr Phe Asn Val
                        120                      125                      130

cca gcc atg tat gtg gct atc cag gcg gtg ctg tct ctc tat gcc tct      488
Pro Ala Met Tyr Val Ala Ile Gln Ala Val Leu Ser Leu Tyr Ala Ser
                        135                      140                      145

gga cgc aca act ggc atc gtg ctg gac tct gga gat ggt gtc acc cac      536
Gly Arg Thr Thr Gly Ile Val Leu Asp Ser Gly Asp Gly Val Thr His
                        150                      155                      160

aat gtc ccc atc tat gag ggc tat gcc ttg ccc cat gcc atc atg cgt      584
Asn Val Pro Ile Tyr Glu Gly Tyr Ala Leu Pro His Ala Ile Met Arg
                        165                      170                      175

ctg gat ctg gct ggc cga gat ctc act gac tac ctc atg aag atc ctg      632
Leu Asp Leu Ala Gly Arg Asp Leu Thr Asp Tyr Leu Met Lys Ile Leu
180                      185                      190                      195

act gag cgt ggc tat tcc ttc gtt act act gct gag cgt gag att gtc      680
Thr Glu Arg Gly Tyr Ser Phe Val Thr Thr Ala Glu Arg Glu Ile Val
                        200                      205                      210

cgg gac atc aag gag aaa ctg tgt tat gta gct ctg gac ttt gaa aat      728

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Arg	Asp	Ile	Lys	Glu	Lys	Leu	Cys	Tyr	Val	Ala	Leu	Asp	Phe	Glu	Asn		
			215					220					225				
gag	atg	gcc	act	gcc	gca	tcc	tca	tcc	tcc	ctt	gag	aag	agt	tac	gag		776
Glu	Met	Ala	Thr	Ala	Ala	Ser	Ser	Ser	Ser	Leu	Glu	Lys	Ser	Tyr	Glu		
		230					235					240					
ttg	cct	gat	ggg	caa	gtg	atc	acc	atc	gga	aat	gaa	cgt	ttc	cgc	tgc		824
Leu	Pro	Asp	Gly	Gln	Val	Ile	Thr	Ile	Gly	Asn	Glu	Arg	Phe	Arg	Cys		
	245					250					255						
cca	gag	acc	ctg	ttc	cag	cca	tcc	ttc	atc	ggg	atg	gag	tct	gct	ggc		872
Pro	Glu	Thr	Leu	Phe	Gln	Pro	Ser	Phe	Ile	Gly	Met	Glu	Ser	Ala	Gly		
260					265					270					275		
atc	cat	gaa	acc	acc	tac	aac	agc	atc	atg	aag	tgt	gat	att	gac	atc		920
Ile	His	Glu	Thr	Thr	Tyr	Asn	Ser	Ile	Met	Lys	Cys	Asp	Ile	Asp	Ile		
				280					285					290			
agg	aag	gac	ctc	tat	gct	aac	aat	gtc	cta	tca	ggg	ggc	acc	act	atg		968
Arg	Lys	Asp	Leu	Tyr	Ala	Asn	Asn	Val	Leu	Ser	Gly	Gly	Thr	Thr	Met		
		295						300					305				
tac	cct	ggc	att	gcc	gac	cga	atg	cag	aag	gag	atc	acg	gcc	cta	gca		1016
Tyr	Pro	Gly	Ile	Ala	Asp	Arg	Met	Gln	Lys	Glu	Ile	Thr	Ala	Leu	Ala		
		310					315					320					
ccc	agc	acc	atg	aag	atc	aag	atc	att	gcc	cct	ccg	gag	cgc	aaa	tac		1064
Pro	Ser	Thr	Met	Lys	Ile	Lys	Ile	Ile	Ala	Pro	Pro	Glu	Arg	Lys	Tyr		
	325					330					335						
tct	gtc	tgg	atc	ggg	ggc	tcc	atc	ctg	gcc	tct	ctg	tcc	acc	ttc	cag		1112
Ser	Val	Trp	Ile	Gly	Gly	Ser	Ile	Leu	Ala	Ser	Leu	Ser	Thr	Phe	Gln		
340					345					350					355		
cag	atg	tgg	atc	agc	aaa	cag	gaa	tac	gat	gaa	gcc	ggg	cct	tcc	att		1160
Gln	Met	Trp	Ile	Ser	Lys	Gln	Glu	Tyr	Asp	Glu	Ala	Gly	Pro	Ser	Ile		
				360					365					370			
gtc	cac	cgc	aaa	tgc	ttc	taa	aacactttcc	tgctcctctc	tgtctctagc								1211
Val	His	Arg	Lys	Cys	Phe												
			375														
acacaactgt	gaatgtcctg	tggaattatg	ccttcagttc	ttttccaaat	cattcctagc												1271
caaagctctg	actcggtacc	tatgtgtttt	ttaataaatc	tgaaataggc	tactggtaa												1330
<210>	16																
<211>	377																
<212>	PRT																
<213>	Homo sapiens																
<400>	16																
Met	Cys	Glu	Glu	Glu	Asp	Ser	Thr	Ala	Leu	Val	Cys	Asp	Asn	Gly	Ser		
1				5					10					15			
Gly	Leu	Cys	Lys	Ala	Gly	Phe	Ala	Gly	Asp	Asp	Ala	Pro	Arg	Ala	Val		
			20					25					30				

Phe Pro Ser Ile Val Gly Arg Pro Arg His Gln Gly Val Met Val Gly
 35 40 45

Met Gly Gln Lys Asp Ser Tyr Val Gly Asp Glu Ala Gln Ser Lys Arg
 50 55 60

Gly Ile Leu Thr Leu Lys Tyr Pro Ile Glu His Gly Ile Ile Thr Asn
 65 70 75 80

Trp Asp Asp Met Glu Lys Ile Trp His His Ser Phe Tyr Asn Glu Leu
 85 90 95

Arg Val Ala Pro Glu Glu His Pro Thr Leu Leu Thr Glu Ala Pro Leu
 100 105 110

Asn Pro Lys Ala Asn Arg Glu Lys Met Thr Gln Ile Met Phe Glu Thr
 115 120 125

Phe Asn Val Pro Ala Met Tyr Val Ala Ile Gln Ala Val Leu Ser Leu
 130 135 140

Tyr Ala Ser Gly Arg Thr Thr Gly Ile Val Leu Asp Ser Gly Asp Gly
 145 150 155 160

Val Thr His Asn Val Pro Ile Tyr Glu Gly Tyr Ala Leu Pro His Ala
 165 170 175

Ile Met Arg Leu Asp Leu Ala Gly Arg Asp Leu Thr Asp Tyr Leu Met
 180 185 190

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

Glu Ile Val Arg Asp Ile Lys Glu Lys Leu Cys Tyr Val Ala Leu Asp
 210 215 220

Phe Glu Asn Glu Met Ala Thr Ala Ala Ser Ser Ser Ser Leu Glu Lys
 225 230 235 240

Ser Tyr Glu Leu Pro Asp Gly Gln Val Ile Thr Ile Gly Asn Glu Arg
 245 250 255

Phe Arg Cys Pro Glu Thr Leu Phe Gln Pro Ser Phe Ile Gly Met Glu
 260 265 270

Ser Ala Gly Ile His Glu Thr Thr Tyr Asn Ser Ile Met Lys Cys Asp
 275 280 285

Ile Asp Ile Arg Lys Asp Leu Tyr Ala Asn Asn Val Leu Ser Gly Gly
 290 295 300

Thr Thr Met Tyr Pro Gly Ile Ala Asp Arg Met Gln Lys Glu Ile Thr
 305 310 315 320

Ala Leu Ala Pro Ser Thr Met Lys Ile Lys Ile Ile Ala Pro Pro Glu
 325 330 335

Arg Lys Tyr Ser Val Trp Ile Gly Gly Ser Ile Leu Ala Ser Leu Ser
 340 345 350

Thr Phe Gln Gln Met Trp Ile Ser Lys Gln Glu Tyr Asp Glu Ala Gly
 355 360 365

Pro Ser Ile Val His Arg Lys Cys Phe
 370 375

<210> 17
 <211> 1644
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (139) .. (1386)

<400> 17
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 cacaggggatg ctggggctgt aaaccaaag ccaactggact ctgtaaaccc actgggcacc 120
 acagaggcag aaggggtg atg agt gag agg cga gtg gta gtg gac ttg ccc 171
 Met Ser Glu Arg Arg Val Val Val Asp Leu Pro
 1 5 10
 acc agt gcc agc tcc agc atg ccc ctc cag agg cgc agg gcg tcc ttc 219
 Thr Ser Ala Ser Ser Ser Met Pro Leu Gln Arg Arg Arg Ala Ser Phe
 15 20 25
 agg ggg cca cgg tca tca tcc tcc ctg gag agc ccc cca gcc tcc agg 267
 Arg Gly Pro Arg Ser Ser Ser Ser Leu Glu Ser Pro Pro Ala Ser Arg
 30 35 40
 acc aat gcc atg agt ggc ctt gtc cga gca ccc ggg gtc tat gta gga 315
 Thr Asn Ala Met Ser Gly Leu Val Arg Ala Pro Gly Val Tyr Val Gly
 45 50 55
 aca gca ccc agt ggg tgc ata ggt ggc ttg ggt gcc cgt gtg acc cgc 363
 Thr Ala Pro Ser Gly Cys Ile Gly Gly Leu Gly Ala Arg Val Thr Arg
 60 65 70 75
 cgg gcc ctc ggc atc agc agt gtc ttc ctt cag ggc ctg cgg agc tca 411
 Arg Ala Leu Gly Ile Ser Ser Val Phe Leu Gln Gly Leu Arg Ser Ser
 80 85 90

ggc	ctg	gcc	acc	gtg	ccg	gct	cca	ggt	ttg	gag	agg	gac	cat	ggt	gct	459
Gly	Leu	Ala	Thr	Val	Pro	Ala	Pro	Gly	Leu	Glu	Arg	Asp	His	Gly	Ala	
			95					100						105		
ggt	gag	gac	cta	ggg	ggc	tgc	ctg	gtg	gaa	tat	atg	gcc	aaa	gtg	cac	507
Val	Glu	Asp	Leu	Gly	Gly	Cys	Leu	Val	Glu	Tyr	Met	Ala	Lys	Val	His	
		110					115					120				
gcc	ctt	gag	caa	gtc	agt	cag	gag	ctg	gaa	aca	caa	ctg	cgg	atg	cac	555
Ala	Leu	Glu	Gln	Val	Ser	Gln	Glu	Leu	Glu	Thr	Gln	Leu	Arg	Met	His	
	125					130					135					
ctg	gag	agc	aaa	gcc	aca	cgc	tcg	gga	aac	tgg	ggt	gcc	cta	cgg	gct	603
Leu	Glu	Ser	Lys	Ala	Thr	Arg	Ser	Gly	Asn	Trp	Gly	Ala	Leu	Arg	Ala	
140					145				150						155	
tcc	tgg	gcc	agc	agc	tgc	cag	cag	gtg	ggt	gag	gca	gtc	ttg	gaa	aat	651
Ser	Trp	Ala	Ser	Ser	Cys	Gln	Gln	Val	Gly	Glu	Ala	Val	Leu	Glu	Asn	
			160						165					170		
gcc	cgg	ctc	atg	ctg	cag	aca	gaa	act	atc	cag	gcc	gga	gca	gat	gac	699
Ala	Arg	Leu	Met	Leu	Gln	Thr	Glu	Thr	Ile	Gln	Ala	Gly	Ala	Asp	Asp	
			175					180					185			
ttt	aaa	gag	aga	tat	gaa	aat	gag	cag	cca	ttt	cga	aag	gca	gca	gaa	747
Phe	Lys	Glu	Arg	Tyr	Glu	Asn	Glu	Gln	Pro	Phe	Arg	Lys	Ala	Ala	Glu	
		190					195					200				
gag	gaa	att	aac	tct	ctg	tat	aaa	gtc	att	gat	gag	gct	aat	ttg	act	795
Glu	Glu	Ile	Asn	Ser	Leu	Tyr	Lys	Val	Ile	Asp	Glu	Ala	Asn	Leu	Thr	
	205					210					215					
aaa	atg	gac	ctg	gag	agt	caa	ata	gaa	agt	ctg	aaa	gaa	gaa	ctt	ggc	843
Lys	Met	Asp	Leu	Glu	Ser	Gln	Ile	Glu	Ser	Leu	Lys	Glu	Glu	Leu	Gly	
220						225				230				235		
tct	cta	tca	aga	aac	tat	gaa	gag	gat	gtg	aag	ctg	ctg	cac	aaa	cag	891
Ser	Leu	Ser	Arg	Asn	Tyr	Glu	Glu	Asp	Val	Lys	Leu	Leu	His	Lys	Gln	
				240					245					250		
ttg	gca	ggg	tgt	gag	ctg	gaa	caa	atg	gat	gct	ccc	att	ggc	act	ggt	939
Leu	Ala	Gly	Cys	Glu	Leu	Glu	Gln	Met	Asp	Ala	Pro	Ile	Gly	Thr	Gly	
			255					260					265			
ctg	gac	gac	atc	ctt	gag	acg	atc	aga	att	cag	tgg	gag	aga	gat	gtt	987
Leu	Asp	Asp	Ile	Leu	Glu	Thr	Ile	Arg	Ile	Gln	Trp	Glu	Arg	Asp	Val	
		270					275					280				
gaa	aag	aac	cgg	gtg	gag	gca	gga	gcc	ctg	ctc	caa	gct	aag	caa	cag	1035
Glu	Lys	Asn	Arg	Val	Glu	Ala	Gly	Ala	Leu	Leu	Gln	Ala	Lys	Gln	Gln	
	285					290					295					
gcg	gag	gtg	gcc	cac	atg	tcc	cag	acc	cag	gag	gag	aag	ctg	gca	gct	1083
Ala	Glu	Val	Ala	His	Met	Ser	Gln	Thr	Gln	Glu	Glu	Lys	Leu	Ala	Ala	
300					305					310					315	
gcc	ctc	agg	gtg	gag	tta	cac	aac	act	tcg	tgc	caa	gtc	cag	agc	ctc	1131
Ala	Leu	Arg	Val	Glu	Leu	His	Asn	Thr	Ser	Cys	Gln	Val	Gln	Ser	Leu	
				320					325					330		

cag gct gag aca gaa tcc tta cgt gcc ctg aaa cga ggc ctg gag aac 1179
 Gln Ala Glu Thr Glu Ser Leu Arg Ala Leu Lys Arg Gly Leu Glu Asn
 335 340 345

acc ttg cac gat gcc aag cac tgg cat gac atg gag ctc cag aac ctg 1227
 Thr Leu His Asp Ala Lys His Trp His Asp Met Glu Leu Gln Asn Leu
 350 355 360

ggc gct gtg gtc ggc cgg ctg gag gcg gag ctc agg gaa atc cga gcg 1275
 Gly Ala Val Val Gly Arg Leu Glu Ala Glu Leu Arg Glu Ile Arg Ala
 365 370 375

gag gcg gag cag cag caa cag gag cgc gcg cat ctg ctg gcc cgc aag 1323
 Glu Ala Glu Gln Gln Gln Gln Glu Arg Ala His Leu Leu Ala Arg Lys
 380 385 390 395

tgc cag ctg cag aag gac gtg gcg tcc tac cac gcc ctg ctg gac agg 1371
 Cys Gln Leu Gln Lys Asp Val Ala Ser Tyr His Ala Leu Leu Asp Arg
 400 405 410

gag gag agc ggc tga tggagaaact tcctcttttt catgaagaaa acacccttcc 1426
 Glu Glu Ser Gly
 415

tcaacagctg acccaagaag ttgcttgagg agctttctcc tgagctccag tccctgctgg 1486

attccctggg taattcagct tgagctgaaa agcttcctgg aagtggagag gatccttctg 1546

ctttaatctg agtagtctgt agcttgagca atctcccttg tcctccttca aataaatgct 1606

ttgtgcgag cgtccagttt aaaaaaaaaa aaaaaaaaaa 1644

<210> 18
 <211> 415
 <212> PRT
 <213> Homo sapiens

<400> 18

Met Ser Glu Arg Arg Val Val Val Asp Leu Pro Thr Ser Ala Ser Ser
 1 5 10 15

Ser Met Pro Leu Gln Arg Arg Arg Ala Ser Phe Arg Gly Pro Arg Ser
 20 25 30

Ser Ser Ser Leu Glu Ser Pro Pro Ala Ser Arg Thr Asn Ala Met Ser
 35 40 45

Gly Leu Val Arg Ala Pro Gly Val Tyr Val Gly Thr Ala Pro Ser Gly
 50 55 60

Cys Ile Gly Gly Leu Gly Ala Arg Val Thr Arg Arg Ala Leu Gly Ile
 65 70 75 80

Ser Ser Val Phe Leu Gln Gly Leu Arg Ser Ser Gly Leu Ala Thr Val
 85 90 95

Pro Ala Pro Gly Leu Glu Arg Asp His Gly Ala Val Glu Asp Leu Gly
 100 105 110

Gly Cys Leu Val Glu Tyr Met Ala Lys Val His Ala Leu Glu Gln Val
 115 120 125

Ser Gln Glu Leu Glu Thr Gln Leu Arg Met His Leu Glu Ser Lys Ala
 130 135 140

Thr Arg Ser Gly Asn Trp Gly Ala Leu Arg Ala Ser Trp Ala Ser Ser
 145 150 155 160

Cys Gln Gln Val Gly Glu Ala Val Leu Glu Asn Ala Arg Leu Met Leu
 165 170 175

Gln Thr Glu Thr Ile Gln Ala Gly Ala Asp Asp Phe Lys Glu Arg Tyr
 180 185 190

Glu Asn Glu Gln Pro Phe Arg Lys Ala Ala Glu Glu Glu Ile Asn Ser
 195 200 205

Leu Tyr Lys Val Ile Asp Glu Ala Asn Leu Thr Lys Met Asp Leu Glu
 210 215 220

Ser Gln Ile Glu Ser Leu Lys Glu Glu Leu Gly Ser Leu Ser Arg Asn
 225 230 235 240

Tyr Glu Glu Asp Val Lys Leu Leu His Lys Gln Leu Ala Gly Cys Glu
 245 250 255

Leu Glu Gln Met Asp Ala Pro Ile Gly Thr Gly Leu Asp Asp Ile Leu
 260 265 270

Glu Thr Ile Arg Ile Gln Trp Glu Arg Asp Val Glu Lys Asn Arg Val
 275 280 285

Glu Ala Gly Ala Leu Leu Gln Ala Lys Gln Gln Ala Glu Val Ala His
 290 295 300

Met Ser Gln Thr Gln Glu Glu Lys Leu Ala Ala Ala Leu Arg Val Glu
 305 310 315 320

Leu His Asn Thr Ser Cys Gln Val Gln Ser Leu Gln Ala Glu Thr Glu
 325 330 335

Ser Leu Arg Ala Leu Lys Arg Gly Leu Glu Asn Thr Leu His Asp Ala

340	345	350
Lys His Trp His Asp Met Glu Leu Gln Asn Leu Gly Ala Val Val Gly		
355	360	365
Arg Leu Glu Ala Glu Leu Arg Glu Ile Arg Ala Glu Ala Glu Gln Gln		
370	375	380
Gln Gln Glu Arg Ala His Leu Leu Ala Arg Lys Cys Gln Leu Gln Lys		
385	390	395
Asp Val Ala Ser Tyr His Ala Leu Leu Asp Arg Glu Glu Ser Gly		
405	410	415

<210> 19
 <211> 1237
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (69)..(344)

<400> 19
 gctgcagagg attcctgcag aggatcaaga cagcacgtgg acctgcaca gcctctccca 60
 caggtacc atg aag gtc tcc gcg gca gcc ctc gct gtc atc ctc att gct 110
 Met Lys Val Ser Ala Ala Ala Leu Ala Val Ile Leu Ile Ala
 1 5 10
 act gcc ctc tgc gct cct gca tct gcc tcc cca tat tcc tcg gac acc 158
 Thr Ala Leu Cys Ala Pro Ala Ser Ala Ser Pro Tyr Ser Ser Asp Thr
 15 20 25 30
 aca ccc tgc tgc ttt gcc tac att gcc cgc cca ctg ccc cgt gcc cac 206
 Thr Pro Cys Cys Phe Ala Tyr Ile Ala Arg Pro Leu Pro Arg Ala His
 35 40 45
 atc aag gag tat ttc tac acc agt ggc aag tgc tcc aac cca gca gtc 254
 Ile Lys Glu Tyr Phe Tyr Thr Ser Gly Lys Cys Ser Asn Pro Ala Val
 50 55 60
 gtc ttt gtc acc cga aag aac cgc caa gtg tgt gcc aac cca gag aag 302
 Val Phe Val Thr Arg Lys Asn Arg Gln Val Cys Ala Asn Pro Glu Lys
 65 70 75
 aaa tgg gtt cgg gag tac atc aac tct ttg gag atg agc tag 344
 Lys Trp Val Arg Glu Tyr Ile Asn Ser Leu Glu Met Ser
 80 85 90
 gatggagagt ccttgaacct gaacttacac aaatttgcct gtttctgctt gctcttgtcc 404
 tagcttggga ggcttccct cactatccta cccacccgc tccttgaagg gccagattc 464
 taccacacag cagcagttac aaaaaccttc cccaggctgg acgtggtggc tcacgcctgt 524
 aatcccagca ctttgggagg ccaaggtggg tggatcactt gaggtcagga gttcgagacc 584

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agcctggcca acatgatgaa accccatctc tactaaaaat acaaaaaatt agccgggCGT    644
ggtagcgggc gcctgtagtc ccagctactc gggaggctga ggcaggagaa tggcgtgaac    704
ccgggaggcg gagcttgCag tgagccgaga tcgcgccact gcactccagc ctgggCgaca    764
gagcgagact ccgtctcaaa aaaaaaaaaa aaaaaaaaaa taaaaaaatt agccgggCGT    824
ggtggcccac gcctgtaatc ccagctactc gggaggctaa ggcaggaaaa ttgtttgaac    884
ccaggaggtg gaggctgcag tgagctgaga ttgtgccact tcactccagc ctgggtgaca    944

aagtgagact ccgtcacaac aacaacaaca aaaagcttcc ccaactaaag cctagaagag   1004
cttctgaggc gctgctttgt caaaaggaag tctctaggtt ctgagctctg gctttgcctt   1064
ggctttgccA gggctctgtg accaggaagg aagtcagcat gcctctagag gcaaggaggg   1124
gaggaacact gcactcttaa gcttccgccg tctcaacccc tcacaggagc ttactggcaa   1184
acatgaaaaa tcggcttacc attaaagttc tcaatgcaac cataaaaaaa aaa         1237

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<210> 20
<211> 91
<212> PRT
<213> Homo sapiens

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<400> 20
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Met Lys Val Ser Ala Ala Ala Leu Ala Val Ile Leu Ile Ala Thr Ala
1           5           10           15

```

```

Leu Cys Ala Pro Ala Ser Ala Ser Pro Tyr Ser Ser Asp Thr Thr Pro
          20           25           30

```

```

Cys Cys Phe Ala Tyr Ile Ala Arg Pro Leu Pro Arg Ala His Ile Lys
          35           40           45

```

```

Glu Tyr Phe Tyr Thr Ser Gly Lys Cys Ser Asn Pro Ala Val Val Phe
          50           55           60

```

```

Val Thr Arg Lys Asn Arg Gln Val Cys Ala Asn Pro Glu Lys Lys Trp
65           70           75           80

```

```

Val Arg Glu Tyr Ile Asn Ser Leu Glu Met Ser
          85           90

```

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<210> 21
<211> 2188
<212> DNA
<213> Homo sapiens

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<220>
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<221> CDS

<222> (64)..(1200)

<400> 21

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agacaggggt agtgcgaggc cgggcacagc cttcctgtgt ggttttaccg cccagagagc      60

gtc atg gac ctg ggg aaa cca atg aaa agc gtg ctg gtg gtg gct ctc      108
  Met Asp Leu Gly Lys Pro Met Lys Ser Val Leu Val Val Ala Leu
    1             5             10             15

ctt gtc att ttc cag gta tgc ctg tgt caa gat gag gtc acg gac gat      156
Leu Val Ile Phe Gln Val Cys Leu Cys Gln Asp Glu Val Thr Asp Asp
                20                25                30

tac atc gga gac aac acc aca gtg gac tac act ttg ttc gag tct ttg      204
Tyr Ile Gly Asp Asn Thr Thr Val Asp Tyr Thr Leu Phe Glu Ser Leu
                35                40                45

tgc tcc aag aag gac gtg cgg aac ttt aaa gcc tgg ttc ctc cct atc      252
Cys Ser Lys Lys Asp Val Arg Asn Phe Lys Ala Trp Phe Leu Pro Ile
                50                55                60

atg tac tcc atc att tgt ttc gtg ggc cta ctg ggc aat ggg ctg gtc      300
Met Tyr Ser Ile Ile Cys Phe Val Gly Leu Leu Gly Asn Gly Leu Val
    65             70             75

gtg ttg acc tat atc tat ttc aag agg ctc aag acc atg acc gat acc      348
Val Leu Thr Tyr Ile Tyr Phe Lys Arg Leu Lys Thr Met Thr Asp Thr
    80             85             90             95

tac ctg ctc aac ctg gcg gtg gca gac atc ctc ttc ctc ctg acc ctt      396
Tyr Leu Leu Asn Leu Ala Val Ala Asp Ile Leu Phe Leu Leu Thr Leu
                100                105                110

ccc ttc tgg gcc tac agc gcg gcc aag tcc tgg gtc ttc ggt gtc cac      444
Pro Phe Trp Ala Tyr Ser Ala Ala Lys Ser Trp Val Phe Gly Val His
                115                120                125

ttt tgc aag ctc atc ttt gcc atc tac aag atg agc ttc ttc agt ggc      492
Phe Cys Lys Leu Ile Phe Ala Ile Tyr Lys Met Ser Phe Phe Ser Gly
                130                135                140

atg ctc cta ctt ctt tgc atc agc att gac cgc tac gtg gcc atc gtc      540
Met Leu Leu Leu Leu Cys Ile Ser Ile Asp Arg Tyr Val Ala Ile Val
    145             150             155

cag gct gtc tca gct cac cgc cac cgt gcc cgc gtc ctt ctc atc agc      588
Gln Ala Val Ser Ala His Arg His Arg Ala Arg Val Leu Leu Ile Ser
    160             165             170             175

aag ctg tcc tgt gtg ggc atc tgg ata cta gcc aca gtg ctc tcc atc      636
Lys Leu Ser Cys Val Gly Ile Trp Ile Leu Ala Thr Val Leu Ser Ile
                180                185                190

cca gag ctc ctg tac agt gac ctc cag agg agc agc agt gag caa gcg      684
Pro Glu Leu Leu Tyr Ser Asp Leu Gln Arg Ser Ser Ser Glu Gln Ala
                195                200                205

atg cga tgc tct ctc atc aca gag cat gtg gag gcc ttt atc acc atc      732
Met Arg Cys Ser Leu Ile Thr Glu His Val Glu Ala Phe Ile Thr Ile
    210             215             220

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cag gtg gcc cag atg gtg atc ggc ttt ctg gtc ccc ctg ctg gcc atg Gln Val Ala Gln Met Val Ile Gly Phe Leu Val Pro Leu Leu Ala Met 225 230 235	780
agc ttc tgt tac ctt gtc atc atc cgc acc ctg ctc cag gca cgc aac Ser Phe Cys Tyr Leu Val Ile Ile Arg Thr Leu Leu Gln Ala Arg Asn 240 245 250 255	828
ttt gag cgc aac aag gcc atc aag gtg atc atc gct gtg gtc gtg gtc Phe Glu Arg Asn Lys Ala Ile Lys Val Ile Ile Ala Val Val Val Val 260 265 270	876
ttc ata gtc ttc cag ctg ccc tac aat ggg gtg gtc ctg gcc cag acg Phe Ile Val Phe Gln Leu Pro Tyr Asn Gly Val Val Leu Ala Gln Thr 275 280 285	924
gtg gcc aac ttc aac atc acc agt agc acc tgt gag ctc agt aag caa Val Ala Asn Phe Asn Ile Thr Ser Ser Thr Cys Glu Leu Ser Lys Gln 290 295 300	972
ctc aac atc gcc tac gac gtc acc tac agc ctg gcc tgc gtc cgc tgc Leu Asn Ile Ala Tyr Asp Val Thr Tyr Ser Leu Ala Cys Val Arg Cys 305 310 315	1020
tgc gtc aac cct ttc ttg tac gcc ttc atc ggc gtc aag ttc cgc aac Cys Val Asn Pro Phe Leu Tyr Ala Phe Ile Gly Val Lys Phe Arg Asn 320 325 330 335	1068
gat ctc ttc aag ctc ttc aag gac ctg ggc tgc ctc agc cag gag cag Asp Leu Phe Lys Leu Phe Lys Asp Leu Gly Cys Leu Ser Gln Glu Gln 340 345 350	1116
ctc cgg cag tgg tct tcc tgt cgg cac atc cgg cgc tcc tcc atg agt Leu Arg Gln Trp Ser Ser Cys Arg His Ile Arg Arg Ser Ser Met Ser 355 360 365	1164
gtg gag gcc gag acc acc acc acc ttc tcc cca tag gcgactcttc Val Glu Ala Glu Thr Thr Thr Thr Phe Ser Pro 370 375	1210
tgcctggact agagggacct ctcccagggt ccctgggggtg gggataggga gcagatgcaa	1270
tgactcagga catccccccg ccaaaagctg ctcagggaaa agcagctctc ccctcagagt	1330
gcaagcccct gctccagaag atagcttcac cccaatccca gctacctcaa ccaatgccaa	1390
aaaaagacag ggctgataag ctaacaccag acagacaaca ctgggaaaca gaggctattg	1450
tcccctaaac caaaaactga aagtgaaagt ccagaaactg ttcccacctg ctggagtgaa	1510
ggggccaagg aggggtgagt caaggggctg gggagtggcc tgaagagtcc tctgaatgaa	1570
ccttctggcc tcccacagac tcaaagtctc agaccagctc ttccgaaaac caggccttat	1630
ctccaagacc agagatagtg gggagacttc ttggcttggt gaggaaaagc ggacatcagc	1690
tgggtcaaaca aactctctga acccctccct ccacgttttt cttcactgtc ctccaagcca	1750
gcgggaatgg cagctgccac gccgccctaa aagcacactc atccccctcac ttgccgcgtc	1810
gccctcccag gctctcaaca ggggagagtg tgggtgtttcc tgcaggccag gccagctgcc	1870

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tccgcgtgat caaagccaca ctctgggctc cagagtgggg atgacatgca ctcatctctt 1930
ggctccactg ggatgggagg agaggacaag ggaaatgtca ggggcgggga gggtgacagt 1990
ggccgcccaa ggcccacgag cttgttcttt gttctttgtc acagggactg aaaacctctc 2050
ctcatgttct gctttcgatt cgtaaagaga gcaacatttt acccacacac agataaagtt 2110

ttcccttgag gaaacaacag ctttaaaaga aaaagaaaaa aaaagtcttt ggtaaattggc 2170
aaaaaaaaaa aaaaaaaaaa 2188

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<210> 22
<211> 378
<212> PRT
<213> Homo sapiens

```

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<400> 22
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```

Met Asp Leu Gly Lys Pro Met Lys Ser Val Leu Val Val Ala Leu Leu
1          5          10          15

```

```

Val Ile Phe Gln Val Cys Leu Cys Gln Asp Glu Val Thr Asp Asp Tyr
          20          25          30

```

```

Ile Gly Asp Asn Thr Thr Val Asp Tyr Thr Leu Phe Glu Ser Leu Cys
          35          40          45

```

```

Ser Lys Lys Asp Val Arg Asn Phe Lys Ala Trp Phe Leu Pro Ile Met
          50          55          60

```

```

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

```

```

Leu Thr Tyr Ile Tyr Phe Lys Arg Leu Lys Thr Met Thr Asp Thr Tyr
          85          90          95

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Leu Leu Asn Leu Ala Val Ala Asp Ile Leu Phe Leu Leu Thr Leu Pro
          100          105          110

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Phe Trp Ala Tyr Ser Ala Ala Lys Ser Trp Val Phe Gly Val His Phe
          115          120          125

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Cys Lys Leu Ile Phe Ala Ile Tyr Lys Met Ser Phe Phe Ser Gly Met
          130          135          140

```

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Leu Leu Leu Leu Cys Ile Ser Ile Asp Arg Tyr Val Ala Ile Val Gln
145          150          155          160

```

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Ala Val Ser Ala His Arg His Arg Ala Arg Val Leu Leu Ile Ser Lys
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165

170

175

Leu Ser Cys Val Gly Ile Trp Ile Leu Ala Thr Val Leu Ser Ile Pro
 180 185 190

Glu Leu Leu Tyr Ser Asp Leu Gln Arg Ser Ser Ser Glu Gln Ala Met
 195 200 205

Arg Cys Ser Leu Ile Thr Glu His Val Glu Ala Phe Ile Thr Ile Gln
 210 215 220

Val Ala Gln Met Val Ile Gly Phe Leu Val Pro Leu Leu Ala Met Ser
 225 230 235 240

Phe Cys Tyr Leu Val Ile Ile Arg Thr Leu Leu Gln Ala Arg Asn Phe
 245 250 255

Glu Arg Asn Lys Ala Ile Lys Val Ile Ile Ala Val Val Val Val Phe
 260 265 270

Ile Val Phe Gln Leu Pro Tyr Asn Gly Val Val Leu Ala Gln Thr Val
 275 280 285

Ala Asn Phe Asn Ile Thr Ser Ser Thr Cys Glu Leu Ser Lys Gln Leu
 290 295 300

Asn Ile Ala Tyr Asp Val Thr Tyr Ser Leu Ala Cys Val Arg Cys Cys
 305 310 315 320

Val Asn Pro Phe Leu Tyr Ala Phe Ile Gly Val Lys Phe Arg Asn Asp
 325 330 335

Leu Phe Lys Leu Phe Lys Asp Leu Gly Cys Leu Ser Gln Glu Gln Leu
 340 345 350

Arg Gln Trp Ser Ser Cys Arg His Ile Arg Arg Ser Ser Met Ser Val
 355 360 365

Glu Ala Glu Thr Thr Thr Thr Phe Ser Pro
 370 375

<210> 23
 <211> 1834
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (73) .. (858)

<400> 23

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actttgacag tcttctcatg ctgcctctgc caccttctct gccagaagat accatttcaa      60

ctttaacaca gc atg atc gaa aca tac aac caa act tct ccc cga tct gcg      111
      Met Ile Glu Thr Tyr Asn Gln Thr Ser Pro Arg Ser Ala
            1              5              10

gcc act gga ctg ccc atc agc atg aaa att ttt atg tat tta ctt act      159
Ala Thr Gly Leu Pro Ile Ser Met Lys Ile Phe Met Tyr Leu Leu Thr
      15              20              25

gtt ttt ctt atc acc cag atg att ggg tca gca ctt ttt gct gtg tat      207
Val Phe Leu Ile Thr Gln Met Ile Gly Ser Ala Leu Phe Ala Val Tyr
      30              35              40              45

ctt cat aga agg ttg gac aag ata gaa gat gaa agg aat ctt cat gaa      255
Leu His Arg Arg Leu Asp Lys Ile Glu Asp Glu Arg Asn Leu His Glu
            50              55              60

gat ttt gta ttc atg aaa acg ata cag aga tgc aac aca gga gaa aga      303
Asp Phe Val Phe Met Lys Thr Ile Gln Arg Cys Asn Thr Gly Glu Arg
            65              70              75

tcc tta tcc tta ctg aac tgt gag gag att aaa agc cag ttt gaa ggc      351
Ser Leu Ser Leu Leu Asn Cys Glu Glu Ile Lys Ser Gln Phe Glu Gly
            80              85              90

ttt gtg aag gat ata atg tta aac aaa gag gag acg aag aaa gaa aac      399
Phe Val Lys Asp Ile Met Leu Asn Lys Glu Glu Thr Lys Lys Glu Asn
            95              100              105

agc ttt gaa atg caa aaa ggt gat cag aat cct caa att gcg gca cat      447
Ser Phe Glu Met Gln Lys Gly Asp Gln Asn Pro Gln Ile Ala Ala His
      110              115              120              125

gtc ata agt gag gcc agc agt aaa aca aca tct gtg tta cag tgg gct      495
Val Ile Ser Glu Ala Ser Ser Lys Thr Thr Ser Val Leu Gln Trp Ala
            130              135              140

gaa aaa gga tac tac acc atg agc aac aac ttg gta acc ctg gaa aat      543
Glu Lys Gly Tyr Tyr Thr Met Ser Asn Asn Leu Val Thr Leu Glu Asn
            145              150              155

ggg aaa cag ctg acc gtt aaa aga caa gga ctc tat tat atc tat gcc      591
Gly Lys Gln Leu Thr Val Lys Arg Gln Gly Leu Tyr Tyr Ile Tyr Ala
            160              165              170

caa gtc acc ttc tgt tcc aat cgg gaa gct tcg agt caa gct cca ttt      639
Gln Val Thr Phe Cys Ser Asn Arg Glu Ala Ser Ser Gln Ala Pro Phe
            175              180              185

ata gcc agc ctc tgc cta aag tcc ccc ggt aga ttc gag aga atc tta      687
Ile Ala Ser Leu Cys Leu Lys Ser Pro Gly Arg Phe Glu Arg Ile Leu
      190              195              200              205

ctc aga gct gca aat acc cac agt tcc gcc aaa cct tgc ggg caa caa      735
Leu Arg Ala Ala Asn Thr His Ser Ser Ala Lys Pro Cys Gly Gln Gln
            210              215              220

tcc att cac ttg gga gga gta ttt gaa ttg caa cca ggt gct tcg gtg      783
Ser Ile His Leu Gly Gly Val Phe Glu Leu Gln Pro Gly Ala Ser Val

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225	230	235	
ttt gtc aat gtg act gat cca agc caa gtg agc cat ggc act ggc ttc			831
Phe Val Asn Val Thr Asp Pro Ser Gln Val Ser His Gly Thr Gly Phe			
240	245	250	
acg tcc ttt ggc tta ctc aaa ctc tga acagtgtcac cttgcaggct			878
Thr Ser Phe Gly Leu Leu Lys Leu			
255	260		
gtggtggagc tgacgctggg agtcttcata atacagcaca gcggttaagc ccaccccctg			938
ttaactgcct atttataacc ctaggatcct ccttatggag aactatttat tatacactcc			998
aaggcatgta gaactgtaat aagtgaatta caggtcacat gaaaccaaaa cgggccctgc			1058
tccataagag cttatatatc tgaagcagca accccactga tgcagacatc cagagagtcc			1118
tatgaaaaga caaggccatt atgcacaggt tgaattctga gtaaacagca gataacttgc			1178
caagttcagt tttgtttctt tgcgtgcagt gtctttccat ggataatgca tttgatttat			1238
cagtgaagat gcagaaggga aatggggagc ctcagctcac attcagttat ggttgactct			1298
gggttcctat ggccttgttg gagggggcca ggctctagaa cgtctaacac agtggagAAC			1358
cgaaaccccc ccccccccc cgccaccctc tcggacagtt attcattctc tttcaatctc			1418
tctctctcca tctctctctt tcagtctctc tctctcaacc tctttcttcc aatctctctt			1478
tctcaatctc tctgtttccc tttgtcagtc tcttccctcc ccagttctct cttctcaatc			1538
cccctttcta acacacacac acacacacac acacacacac acacacacac acacacacac			1598
acagagtcag gccgttgcta gtcagttctc ttctttccac cctgtcccta tctctaccac			1658
tatagatgag ggtgaggagt agggagtgca gccctgagcc tgcccactcc tcattacgaa			1718
atgactgtat ttaaaggaaa tctattgtat ctacctgcag tctccattgt ttccagagtg			1778
aacttgtaat tatcttgtaa tttatTTTTT gaataataaa gacctcttaa cattaa			1834

<210> 24
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 24

Met	Ile	Glu	Thr	Tyr	Asn	Gln	Thr	Ser	Pro	Arg	Ser	Ala	Ala	Thr	Gly
1				5					10					15	

Leu	Pro	Ile	Ser	Met	Lys	Ile	Phe	Met	Tyr	Leu	Leu	Thr	Val	Phe	Leu
		20						25					30		

Ile	Thr	Gln	Met	Ile	Gly	Ser	Ala	Leu	Phe	Ala	Val	Tyr	Leu	His	Arg
		35					40					45			

Arg Leu Asp Lys Ile Glu Asp Glu Arg Asn Leu His Glu Asp Phe Val

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

<210> 25
 <211> 1988
 <212> DNA
 <213> Homo sapiens

<220>

<221> CDS

<222> (158)..(616)

<400> 25

gccttctgtg tgtgcacatg tgtaatacat atctgggacg aaagctatct atataaagtc 60

cttgattctg tgtgggttca aacacatttc aaagcttcag gatcctgaaa ggttttgctc 120

tacttcctga agacctgaac accgctccca taaagcc atg gct tgc ctt gga ttt 175
Met Ala Cys Leu Gly Phe
1 5cag cgg cac aag gct cag ctg aac ctg gct acc agg acc tgg ccc tgc 223
Gln Arg His Lys Ala Gln Leu Asn Leu Ala Thr Arg Thr Trp Pro Cys
10 15 20act ctc ctg ttt ttt ctt ctc ttc atc cct gtc ttc tgc aaa gca atg 271
Thr Leu Leu Phe Phe Leu Leu Phe Ile Pro Val Phe Cys Lys Ala Met
25 30 35cac gtg gcc cag cct gct gtg gta ctg gcc agc agc cga ggc atc gcc 319
His Val Ala Gln Pro Ala Val Val Leu Ala Ser Ser Arg Gly Ile Ala
40 45 50agc ttt gtg tgt gag tat gca tct cca ggc aaa gcc act gag gtc cgg 367
Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly Lys Ala Thr Glu Val Arg
55 60 65 70gtg aca gtg ctt cgg cag gct gac agc cag gtg act gaa gtc tgt gcg 415
Val Thr Val Leu Arg Gln Ala Asp Ser Gln Val Thr Glu Val Cys Ala
75 80 85gca acc tac atg atg ggg aat gag ttg acc ttc cta gat gat tcc atc 463
Ala Thr Tyr Met Met Gly Asn Glu Leu Thr Phe Leu Asp Asp Ser Ile
90 95 100tgc acg ggc acc tcc agt gga aat caa gtg aac ctc act atc caa gga 511
Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile Gln Gly
105 110 115ctg agg gcc atg gac acg gga ctc tac atc tgc aag gtg gag ctc atg 559
Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu Leu Met
120 125 130tac cca ccg cca tac tac ctg ggc ata ggc aac gga acc cag att tat 607
Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln Ile Tyr
135 140 145 150gta att gat ccagaaccgt gccagattc tgacttctc ctctggatcc 656
Val Ile Asp

ttgcagcagt tagttcgggg ttgttttttt atagctttct cctcacagct gtttctttga 716

gcaaaatgct aaagaaaaga agccctctta caacaggggt ctatgtgaaa atgcccccaa 776

cagagccaga atgtgaaaag caatttcagc cttattttat tcccatcaat tgagaaacca 836

ttatgaagaa gagagtccat atttcaattt ccaagagctg aggcaattct aacttttttg 896

ctatccagct atttttattt gtttgtgcat ttggggggaa ttcattctctc tttaatataa 956

agttggatgc ggaacccaaa ttacgtgtac tacaatttaa agcaaaggag tagaaagaca 1016

gagctgggat gtttctgtca catcagctcc actttcagtg aaagcatcac ttgggattaa 1076
 tatggggatg cagcattatg atgtgggtca aggaattaag ttagggaatg gcacagccca 1136
 aagaaggaaa aggcagggag cgagggagaa gactatatgtg tacacacott atatttacgt 1196
 atgagacgtt tatagccgaa atgatctttt caagttaaatt tttatgcott ttattttctta 1256
 aacaaatgta tgattacatc aaggcttcaa aaatactcac atggctatgt tttagccagt 1316
 gatgctaaag gttgtattgc atatatacat atatatatat atatatatat atatatatat 1376
 atatatatat atatatatat atattttaat ttgatagtat tgtgcataga gccacgtatg 1436
 tttttgtgta tttgttaatg gtttgaatat aaacactata tggcagtgtc tttccacott 1496
 ggggtcccagg gaagttttgt ggaggagctc aggacactaa tacaccaggt agaacacaag 1556
 gtcatttgct aactagcttg gaaactggat gaggtcatag cagtgcctga ttgcgtggaa 1616
 ttgtgctgag ttggtgttga catgtgcttt ggggctttta caccagttcc tttcaatggg 1676
 ttgcaaggaa gccacagctg gtggtatctg agttgacttg acagaacact gtcttgaaga 1736
 caatggctta ctccaggaga cccacaggta tgaccttcta ggaagctcca gttcgatggg 1796
 cccaattctt acaaacatgt ggttaatgcc atggacagaa gaaggcagca ggtggcagaa 1856
 tgggggtgcat gaaggtttct gaaaattaac actgcttgtg tttttaactc aatattttcc 1916
 atgaaaatgc aacaacatgt ataatatattt taattaaata aaaatctgtg gtggtcgttt 1976
 taaaaaaaaa aa 1988

<210> 26
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 26

Met Ala Cys Leu Gly Phe Gln Arg His Lys Ala Gln Leu Asn Leu Ala
 1 5 10 15

Thr Arg Thr Trp Pro Cys Thr Leu Leu Phe Phe Leu Leu Phe Ile Pro
 20 25 30

Val Phe Cys Lys Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala
 35 40 45

Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly
 50 55 60

Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln
 65 70 75 80

Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr
85 90 95

Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val

100 105 110

Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile
115 120 125

Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly
130 135 140

Asn Gly Thr Gln Ile Tyr Val Ile Asp
145 150

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<210> 27
<211> 1878
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (158) .. (682)
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Cys Thr Gly Thr Ser Ser Gly Asn Gln Val Asn Leu Thr Ile Gln Gly	
105 110 115	
ctg agg gcc atg gac acg gga ctc tac atc tgc aag gtg gag ctc atg	559
Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile Cys Lys Val Glu Leu Met	
120 125 130	
tac cca ccg cca tac tac ctg ggc ata ggc aac gga acc cag att tat	607
Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly Asn Gly Thr Gln Ile Tyr	
135 140 145 150	
gta att gct aaa gaa aag aag ccc tct tac aac agg ggt cta tgt gaa	655
Val Ile Ala Lys Glu Lys Lys Pro Ser Tyr Asn Arg Gly Leu Cys Glu	
155 160 165	
aat gcc ccc aac aga gcc aga atg tga aaagcaattt cagccttatt	702
Asn Ala Pro Asn Arg Ala Arg Met	
170	
ttattcccat caattgagaa accattatga agaagagagt ccatatttca atttccaaga	762
gctgaggcaa ttctaacttt ttgtctatcc agctatTTTT atttgTTTgt gcatttgggg	822
ggaattcatc tctctttaat ataaagttgg atgcggaacc caaattacgt gtactacaat	882
ttaaagcaaa ggagtagaaa gacagagctg ggatgtttct gtcacatcag ctccactttc	942
agtgaaagca tcacttgga ttaatatggg gatgcagcat tatgatgtgg gtcaaggaat	1002
taagttaggg aatggcacag cccaagaag gaaaaggcag ggagcgaggg agaagactat	1062
attgtacaca ctttatattt acgtatgaga cgTTTTatagc cgaaatgatc ttttcaagtt	1122
aaattttatg ctttttattt cttaaacaaa tgtatgatta catcaaggct tcaaaaatac	1182
tcacatggct atgttttagc cagtgatgct aaaggTTgta ttgcatatat acatatatat	1242
atatatatat atatatatat atatatatat atatatatat atatatatTT taatttgata	1302
gtattgtgca tagagccacg tatgtTTTTg tgtatttgtt aatggTTTga atataaacac	1362
tatatggcag tgtctttcca ccttgggTcc cagggaagtt ttgtggagga gctcaggaca	1422
ctaatacacc aggtagaaca caaggTcatt tgctaactag cttggaaact ggatgaggTc	1482
atagcagtgc ttgattgcgt ggaattgtgc tgagttggtg ttgacatgtg ctttggggct	1542
tttacaccag ttcttttcaa tggTTTgcaa ggaagccaca gctggTggtg tctgagTTga	1602
cttgacagaa cactgtcttg aagacaatgg cttactccag gagaccaca ggtatgacct	1662
tctaggaagc tccagttcga tgggccaat tcttacaac atgtggTTaa tgccatggac	1722
agaagaaggc agcaggtggc agaatggggT gcatgaaggT ttctgaaaat taacactgct	1782
tgtgtTTTTa actcaatatt ttccatgaaa atgcaacaac atgtataata tttttaatta	1842
aataaaaaTc tgtggtggTc gttttaaaaa aaaaaa	1878

<211> 174
 <212> PRT
 <213> Homo sapiens

<400> 28

Met Ala Cys Leu Gly Phe Gln Arg His Lys Ala Gln Leu Asn Leu Ala
 1 5 10 15

Thr Arg Thr Trp Pro Cys Thr Leu Leu Phe Phe Leu Leu Phe Ile Pro
 20 25 30

Val Phe Cys Lys Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala
 35 40 45

Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly
 50 55 60

Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln
 65 70 75 80

Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr
 85 90 95

Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val
 100 105 110

Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile
 115 120 125

Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly
 130 135 140

Asn Gly Thr Gln Ile Tyr Val Ile Ala Lys Glu Lys Lys Pro Ser Tyr
 145 150 155 160

Asn Arg Gly Leu Cys Glu Asn Ala Pro Asn Arg Ala Arg Met
 165 170

<210> 29
 <211> 1731
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (350)..(1351)

<400> 29

ggcgggtgccg gccgaaccca gacccgaggt tttagaagca gagtcaggcg aagctgggcc

60

agaaccgcga cctccgcaac cttgagcggc atccgtggag tgcgcctgcg cagctacgac	120
cgcagcagga aagcgccgcc ggccaggccc agctgtggcc ggacagggac tggaagagag	180
gacgcggtcg agtaggtgtg caccagccct ggcaacgaga gcgtctaccc cgaactctgc	240
tggccttgag gtggggaagc cggggagggc agttgaggac cccgcggagg cgcgtgactg	300
gttgagcggg caggccagcc tccgagccgg gtggacacag ttttaaaac atg aat cct	358
Met Asn Pro	
1	
aca ctc atc ctt gct gcc ttt tgc ctg gga att gcc tca gct act cta	406
Thr Leu Ile Leu Ala Ala Phe Cys Leu Gly Ile Ala Ser Ala Thr Leu	
5 10 15	
aca ttt gat cac agt tta gag gca cag tgg acc aag tgg aag gcg atg	454
Thr Phe Asp His Ser Leu Glu Ala Gln Trp Thr Lys Trp Lys Ala Met	
20 25 30 35	
cac aac aga tta tac ggc atg aat gaa gaa gga tgg agg aga gca gtg	502
His Asn Arg Leu Tyr Gly Met Asn Glu Glu Gly Trp Arg Arg Ala Val	
40 45 50	
tgg gag aag aac atg aag atg att gaa ctg cac aat cag gaa tac agg	550
Trp Glu Lys Asn Met Lys Met Ile Glu Leu His Asn Gln Glu Tyr Arg	
55 60 65	
gaa ggg aaa cac agc ttc aca atg gcc atg aac gcc ttt gga gac atg	598
Glu Gly Lys His Ser Phe Thr Met Ala Met Asn Ala Phe Gly Asp Met	
70 75 80	
acc agt gaa gaa ttc agg cag gtg atg aat ggc ttt caa aac cgt aag	646
Thr Ser Glu Glu Phe Arg Gln Val Met Asn Gly Phe Gln Asn Arg Lys	
85 90 95	
ccc agg aag ggg aaa gtg ttc cag gaa cct ctg ttt tat gag gcc ccc	694
Pro Arg Lys Gly Lys Val Phe Gln Glu Pro Leu Phe Tyr Glu Ala Pro	
100 105 110 115	
aga tct gtg gat tgg aga gag aaa ggc tac gtg act cct gtg aag aat	742
Arg Ser Val Asp Trp Arg Glu Lys Gly Tyr Val Thr Pro Val Lys Asn	
120 125 130	
cag ggt cag tgt ggt tct tgt tgg gct ttt agt gct act ggt gct ctt	790
Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ala Thr Gly Ala Leu	
135 140 145	
gaa gga cag atg ttc cgg aaa act ggg agg ctt atc tca ctg agt gag	838
Glu Gly Gln Met Phe Arg Lys Thr Gly Arg Leu Ile Ser Leu Ser Glu	
150 155 160	
cag aat ctg gta gac tgc tct ggg cct caa ggc aat gaa ggc tgc aat	886
Gln Asn Leu Val Asp Cys Ser Gly Pro Gln Gly Asn Glu Gly Cys Asn	
165 170 175	
ggt ggc cta atg gat tat gct ttc cag tat gtt cag gat aat gga ggc	934
Gly Gly Leu Met Asp Tyr Ala Phe Gln Tyr Val Gln Asp Asn Gly Gly	
180 185 190 195	
ctg gac tct gag gaa tcc tat cca tat gag gca aca gaa gaa tcc tgt	982

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Leu Asp Ser Glu Glu Ser Tyr Pro Tyr Glu Ala Thr Glu Glu Ser Cys
                200                      205                      210

aag tac aat ccc aag tat tct gtt gct aat gac acc ggc ttt gtg gac      1030
Lys Tyr Asn Pro Lys Tyr Ser Val Ala Asn Asp Thr Gly Phe Val Asp
                215                      220                      225

atc cct aag cag gag aag gcc ctg atg aag gca gtt gca act gtg ggg      1078
Ile Pro Lys Gln Glu Lys Ala Leu Met Lys Ala Val Ala Thr Val Gly
                230                      235                      240

ccc att tct gtt gct att gat gca ggt cat gag tcc ttc ctg ttc tat      1126
Pro Ile Ser Val Ala Ile Asp Ala Gly His Glu Ser Phe Leu Phe Tyr
                245                      250                      255

aaa gaa ggc att tat ttt gag cca gac tgt agc agt gaa gac atg gat      1174
Lys Glu Gly Ile Tyr Phe Glu Pro Asp Cys Ser Ser Glu Asp Met Asp
260                      265                      270                      275

cat ggt gtg ctg gtg gtt ggc tac gga ttt gaa agc aca gaa tca gat      1222
His Gly Val Leu Val Val Gly Tyr Gly Phe Glu Ser Thr Glu Ser Asp
                280                      285                      290

aac aat aaa tat tgg ctg gtg aag aac agc tgg ggt gaa gaa tgg ggc      1270
Asn Asn Lys Tyr Trp Leu Val Lys Asn Ser Trp Gly Glu Glu Trp Gly
                295                      300                      305

atg ggt ggc tac gta aag atg gcc aaa gac cgg aga aac cat tgt gga      1318
Met Gly Gly Tyr Val Lys Met Ala Lys Asp Arg Arg Asn His Cys Gly
                310                      315                      320

att gcc tca gca gcc agc tac ccc act gtg tga gctggtggac ggtgatgagg      1371
Ile Ala Ser Ala Ala Ser Tyr Pro Thr Val
                325                      330

aaggacttga ctgggggatgg cgcatgcatg ggaggaattc atcttcagtc taccagcccc      1431

cgctgtgtcg gatacacact cgaatcattg aagatccgag tgtgatttga attctgtgat      1491

attttcacac tggtaaattgt tacctctatt ttaattactg ctataaatag gtttatatta      1551

ttgattcact tactgacttt gcattttcgt ttttaaaagg atgtataaat ttttacctgt      1611

ttaaataaaa tttaatttca aatgtagtgg tggggcttct ttctatTTTT gatgcactga      1671

atTTTTgtgt aataaagaac ataattgggc tctaagccat aaaaaaaaaa aaaaaaaaaa      1731

<210> 30
<211> 333
<212> PRT
<213> Homo sapiens

<400> 30

Met Asn Pro Thr Leu Ile Leu Ala Ala Phe Cys Leu Gly Ile Ala Ser
1                      5                      10                      15

Ala Thr Leu Thr Phe Asp His Ser Leu Glu Ala Gln Trp Thr Lys Trp
20                      25                      30

```

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

Glu Ser Asp Asn Asn Lys Tyr Trp Leu Val Lys Asn Ser Trp Gly Glu
 290 295 300

Glu Trp Gly Met Gly Gly Tyr Val Lys Met Ala Lys Asp Arg Arg Asn
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His Cys Gly Ile Ala Ser Ala Ala Ser Tyr Pro Thr Val
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<210> 31
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (206)..(1207)

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 cgcagcagga aagcgccgcc ggccaggccc agctgtggcc ggacagggac tggaagagag 180
 gacgcggtcg agtaggtttt aaaac atg aat cct aca ctc atc ctt gct gcc 232
 Met Asn Pro Thr Leu Ile Leu Ala Ala
 1 5
 ttt tgc ctg gga att gcc tca gct act cta aca ttt gat cac agt tta 280
 Phe Cys Leu Gly Ile Ala Ser Ala Thr Leu Thr Phe Asp His Ser Leu
 10 15 20 25
 gag gca cag tgg acc aag tgg aag gcg atg cac aac aga tta tac ggc 328
 Glu Ala Gln Trp Thr Lys Trp Lys Ala Met His Asn Arg Leu Tyr Gly
 30 35 40
 atg aat gaa gaa gga tgg agg aga gca gtg tgg gag aag aac atg aag 376
 Met Asn Glu Glu Gly Trp Arg Arg Ala Val Trp Glu Lys Asn Met Lys
 45 50 55
 atg att gaa ctg cac aat cag gaa tac agg gaa ggg aaa cac agc ttc 424
 Met Ile Glu Leu His Asn Gln Glu Tyr Arg Glu Gly Lys His Ser Phe
 60 65 70
 aca atg gcc atg aac gcc ttt gga gac atg acc agt gaa gaa ttc agg 472
 Thr Met Ala Met Asn Ala Phe Gly Asp Met Thr Ser Glu Glu Phe Arg
 75 80 85
 cag gtg atg aat ggc ttt caa aac cgt aag ccc agg aag ggg aaa gtg 520
 Gln Val Met Asn Gly Phe Gln Asn Arg Lys Pro Arg Lys Gly Lys Val
 90 95 100 105
 ttc cag gaa cct ctg ttt tat gag gcc ccc aga tct gtg gat tgg aga 568
 Phe Gln Glu Pro Leu Phe Tyr Glu Ala Pro Arg Ser Val Asp Trp Arg
 110 115 120

gag aaa ggc tac gtg act cct gtg aag aat cag ggt cag tgt ggt tct Glu Lys Gly Tyr Val Thr Pro Val Lys Asn Gln Gly Gln Cys Gly Ser 125 130 135	616
tgt tgg gct ttt agt gct act ggt gct ctt gaa gga cag atg ttc cgg Cys Trp Ala Phe Ser Ala Thr Gly Ala Leu Glu Gly Gln Met Phe Arg 140 145 150	664
aaa act ggg agg ctt atc tca ctg agt gag cag aat ctg gta gac tgc Lys Thr Gly Arg Leu Ile Ser Leu Ser Glu Gln Asn Leu Val Asp Cys 155 160 165	712
tct ggg cct caa ggc aat gaa ggc tgc aat ggt ggc cta atg gat tat Ser Gly Pro Gln Gly Asn Glu Gly Cys Asn Gly Gly Leu Met Asp Tyr 170 175 180 185	760
gct ttc cag tat gtt cag gat aat gga ggc ctg gac tct gag gaa tcc Ala Phe Gln Tyr Val Gln Asp Asn Gly Gly Leu Asp Ser Glu Glu Ser 190 195 200	808
tat cca tat gag gca aca gaa gaa tcc tgt aag tac aat ccc aag tat Tyr Pro Tyr Glu Ala Thr Glu Glu Ser Cys Lys Tyr Asn Pro Lys Tyr 205 210 215	856
tct gtt gct aat gac acc ggc ttt gtg gac atc cct aag cag gag aag Ser Val Ala Asn Asp Thr Gly Phe Val Asp Ile Pro Lys Gln Glu Lys 220 225 230	904
gcc ctg atg aag gca gtt gca act gtg ggg ccc att tct gtt gct att Ala Leu Met Lys Ala Val Ala Thr Val Gly Pro Ile Ser Val Ala Ile 235 240 245	952
gat gca ggt cat gag tcc ttc ctg ttc tat aaa gaa ggc att tat ttt Asp Ala Gly His Glu Ser Phe Leu Phe Tyr Lys Glu Gly Ile Tyr Phe 250 255 260 265	1000
gag cca gac tgt agc agt gaa gac atg gat cat ggt gtg ctg gtg gtt Glu Pro Asp Cys Ser Ser Glu Asp Met Asp His Gly Val Leu Val Val 270 275 280	1048
ggc tac gga ttt gaa agc aca gaa tca gat aac aat aaa tat tgg ctg Gly Tyr Gly Phe Glu Ser Thr Glu Ser Asp Asn Asn Lys Tyr Trp Leu 285 290 295	1096
gtg aag aac agc tgg ggt gaa gaa tgg ggc atg ggt ggc tac gta aag Val Lys Asn Ser Trp Gly Glu Glu Trp Gly Met Gly Gly Tyr Val Lys 300 305 310	1144
atg gcc aaa gac cgg aga aac cat tgt gga att gcc tca gca gcc agc Met Ala Lys Asp Arg Arg Asn His Cys Gly Ile Ala Ser Ala Ala Ser 315 320 325	1192
tac ccc act gtg tga gctggtggac ggtgatgagg aaggacttga ctgggggatgg Tyr Pro Thr Val 330	1247
cgcatgcatg ggaggaattc atcttcagtc taccagcccc cgctgtgtcg gatacacact	1307
cgaatcattg aagatccgag tgtgatttga attctgtgat attttcacac tggtaaattgt	1367
tacctctatt ttaattactg ctataaatag gtttatatta ttgattcact tactgacttt	1427
gcattttcgt ttttaaaagg atgtataaat ttttacctgt ttaaataaaa ttttaatttca	1487

aatgtagtgg tggggcttct ttctatTTTT gatgcactga atttttgtgt aataaagaac 1547

ataattgggc tctaagccat aaaaaaaaaa aaaaaaaaaa 1587

<210> 32

<211> 333

<212> PRT

<213> Homo sapiens

<400> 32

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

Lys Ala Met His Asn Arg Leu Tyr Gly Met Asn Glu Glu Gly Trp Arg
35 40 45

Arg Ala Val Trp Glu Lys Asn Met Lys Met Ile Glu Leu His Asn Gln
50 55 60

Glu Tyr Arg Glu Gly Lys His Ser Phe Thr Met Ala Met Asn Ala Phe
65 70 75 80

Gly Asp Met Thr Ser Glu Glu Phe Arg Gln Val Met Asn Gly Phe Gln
85 90 95

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

Glu Ala Pro Arg Ser Val Asp Trp Arg Glu Lys Gly Tyr Val Thr Pro
115 120 125

Val Lys Asn Gln Gly Gln Cys Gly Ser Cys Trp Ala Phe Ser Ala Thr
130 135 140

Gly Ala Leu Glu Gly Gln Met Phe Arg Lys Thr Gly Arg Leu Ile Ser
145 150 155 160

Leu Ser Glu Gln Asn Leu Val Asp Cys Ser Gly Pro Gln Gly Asn Glu
165 170 175

Gly Cys Asn Gly Gly Leu Met Asp Tyr Ala Phe Gln Tyr Val Gln Asp
180 185 190

Asn Gly Gly Leu Asp Ser Glu Glu Ser Tyr Pro Tyr Glu Ala Thr Glu
195 200 205

Glu Ser Cys Lys Tyr Asn Pro Lys Tyr Ser Val Ala Asn Asp Thr Gly
 210 215 220

Phe Val Asp Ile Pro Lys Gln Glu Lys Ala Leu Met Lys Ala Val Ala
 225 230 235 240

Thr Val Gly Pro Ile Ser Val Ala Ile Asp Ala Gly His Glu Ser Phe
 245 250 255

Leu Phe Tyr Lys Glu Gly Ile Tyr Phe Glu Pro Asp Cys Ser Ser Glu
 260 265 270

Asp Met Asp His Gly Val Leu Val Val Gly Tyr Gly Phe Glu Ser Thr
 275 280 285

Glu Ser Asp Asn Asn Lys Tyr Trp Leu Val Lys Asn Ser Trp Gly Glu
 290 295 300

Glu Trp Gly Met Gly Gly Tyr Val Lys Met Ala Lys Asp Arg Arg Asn
 305 310 315 320

His Cys Gly Ile Ala Ser Ala Ala Ser Tyr Pro Thr Val
 325 330

<210> 33
 <211> 2756
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)..(2061)

<400> 33
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 Met Gln Leu Gly Glu Gln Leu Leu Val Ser Ser Val Asn Leu Pro Gly
 1 5 10 15
 gcg cac ttc tac ccg ctg gag agt gcg cga ggc ggc agc ggc ggg agc 96
 Ala His Phe Tyr Pro Leu Glu Ser Ala Arg Gly Gly Ser Gly Gly Ser
 20 25 30
 gct ggc cac ctc ccc agc gcg gcc ccc tct cct cag aag ttg gac tta 144
 Ala Gly His Leu Pro Ser Ala Ala Pro Ser Pro Gln Lys Leu Asp Leu
 35 40 45
 gac aaa gcg tcc aag aag ttt tcc ggc agt ctc tcc tgc gag gcg gtg 192
 Asp Lys Ala Ser Lys Lys Phe Ser Gly Ser Leu Ser Cys Glu Ala Val
 50 55 60
 agc ggg gag ccc gca gcc gcc agc gca ggg gcc ccc gcg gcc atg ctt 240
 Ser Gly Glu Pro Ala Ala Ala Ser Ala Gly Ala Pro Ala Ala Met Leu

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

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

ggt cga ggt tct tac cag agg aag atg gca gct gga cta cca tgg acc 1776
Gly Arg Gly Ser Tyr Gln Arg Lys Met Ala Ala Gly Leu Pro Trp Thr
580 585 590

tcc aga aca agc ccc act gtg ttc tct gaa gat cag ctc tcc aag gag 1824
Ser Arg Thr Ser Pro Thr Val Phe Ser Glu Asp Gln Leu Ser Lys Glu
595 600 605

aaa gtg aaa gag gaa att ggc tct tct tgg ata gag aca ccc cct tcc 1872
Lys Val Lys Glu Glu Ile Gly Ser Ser Trp Ile Glu Thr Pro Pro Ser
610 615 620

atc	aaa	tct	cta	gat	tcc	aat	gat	tca	gga	gta	tac	acc	agt	gct	tgt		1920
Ile	Lys	Ser	Leu	Asp	Ser	Asn	Asp	Ser	Gly	Val	Tyr	Thr	Ser	Ala	Cys		
625					630					635					640		

aag cga agg cgg ctg tct cct agc aac tcc agt aat gaa aat tca ccc 1968
Lys Arg Arg Arg Leu Ser Pro Ser Asn Ser Ser Asn Glu Asn Ser Pro
645 650 655

tcc	ata	aag	tgt	gag	gac	att	aat	gct	gaa	gag	tat	agt	aaa	gac	acc	2016
Ser	Ile	Lys	Cys	Glu	Asp	Ile	Asn	Ala	Glu	Glu	Tyr	Ser	Lys	Asp	Thr	
			660					665					670			

tca	aaa	ggc	atg	gga	ggg	tat	tat	gct	ttt	tac	aca	act	ccc	taa	2061
Ser	Lys	Gly	Met	Gly	Gly	Tyr	Tyr	Ala	Phe	Tyr	Thr	Thr	Pro		
		675					680					685			

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tgttgtcttc tttgcctagg ttgccaaaaa gatgtttgcc ttccaccttg atgcacctg 2181

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caaacctagc atttttaaaa aataagatta atggaagact ttaaggtatt ttaaaattcg 2301

aagggtatcc aaggttctgt atttatttat tggggagaca ctaacccttc aaagaagcag 2361

gctgtgaaca ttgggtgccc agtgctatca gatgagttaa aacctttgat tctcatttct 2421

atttgtaa at tcttaagcaa atagaagccg agtgттаagg tgttttgctt ctgaaagagg 2481

gctgtgcctt ccgtttcaga aggagacatt ttgctgttac attctgccag gggcaaaaga 2541

tactaggccc aggagtcaag aaaagctttt gtgaaagtga tagtttcacc tgactttgat 2601

tccttaaccc ccggcttttg gaacaagcca tgtttgccct agtccaggat tgcctcactt 2661

gagacttgct aggcctctgc tgtgtgctgg ggtggccagt gggactcagg agagagcaag 2721

ctaaggagtc accaaaaaaaaa aaaaaaaaaa aaaaaa 2756

<210> 34

<211> 686

<212> PRT

<213> Homo sapiens

<400> 34

Met Gln Leu Gly Glu Gln Leu Leu Val Ser Ser Val Asn Leu Pro Gly
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Ala His Phe Tyr Pro Leu Glu Ser Ala Arg Gly Gly Ser Gly Gly Ser
 20 25 30

Ala Gly His Leu Pro Ser Ala Ala Pro Ser Pro Gln Lys Leu Asp Leu
 35 40 45

Asp Lys Ala Ser Lys Lys Phe Ser Gly Ser Leu Ser Cys Glu Ala Val
 50 55 60

Ser Gly Glu Pro Ala Ala Ala Ser Ala Gly Ala Pro Ala Ala Met Leu
 65 70 75 80

Ser Asp Thr Asp Ala Gly Asp Ala Phe Ala Ser Ala Ala Ala Val Ala
 85 90 95

Lys Pro Gly Pro Pro Asp Gly Arg Lys Gly Ser Pro Cys Gly Glu Glu
 100 105 110

Glu Leu Pro Ser Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala Ala
 115 120 125

Ala Ala Thr Ala Arg Tyr Ser Met Asp Ser Leu Ser Ser Glu Arg Tyr
 130 135 140

Tyr Leu Gln Ser Pro Gly Pro Gln Gly Ser Glu Leu Ala Ala Pro Cys
 145 150 155 160

Ser Leu Phe Pro Tyr Gln Ala Ala Ala Gly Ala Pro His Gly Pro Val
 165 170 175

Tyr Pro Ala Pro Asn Gly Ala Arg Tyr Pro Tyr Gly Ser Met Leu Pro
 180 185 190

Pro Gly Gly Phe Pro Ala Ala Val Cys Pro Pro Gly Arg Ala Gln Phe
 195 200 205

Gly Pro Gly Ala Gly Ala Gly Ser Gly Ala Gly Gly Ser Ser Gly Gly
 210 215 220

Gly Gly Gly Pro Gly Thr Tyr Gln Tyr Ser Gln Gly Ala Pro Leu Tyr
 225 230 235 240

Gly Pro Tyr Pro Gly Ala Ala Ala Ala Gly Ser Cys Gly Gly Leu Gly
 245 250 255

Gly Leu Gly Val Pro Gly Ser Gly Phe Arg Ala His Val Tyr Leu Cys
 260 265 270

Asn Arg Pro Leu Trp Leu Lys Phe His Arg His Gln Thr Glu Met Ile
 275 280 285

Ile Thr Lys Gln Gly Arg Arg Met Phe Pro Phe Leu Ser Phe Asn Ile
 290 295 300

Asn Gly Leu Asn Pro Thr Ala His Tyr Asn Val Phe Val Glu Val Val
 305 310 315 320

Leu Ala Asp Pro Asn His Trp Arg Phe Gln Gly Gly Lys Trp Val Thr
 325 330 335

Cys Gly Lys Ala Asp Asn Asn Met Gln Gly Asn Lys Met Tyr Val His
 340 345 350

Pro Glu Ser Pro Asn Thr Gly Ser His Trp Met Arg Gln Glu Ile Ser
 355 360 365

Phe Gly Lys Leu Lys Leu Thr Asn Asn Lys Gly Ala Asn Asn Asn Asn
 370 375 380

Thr Gln Met Ile Val Leu Gln Ser Leu His Lys Tyr Gln Pro Arg Leu
 385 390 395 400

His Ile Val Glu Val Thr Glu Asp Gly Val Glu Asp Leu Asn Glu Pro
 405 410 415

Ser Lys Thr Gln Thr Phe Thr Phe Ser Glu Thr Gln Phe Ile Ala Val
 420 425 430

Thr Ala Tyr Gln Asn Thr Asp Ile Thr Gln Leu Lys Ile Asp His Asn
 435 440 445

Pro Phe Ala Lys Gly Phe Arg Asp Asn Tyr Asp Ser Ser His Gln Ile
 450 455 460

Val Pro Gly Gly Arg Tyr Gly Val Gln Ser Phe Phe Pro Glu Pro Phe
 465 470 475 480

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

Pro Gln Thr Asn Gly Leu Leu Ser Pro Gln Gln Ser Glu Glu Val Ala
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Asn Pro Pro Gln Arg Trp Leu Val Thr Pro Val Gln Gln Pro Gly Thr

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Asn Lys Leu Asp Ile Ser Ser Tyr Glu Ser Glu Tyr Thr Ser Ser Thr			
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Leu Leu Pro Tyr Gly Ile Lys Ser Leu Pro Leu Gln Thr Ser His Ala			
545	550	555	560
Leu Gly Tyr Tyr Pro Asp Pro Thr Phe Pro Ala Met Ala Gly Trp Gly			
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Gly Arg Gly Ser Tyr Gln Arg Lys Met Ala Ala Gly Leu Pro Trp Thr			
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Ser Arg Thr Ser Pro Thr Val Phe Ser Glu Asp Gln Leu Ser Lys Glu			
	595	600	605
Lys Val Lys Glu Glu Ile Gly Ser Ser Trp Ile Glu Thr Pro Pro Ser			
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Ile Lys Ser Leu Asp Ser Asn Asp Ser Gly Val Tyr Thr Ser Ala Cys			
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Lys Arg Arg Arg Leu Ser Pro Ser Asn Ser Ser Asn Glu Asn Ser Pro			
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	Met Thr Thr Glu Ser Gly Ser Asp Ser		
	1	5	
gaa tcc aag ccg gac cag gag gcc gag ccc cag gag gcg gcg ggg gcg			161
Glu Ser Lys Pro Asp Gln Glu Ala Glu Pro Gln Glu Ala Ala Gly Ala			
10	15	20	25

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cag cag gcc ctg gag cag ttc gcc gcc gct gca gcg cac agc acc ccg Gln Gln Ala Leu Glu Gln Phe Ala Ala Ala Ala His Ser Thr Pro 45 50 55	257
gtg cgg agg gag gtc act gac aag gaa cag gag ttt gct gcc agg gct Val Arg Arg Glu Val Thr Asp Lys Glu Gln Glu Phe Ala Ala Arg Ala 60 65 70	305
gca aaa cag ctc gaa tat cag caa tta gaa gac gat aaa ctt tct cag Ala Lys Gln Leu Glu Tyr Gln Gln Leu Glu Asp Asp Lys Leu Ser Gln 75 80 85	353
aaa tca tct agc agt aaa ctc tct cgg tct cca tta aag att gtc aaa Lys Ser Ser Ser Ser Lys Leu Ser Arg Ser Pro Leu Lys Ile Val Lys 90 95 100 105	401
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tat acc tgt gat gta gag aaa cgc tcc aga gga caa gtg ctg ttt gat Tyr Thr Cys Asp Val Glu Lys Arg Ser Arg Gly Gln Val Leu Phe Asp 125 130 135	497
aaa gtg tgt gaa cac ttg aac ttg cta gag aaa gac tac ttt ggg ctt Lys Val Cys Glu His Leu Asn Leu Leu Glu Lys Asp Tyr Phe Gly Leu 140 145 150	545
acg tat cga gat gct gaa aac cag aag aat tgg ttg gac cct gct aag Thr Tyr Arg Asp Ala Glu Asn Gln Lys Asn Trp Leu Asp Pro Ala Lys 155 160 165	593
gaa ata aaa aaa cag gtt cga agt ggt gct tgg cac ttt tca ttt aat Glu Ile Lys Lys Gln Val Arg Ser Gly Ala Trp His Phe Ser Phe Asn 170 175 180 185	641
gtg aaa ttt tat cca cca gac cct gcc caa cta tct gaa gat atc acc Val Lys Phe Tyr Pro Pro Asp Pro Ala Gln Leu Ser Glu Asp Ile Thr 190 195 200	689
agg tac tac ctc tgc ttg cag ttg cga gat gac atc gtg tcc gga agg Arg Tyr Tyr Leu Cys Leu Gln Leu Arg Asp Asp Ile Val Ser Gly Arg 205 210 215	737
ctg ccc tgc tcc ttt gtt acc ctg gcc ttg ctg ggc tcc tac act gtc Leu Pro Cys Ser Phe Val Thr Leu Ala Leu Leu Gly Ser Tyr Thr Val 220 225 230	785
cag tca gag ctc gga gac tat gac cca gat gaa tgt ggg agc gat tac Gln Ser Glu Leu Gly Asp Tyr Asp Pro Asp Glu Cys Gly Ser Asp Tyr 235 240 245	833
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Ala	Glu	Met	His	Phe	Leu	Glu	Asn	Ala	Lys	Lys	Leu	Ser	Met	Tyr	Gly				
				285				290				295							
gta	gat	tta	cat	cat	gct	aag	gac	tca	gaa	ggg	gta	gaa	att	atg	tta	1025			
Val	Asp	Leu	His	His	Ala	Lys	Asp	Ser	Glu	Gly	Val	Glu	Ile	Met	Leu				
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gga	gtt	tgt	gca	agt	ggg	ctg	ttg	ata	tat	cgc	gac	cgg	ctg	cga	ata	1073			
Gly	Val	Cys	Ala	Ser	Gly	Leu	Leu	Ile	Tyr	Arg	Asp	Arg	Leu	Arg	Ile				
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Asn	Arg	Phe	Ala	Trp	Pro	Lys	Val	Leu	Lys	Ile	Ser	Tyr	Lys	Arg	Asn				
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aac	ttt	tac	att	aag	atc	cgg	ccg	gga	gag	ttt	gaa	caa	ttt	gaa	agc	1169			
Asn	Phe	Tyr	Ile	Lys	Ile	Arg	Pro	Gly	Glu	Phe	Glu	Gln	Phe	Glu	Ser				
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acc	att	ggg	ttt	aag	ctg	cca	aac	cat	cga	gct	gcc	aag	cgt	tta	tgg	1217			
Thr	Ile	Gly	Phe	Lys	Leu	Pro	Asn	His	Arg	Ala	Ala	Lys	Arg	Leu	Trp				
				365				370				375							
aaa	gta	tgt	gtt	gag	cat	cat	aca	ttt	ttc	aga	cta	ctg	tta	cca	gaa	1265			
Lys	Val	Cys	Val	Glu	His	His	Thr	Phe	Phe	Arg	Leu	Leu	Leu	Pro	Glu				
				380				385				390							
gca	cct	ccc	aag	aaa	ttc	cta	acc	ttg	ggg	tcc	aag	ttt	cgt	tat	agt	1313			
Ala	Pro	Pro	Lys	Lys	Phe	Leu	Thr	Leu	Gly	Ser	Lys	Phe	Arg	Tyr	Ser				
				395				400				405							
ggc	agg	aca	caa	gcg	caa	acg	aga	aga	gcc	agt	gcg	ttg	ata	gat	cgc	1361			
Gly	Arg	Thr	Gln	Ala	Gln	Thr	Arg	Arg	Ala	Ser	Ala	Leu	Ile	Asp	Arg				
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cca	gca	cct	tac	ttt	gaa	cgc	tca	tcc	agc	aaa	cgt	tat	acc	atg	tct	1409			
Pro	Ala	Pro	Tyr	Phe	Glu	Arg	Ser	Ser	Ser	Lys	Arg	Tyr	Thr	Met	Ser				
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cgc	agc	ttg	gat	gga	gag	gtt	ggg	act	ggc	cag	tac	gcc	aca	aca	aaa	1457			
Arg	Ser	Leu	Asp	Gly	Glu	Val	Gly	Thr	Gly	Gln	Tyr	Ala	Thr	Thr	Lys				
				445				450				455							
ggc	atc	tct	cag	acc	aac	ttg	atc	acc	act	gtg	act	ccg	gag	aag	aag	1505			
Gly	Ile	Ser	Gln	Thr	Asn	Leu	Ile	Thr	Thr	Val	Thr	Pro	Glu	Lys	Lys				
				460				465				470							
gct	gag	gag	gag	cgg	gac	gag	gaa	gag	gac	aaa	cgg	agg	aag	ggg	gaa	1553			
Ala	Glu	Glu	Glu	Arg	Asp	Glu	Glu	Glu	Asp	Lys	Arg	Arg	Lys	Gly	Glu				
				475				480				485							
gaa	gtc	acg	ccc	atc	tcg	gcc	atc	cgg	cac	gag	gga	aag	tca	cct	ggg	1601			
Glu	Val	Thr	Pro	Ile	Ser	Ala	Ile	Arg	His	Glu	Gly	Lys	Ser	Pro	Gly				
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ctt	ggc	act	gac	tca	tgt	ccc	ttg	tca	ccc	cca	tcc	acc	cat	tgt	gcc	1649			
Leu	Gly	Thr	Asp	Ser	Cys	Pro	Leu	Ser	Pro	Pro	Ser	Thr	His	Cys	Ala				
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ccc	aca	tct	ccc	aca	gag	ctc	cgt	agg	agg	tgt	aag	gag	aat	gac	tgc	1697			

Pro	Thr	Ser	Pro	Thr	Glu	Leu	Arg	Arg	Arg	Cys	Lys	Glu	Asn	Asp	Cys	
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Lys	Leu	Pro	Gly	Tyr	Glu	Pro	Ser	Arg	Ala	Glu	His	Leu	Pro	Gly	Glu	
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ccc	gcc	ttg	gac	tct	gat	ggc	cca	ggg	agg	cct	tac	cta	ggg	gat	caa	1793
Pro	Ala	Leu	Asp	Ser	Asp	Gly	Pro	Gly	Arg	Pro	Tyr	Leu	Gly	Asp	Gln	
	555					560					565					
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Asp	Val	Ala	Phe	Ser	Tyr	Arg	Gln	Gln	Thr	Gly	Lys	Gly	Thr	Thr	Leu	
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ttc	tcc	ttc	tcc	ttg	cag	ctc	cct	gag	tca	ttc	ccc	tcc	ctc	cta	gat	1889
Phe	Ser	Phe	Ser	Leu	Gln	Leu	Pro	Glu	Ser	Phe	Pro	Ser	Leu	Leu	Asp	
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gat	gat	gga	tac	ctc	tct	ttc	ccc	aac	ctt	tct	gaa	acc	aac	ctc	ctg	1937
Asp	Asp	Gly	Tyr	Leu	Ser	Phe	Pro	Asn	Leu	Ser	Glu	Thr	Asn	Leu	Leu	
			605					610					615			
ccc	cag	agc	ttg	cag	cat	tac	ctc	ccg	atc	cgc	tca	ccg	tcc	ctt	gtg	1985
Pro	Gln	Ser	Leu	Gln	His	Tyr	Leu	Pro	Ile	Arg	Ser	Pro	Ser	Leu	Val	
		620					625					630				
ccc	tgt	ttc	ctc	ttc	atc	ttt	ttc	ttt	ctg	ctg	tct	gcc	tcc	ttc	tca	2033
Pro	Cys	Phe	Leu	Phe	Ile	Phe	Phe	Phe	Leu	Leu	Ser	Ala	Ser	Phe	Ser	
	635					640					645					
gtg	cca	tac	gct	ctc	act	ctc	tcc	ttc	cct	ctg	gct	ctg	tgc	ctc	tgc	2081
Val	Pro	Tyr	Ala	Leu	Thr	Leu	Ser	Phe	Pro	Leu	Ala	Leu	Cys	Leu	Cys	
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tac	ctg	gag	ccc	aag	gcg	gcc	tcc	ttg	agc	gcc	tcc	cta	gac	aat	gac	2129
Tyr	Leu	Glu	Pro	Lys	Ala	Ala	Ser	Leu	Ser	Ala	Ser	Leu	Asp	Asn	Asp	
				670				675						680		
ccg	agt	gac	agt	tca	gag	gaa	gag	act	gac	agt	gag	cgc	acg	gac	acc	2177
Pro	Ser	Asp	Ser	Ser	Glu	Glu	Glu	Thr	Asp	Ser	Glu	Arg	Thr	Asp	Thr	
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gca	gcc	gac	ggg	gag	acc	acc	gcc	act	gag	tcg	gac	cag	gag	gaa	gat	2225
Ala	Ala	Asp	Gly	Glu	Thr	Thr	Ala	Thr	Glu	Ser	Asp	Gln	Glu	Glu	Asp	
		700					705					710				
gca	gag	ctc	aag	gca	cag	gag	cta	gaa	aaa	act	caa	gat	gac	ctg	atg	2273
Ala	Glu	Leu	Lys	Ala	Gln	Glu	Leu	Glu	Lys	Thr	Gln	Asp	Asp	Leu	Met	
	715					720					725					
aaa	cat	caa	acc	aac	att	agc	gag	ctg	aaa	aga	acc	ttc	tta	gaa	acc	2321
Lys	His	Gln	Thr	Asn	Ile	Ser	Glu	Leu	Lys	Arg	Thr	Phe	Leu	Glu	Thr	
730				735						740					745	
tca	aca	gac	act	gcc	gta	acg	aat	gaa	tgg	gag	aag	agg	ctt	tcc	acc	2369
Ser	Thr	Asp	Thr	Ala	Val	Thr	Asn	Glu	Trp	Glu	Lys	Arg	Leu	Ser	Thr	
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tcc	ccc	gtg	cga	ctg	gcc	gcc	agg	cag	gag	gat	gcc	ccc	atg	atc	gaa	2417
Ser	Pro	Val	Arg	Leu	Ala	Ala	Arg	Gln	Glu	Asp	Ala	Pro	Met	Ile	Glu	
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cca ctt gtc cct gaa gag act aag cag tct tct ggg gaa aag ctc atg	2465
Pro Leu Val Pro Glu Glu Thr Lys Gln Ser Ser Gly Glu Lys Leu Met	
780 785 790	
gat ggc tct gaa atc ttc agt tta tta gag tct gcg cga aaa cca aca	2513
Asp Gly Ser Glu Ile Phe Ser Leu Leu Glu Ser Ala Arg Lys Pro Thr	
795 800 805	
gaa ttc ata gga ggg gtt act tct act tct caa agc tgg gtt cag aaa	2561
Glu Phe Ile Gly Gly Val Thr Ser Thr Ser Gln Ser Trp Val Gln Lys	
810 815 820 825	
atg gaa acc aag acg gag tcc agt gga ata gag acg gaa ccc acc gtg	2609
Met Glu Thr Lys Thr Glu Ser Ser Gly Ile Glu Thr Glu Pro Thr Val	
830 835 840	
cac cac ctg ccg ctt agc act gag aag gtg gtg cag gag acc gtg ttg	2657
His His Leu Pro Leu Ser Thr Glu Lys Val Val Gln Glu Thr Val Leu	
845 850 855	
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Val Glu Glu Arg Arg Val Val His Ala Ser Gly Asp Ala Ser Tyr Ser	
860 865 870	
gcg gga gac agc ggg gat gct gca gca cag ccc gca ttc aca ggc att	2753
Ala Gly Asp Ser Gly Asp Ala Ala Ala Gln Pro Ala Phe Thr Gly Ile	
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aaa ggg aaa gag ggc tct gcc ttg acg gag ggg gct aaa gag gaa gga	2801
Lys Gly Lys Glu Gly Ser Ala Leu Thr Glu Gly Ala Lys Glu Glu Gly	
890 895 900 905	
ggg gag gag gtc gct aaa gct gtc ctg gaa cag gaa gag aca gcc gct	2849
Gly Glu Glu Val Ala Lys Ala Val Leu Glu Gln Glu Glu Thr Ala Ala	
910 915 920	
gct tcc cgt gag cga caa gag gag cag agt gca gcc atc cac att tca	2897
Ala Ser Arg Glu Arg Gln Glu Glu Gln Ser Ala Ala Ile His Ile Ser	
925 930 935	
gaa act ttg gaa caa aaa cct cat ttt gag tcc tca acg gtg aag acg	2945
Glu Thr Leu Glu Gln Lys Pro His Phe Glu Ser Ser Thr Val Lys Thr	
940 945 950	
gaa acc atc agt ttt ggc agt gtt tca ccg gga gga gta aag cta gaa	2993
Glu Thr Ile Ser Phe Gly Ser Val Ser Pro Gly Gly Val Lys Leu Glu	
955 960 965	
att tcc acg aag gaa gtg cca gta gtt cac acc gaa acc aaa acc atc	3041
Ile Ser Thr Lys Glu Val Pro Val Val His Thr Glu Thr Lys Thr Ile	
970 975 980 985	
aca tat gaa tca tca cag gtc gat cca ggc aca gat ctg gag cca ggc	3089
Thr Tyr Glu Ser Ser Gln Val Asp Pro Gly Thr Asp Leu Glu Pro Gly	
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Val Leu Met Ser Ala Gln Thr Ile Thr Ser Glu Thr Thr Ser Thr	
1005 1010 1015	
acc acc act acg cac atc acc aaa act gtg aaa ggg ggc att tca	3179
Thr Thr Thr Thr His Ile Thr Lys Thr Val Lys Gly Gly Ile Ser	
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Glu Thr Arg Ile	Glu Lys Arg Ile Val	Ile Thr Gly Asp Ala Asp				
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Glu Gln His Pro	Asp Met Ser Val Thr	Lys Val Val Val His Lys				
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Glu Thr Glu Ile	Thr Pro Glu Asp Gly	Glu Asp				
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Val	Pro	Glu	Pro	Pro	Lys	Glu	Glu	Gln	Gln	Gln	Ala	Leu	Glu	Gln	Phe	35	40	45	
Ala	Ala	Ala	Ala	Ala	His	Ser	Thr	Pro	Val	Arg	Arg	Glu	Val	Thr	Asp	50	55	60	
Lys	Glu	Gln	Glu	Phe	Ala	Ala	Arg	Ala	Ala	Lys	Gln	Leu	Glu	Tyr	Gln	65	70	75	80
Gln	Leu	Glu	Asp	Asp	Lys	Leu	Ser	Gln	Lys	Ser	Ser	Ser	Ser	Lys	Leu	85	90	95	
Ser	Arg	Ser	Pro	Leu	Lys	Ile	Val	Lys	Lys	Pro	Lys	Ser	Met	Gln	Cys	100	105	110	
Lys	Val	Ile	Leu	Leu	Asp	Gly	Ser	Glu	Tyr	Thr	Cys	Asp	Val	Glu	Lys	115	120	125	
Arg	Ser	Arg	Gly	Gln	Val	Leu	Phe	Asp	Lys	Val	Cys	Glu	His	Leu	Asn	130	135	140	
Leu	Leu	Glu	Lys	Asp	Tyr	Phe	Gly	Leu	Thr	Tyr	Arg	Asp	Ala	Glu	Asn	145	150	155	160
Gln	Lys	Asn	Trp	Leu	Asp	Pro	Ala	Lys	Glu	Ile	Lys	Lys	Gln	Val	Arg	165	170	175	
Ser	Gly	Ala	Trp	His	Phe	Ser	Phe	Asn	Val	Lys	Phe	Tyr	Pro	Pro	Asp	180	185	190	
Pro	Ala	Gln	Leu	Ser	Glu	Asp	Ile	Thr	Arg	Tyr	Tyr	Leu	Cys	Leu	Gln	195	200	205	
Leu	Arg	Asp	Asp	Ile	Val	Ser	Gly	Arg	Leu	Pro	Cys	Ser	Phe	Val	Thr	210	215	220	
Leu	Ala	Leu	Leu	Gly	Ser	Tyr	Thr	Val	Gln	Ser	Glu	Leu	Gly	Asp	Tyr	225	230	235	240
Asp	Pro	Asp	Glu	Cys	Gly	Ser	Asp	Tyr	Ile	Ser	Glu	Phe	Arg	Phe	Ala	245	250	255	

Pro Asn His Thr Lys Glu Leu Glu Asp Lys Val Ile Glu Leu His Lys
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Ser His Arg Gly Met Thr Pro Ala Glu Ala Glu Met His Phe Leu Glu
 275 280 285

Asn Ala Lys Lys Leu Ser Met Tyr Gly Val Asp Leu His His Ala Lys
 290 295 300

Asp Ser Glu Gly Val Glu Ile Met Leu Gly Val Cys Ala Ser Gly Leu
 305 310 315 320

Leu Ile Tyr Arg Asp Arg Leu Arg Ile Asn Arg Phe Ala Trp Pro Lys
 325 330 335

Val Leu Lys Ile Ser Tyr Lys Arg Asn Asn Phe Tyr Ile Lys Ile Arg
 340 345 350

Pro Gly Glu Phe Glu Gln Phe Glu Ser Thr Ile Gly Phe Lys Leu Pro
 355 360 365

Asn His Arg Ala Ala Lys Arg Leu Trp Lys Val Cys Val Glu His His
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Thr Phe Phe Arg Leu Leu Leu Pro Glu Ala Pro Pro Lys Lys Phe Leu
 385 390 395 400

Thr Leu Gly Ser Lys Phe Arg Tyr Ser Gly Arg Thr Gln Ala Gln Thr
 405 410 415

Arg Arg Ala Ser Ala Leu Ile Asp Arg Pro Ala Pro Tyr Phe Glu Arg
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Ser Ser Ser Lys Arg Tyr Thr Met Ser Arg Ser Leu Asp Gly Glu Val
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Gly Thr Gly Gln Tyr Ala Thr Thr Lys Gly Ile Ser Gln Thr Asn Leu
 450 455 460

Ile Thr Thr Val Thr Pro Glu Lys Lys Ala Glu Glu Glu Arg Asp Glu
 465 470 475 480

Glu Glu Asp Lys Arg Arg Lys Gly Glu Glu Val Thr Pro Ile Ser Ala
 485 490 495

Ile Arg His Glu Gly Lys Ser Pro Gly Leu Gly Thr Asp Ser Cys Pro
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Leu Ser Pro Pro Ser Thr His Cys Ala Pro Thr Ser Pro Thr Glu Leu
 515 520 525

Arg Arg Arg Cys Lys Glu Asn Asp Cys Lys Leu Pro Gly Tyr Glu Pro
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 cagcattttt ttccttagcc tctgtttgcc actctgggta tctctcctat gggcaaagcc 6261
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 aactttcttt aaaaaaaaaa aaaaaagatt ttggagacta ccagggttaag attccaactt 6501
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 aggacatcat tgacttaata atagtatcag tcggtgcaac agttggcaac atgtgccttc 6741
 acactttacc ataaagagac gggtttgagg gtttgcttc taaagtctgc aacttcaaga 6801
 aaaaaaatcg acactgtgga ttgactttcc cggtcactat ataaagcaaa taaacttaaa 6861
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Ser Arg Gln Tyr Ser Val Ala Phe Cys Asn His Val Arg Thr Glu Val
 35 40 45

Glu Gln Gln Arg Asp Leu Thr Ser Gln Phe Leu Lys Thr Lys Pro Pro
 50 55 60

Leu Ala Pro Gly Thr Ile Leu Tyr Glu Ala Glu Leu Ser Gln Phe Ser
 65 70 75 80

Glu Asp Ile Lys Lys Trp Lys Glu Arg Tyr Val Val Val Lys Asn Asp
 85 90 95

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

Ala Pro Lys Cys Arg Ile Leu Pro Ala Gly Gly Lys Val Leu Thr Ser
 115 120 125

Glu Asp Glu Tyr Asn Leu Leu Ser Asp Arg His Phe Pro Asp Pro Leu
 130 135 140

Ala Ser Ser Glu Lys Glu Asn Thr Gln Pro Phe Val Val Leu Pro Lys
 145 150 155 160

Glu Phe Pro Val Tyr Leu Trp Gln Pro Phe Phe Arg His Gly Tyr Phe
 165 170 175

Cys Phe His Glu Ala Ala Asp Gln Lys Arg Phe Ser Ala Leu Leu Ser
 180 185 190

Asp Cys Val Arg His Leu Asn His Asp Tyr Met Lys Gln Met Thr Phe
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Glu Ala Gln Ala Phe Leu Glu Ala Val Gln Phe Phe Arg Gln Glu Lys
 210 215 220

Gly His Tyr Gly Ser Trp Glu Met Ile Thr Gly Asp Glu Ile Gln Ile
 225 230 235 240

Leu Ser Asn Leu Val Met Glu Glu Leu Leu Pro Thr Leu Gln Thr Asp
 245 250 255

Leu Leu Pro Lys Met Lys Gly Lys Lys Asn Asp Arg Lys Arg Thr Trp
 260 265 270

Leu Gly Leu Leu Glu Glu Ala Tyr Thr Leu Val Gln His Gln Val Ser
 275 280 285

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

Asn Tyr Leu Ile Gly Lys Ile Lys Ala Met Val Ala Gln Pro Ala Glu
 325 330 335

Lys Ser Cys Leu Glu Ser Val Gln Pro Phe Leu Ala Ser Ile Leu Glu
 340 345 350

Glu Leu Met Gly Pro Val Ser Ser Gly Phe Ser Glu Val Arg Val Leu
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Phe Glu Lys Glu Val Asn Glu Val Ser Gln Asn Phe Gln Thr Thr Lys
 370 375 380

Asp Ser Val Gln Leu Lys Glu His Leu Asp Arg Leu Met Asn Leu Pro
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Leu His Ser Val Lys Met Glu Pro Cys Tyr Thr Lys Val Asn Leu Leu
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His Glu Arg Leu Gln Asp Leu Lys Ser Arg Phe Arg Phe Pro His Ile
 420 425 430

Asp Leu Val Val Gln Arg Thr Gln Asn Tyr Met Gln Glu Leu Met Glu
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Asn Ala Val Phe Thr Phe Glu Gln Leu Leu Ser Pro His Leu Gln Gly
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Glu Ala Ser Lys Thr Ala Val Ala Ile Glu Lys Val Lys Leu Arg Val
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Leu Lys Gln Tyr Asp Tyr Asp Ser Ser Thr Ile Arg Lys Lys Ile Phe
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Gln Glu Ala Leu Val Gln Ile Thr Leu Pro Thr Val Gln Lys Ala Leu
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Ala Ser Thr Cys Lys Pro Glu Leu Gln Lys Tyr Glu Gln Phe Ile Phe
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Ala Asp His Thr Asn Met Ile His Val Glu Asn Val Tyr Glu Glu Ile
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Leu His Gln Ile Leu Leu Asp Glu Thr Leu Lys Val Ile Lys Glu Ala
 545 550 555 560

Ala Ile Leu Lys Lys His Asn Leu Phe Glu Asp Asn Met Ala Leu Pro
 565 570 575

Ser Glu Ser Val Ser Ser Leu Thr Asp Leu Lys Pro Pro Thr Gly Ser
 580 585 590

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

595		600		605
Leu Gly Ser Glu Thr Leu Ser Asn Glu Val Phe Gln Glu Ser Glu Glu	610	615	620	
Glu Lys Gln Pro Glu Val Pro Ser Ser Leu Ala Lys Gly Glu Ser Leu	625	630	635	640
Ser Leu Pro Gly Pro Ser Pro Pro Pro Asp Gly Thr Glu Gln Val Ile	645	650	655	
Ile Ser Arg Val Asp Asp Pro Val Val Asn Pro Val Ala Thr Glu Asp	660	665	670	
Thr Ala Gly Leu Pro Gly Thr Cys Ser Ser Glu Leu Glu Phe Gly Gly	675	680	685	
Thr Leu Glu Asp Glu Glu Pro Ala Gln Glu Glu Pro Glu Pro Ile Thr	690	695	700	
Ala Ser Gly Ser Leu Lys Ala Leu Arg Lys Leu Leu Thr Ala Ser Val	705	710	715	720
Glu Val Pro Val Asp Ser Ala Pro Val Met Glu Glu Asp Thr Asn Gly	725	730	735	
Glu Ser His Val Pro Gln Glu Asn Glu Glu Glu Glu Glu Lys Glu Pro	740	745	750	
Ser Gln Ala Ala Ala Ile His Pro Asp Asn Cys Glu Glu Ser Glu Val	755	760	765	
Ser Glu Arg Glu Ala Gln Pro Pro Cys Pro Glu Ala His Gly Glu Glu	770	775	780	
Leu Gly Gly Phe Pro Glu Val Gly Ser Pro Ala Ser Pro Pro Ala Ser	785	790	795	800
Gly Gly Leu Thr Glu Glu Pro Leu Gly Pro Met Glu Gly Glu Leu Pro	805	810	815	
Gly Glu Ala Cys Thr Leu Thr Ala His Glu Gly Arg Gly Gly Lys Cys	820	825	830	
Thr Glu Glu Gly Asp Ala Ser Gln Gln Glu Gly Cys Thr Leu Gly Ser	835	840	845	

Asp Pro Ile Cys Leu Ser Glu Ser Gln Val Ser Glu Glu Gln Glu Glu
850 855 860

Met Gly Gly Gln Ser Ser Ala Ala Gln Ala Thr Ala Ser Val Asn Ala
865 870 875 880

Glu Glu Ile Lys Val Ala Arg Ile His Glu Cys Gln Trp Val Val Glu
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ctg tgg gga ttg acc cag gag gct tca gtg gac ctc aag aac act ggc 96
Leu Trp Gly Leu Thr Gln Glu Ala Ser Val Asp Leu Lys Asn Thr Gly
20 25 30
aga gag gaa ttc ctc aca gcc ttc ctg cag aac tat cag ctg gcc tac 144
Arg Glu Glu Phe Leu Thr Ala Phe Leu Gln Asn Tyr Gln Leu Ala Tyr
35 40 45
agc aag gcc tac ccc cgc ctc ctt atc tcc agt ctg tca gag agc ccc 192
Ser Lys Ala Tyr Pro Arg Leu Leu Ile Ser Ser Leu Ser Glu Ser Pro
50 55 60
gct tca gtc tcc atc ctc agc cag gca gac aac acc tca aag aag gtc 240
Ala Ser Val Ser Ile Leu Ser Gln Ala Asp Asn Thr Ser Lys Lys Val
65 70 75 80
aca gtg agg ccc ggg gag tcg gtc atg gtc aac atc agt gcc aag gct 288
Thr Val Arg Pro Gly Glu Ser Val Met Val Asn Ile Ser Ala Lys Ala
85 90 95
gag atg ata ggc agc aag atc ttc cag cat gcg gtg gtg atc cat tct 336
Glu Met Ile Gly Ser Lys Ile Phe Gln His Ala Val Val Ile His Ser
100 105 110
gac tat gcc atc tct gtg cag gca cta aat gcc aag cct gac aca gcg 384
Asp Tyr Ala Ile Ser Val Gln Ala Leu Asn Ala Lys Pro Asp Thr Ala
115 120 125

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

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

625	630	635	640	
aag ctg gat gat ggg gac tac ctg tgt gag gat ggc tgc cag aac aac				1968
Lys Leu Asp Asp Gly Asp Tyr Leu Cys Glu Asp Gly Cys Gln Asn Asn	645	650	655	
tgt ccc gcc tgc acc cca ggc cag gcc caa cac tat gag ggc gac cga				2016
Cys Pro Ala Cys Thr Pro Gly Gln Ala Gln His Tyr Glu Gly Asp Arg	660	665	670	
ctc tgt ggc atg ctg acc aag ctc gat ggc ccc ttc gct gtc tgc cat				2064
Leu Cys Gly Met Leu Thr Lys Leu Asp Gly Pro Phe Ala Val Cys His	675	680	685	
gac acc ctg gac ccc agg ccc ttc ctg gag cag tgt gta tat gac ctg				2112
Asp Thr Leu Asp Pro Arg Pro Phe Leu Glu Gln Cys Val Tyr Asp Leu	690	695	700	
tgt gtg gtc ggt ggg gag cgg ctc agc ctg tgc cgt ggc ctc agc gcc				2160
Cys Val Val Gly Gly Glu Arg Leu Ser Leu Cys Arg Gly Leu Ser Ala	705	710	715	720
tat gcc cag gcc tgt ctg gag ctt ggc atc tcg gtt ggg gac tgg aga				2208
Tyr Ala Gln Ala Cys Leu Glu Leu Gly Ile Ser Val Gly Asp Trp Arg	725	730	735	
tca cca gcc aac tgc ccc ctg tcc tgc cct gcc aac agc cgc tat gag				2256
Ser Pro Ala Asn Cys Pro Leu Ser Cys Pro Ala Asn Ser Arg Tyr Glu	740	745	750	
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Leu Cys Gly Pro Ala Cys Pro Thr Ser Cys Asn Gly Ala Ala Ala Pro	755	760	765	
tcc aac tgc tcc ggg cgc ccc tgc gtg gag ggc tgc gtg tgc ctc cca				2352
Ser Asn Cys Ser Gly Arg Pro Cys Val Glu Gly Cys Val Cys Leu Pro	770	775	780	
ggc ttc gtg gcc agc ggc ggc gcc tgc gtg ccg gcc tcg tcg tgt ggc				2400
Gly Phe Val Ala Ser Gly Gly Ala Cys Val Pro Ala Ser Ser Cys Gly	785	790	795	800
tgc acc ttc cag ggt ctc cag ctc gct ccg ggc cag gaa gtg tgg gcg				2448
Cys Thr Phe Gln Gly Leu Gln Leu Ala Pro Gly Gln Glu Val Trp Ala	805	810	815	
gac gag ttg tgc caa agg cgc tgc acc tgc aac ggc gcc acc cat cag				2496
Asp Glu Leu Cys Gln Arg Arg Cys Thr Cys Asn Gly Ala Thr His Gln	820	825	830	
gtc acc tgc cgc gac aag cag agc tgc ccg gcg ggt gag cgc tgc agc				2544
Val Thr Cys Arg Asp Lys Gln Ser Cys Pro Ala Gly Glu Arg Cys Ser	835	840	845	
gtc cag aac ggc ctc ctg ggc tgc tac ccc gat cgc ttc ggg acc tgc				2592
Val Gln Asn Gly Leu Leu Gly Cys Tyr Pro Asp Arg Phe Gly Thr Cys	850	855	860	
cag ggg tcc ggg gac cca cac tat gtg agc ttc gac ggc cgg cgc ttc				2640
Gln Gly Ser Gly Asp Pro His Tyr Val Ser Phe Asp Gly Arg Arg Phe	865	870	875	880
gac ttc atg ggc acc tgc acg tac ctg ctg gtc ggc tca tgc ggc cag				2688

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Asn	Ala	Ala	Leu	Pro	Ala	Phe	Arg	Val	Leu	Val	Glu	Asn	Glu	His	Arg	
			900					905					910			
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Gly	Ser	Gln	Thr	Val	Ser	Tyr	Thr	Arg	Ala	Val	Arg	Val	Glu	Ala	Arg	
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Gly	Val	Lys	Val	Ala	Val	Arg	Arg	Glu	Tyr	Pro	Gly	Gln	Val	Leu	Val	
	930					935					940					
gat	gac	gtc	ctt	cag	tat	ctg	ccc	ttc	caa	gca	gca	gat	ggg	cag	gtg	2880
Asp	Asp	Val	Leu	Gln	Tyr	Leu	Pro	Phe	Gln	Ala	Ala	Asp	Gly	Gln	Val	
945					950					955					960	
cag	gtg	ttc	cga	cag	ggc	agg	gat	gcc	gtc	gtg	cgc	acg	gac	ttt	ggc	2928
Gln	Val	Phe	Arg	Gln	Gly	Arg	Asp	Ala	Val	Val	Arg	Thr	Asp	Phe	Gly	
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ctg	act	gtc	act	tat	gac	tgg	aat	gca	cga	gtg	act	gcc	aag	gtg	ccc	2976
Leu	Thr	Val	Thr	Tyr	Asp	Trp	Asn	Ala	Arg	Val	Thr	Ala	Lys	Val	Pro	
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agc	agc	tat	gct	gag	gcc	ctg	tgt	gga	ctc	tgt	ggg	aac	ttc	aac	ggg	3024
Ser	Ser	Tyr	Ala	Glu	Ala	Leu	Cys	Gly	Leu	Cys	Gly	Asn	Phe	Asn	Gly	
		995					1000					1005				
gac	cca	gct	gat	gac	ctg	gct	ctg	cgg	ggt	ggg	ggt	caa	gct	gcc		3069
Asp	Pro	Ala	Asp	Asp	Leu	Ala	Leu	Arg	Gly	Gly	Gly	Gln	Ala	Ala		
	1010					1015					1020					
aat	gca	ctg	gcc	ttt	ggg	aac	agc	tgg	caa	gaa	gag	acg	agg	ccc		3114
Asn	Ala	Leu	Ala	Phe	Gly	Asn	Ser	Trp	Gln	Glu	Glu	Thr	Arg	Pro		
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ggc	tgt	gga	gca	act	gaa	ccg	ggt	gac	tgt	ccc	aag	ctg	gac	tcc		3159
Gly	Cys	Gly	Ala	Thr	Glu	Pro	Gly	Asp	Cys	Pro	Lys	Leu	Asp	Ser		
	1040					1045					1050					
ctg	gtg	gcc	cag	cag	ctg	cag	agc	aag	aat	gag	tgt	gga	atc	ctt		3204
Leu	Val	Ala	Gln	Gln	Leu	Gln	Ser	Lys	Asn	Glu	Cys	Gly	Ile	Leu		
	1055					1060					1065					
gcc	gac	ccc	aag	ggg	ccc	ttc	cgg	gag	tgc	cat	agc	aag	ctg	gac		3249
Ala	Asp	Pro	Lys	Gly	Pro	Phe	Arg	Glu	Cys	His	Ser	Lys	Leu	Asp		
	1070					1075					1080					
ccc	cag	ggt	gcc	gtg	cgc	gac	tgt	gtc	tat	gac	cgc	tgc	ctg	ctg		3294
Pro	Gln	Gly	Ala	Val	Arg	Asp	Cys	Val	Tyr	Asp	Arg	Cys	Leu	Leu		
	1085					1090					1095					
cca	ggc	cag	tct	ggg	cca	ctg	tgt	gac	gca	ctg	gcc	acc	tat	gct		3339
Pro	Gly	Gln	Ser	Gly	Pro	Leu	Cys	Asp	Ala	Leu	Ala	Thr	Tyr	Ala		
	1100					1105					1110					
gct	gca	tgc	cag	gct	gct	gga	gcc	aca	gtg	cac	ccc	tgg	agg	agt		3384
Ala	Ala	Cys	Gln	Ala	Ala	Gly	Ala	Thr	Val	His	Pro	Trp	Arg	Ser		
	1115					1120					1125					

gaa Glu 1130	gaa Glu 1130	ctt Leu	tgc Cys	cca Pro	ctg Leu	agc Ser 1135	tgc Cys	cca Pro	ccc Pro	cac His	agc Ser 1140	cac His	tat Tyr	gag Glu	3429
gcg Ala 1145	tgt Cys 1145	tcc Ser	tac Tyr	ggc Gly	tgc Cys	ccg Pro 1150	ctg Leu	tcc Ser	tgt Cys	gga Gly	gac Asp 1155	ctc Leu	cca Pro	gtg Val	3474
ccc Pro 1160	ggg Gly 1160	ggc Gly	tgt Cys	ggc Gly	tca Ser	gaa Glu 1165	tgc Cys	cat His	gag Glu	ggc Gly	tgc Cys 1170	gtg Val	tgc Cys	gat Asp	3519
gag Glu 1175	ggc Gly 1175	ttt Phe	gcg Ala	ctc Leu	agt Ser	ggg Gly 1180	gag Glu	tcc Ser	tgc Cys	ctg Leu	ccc Pro 1185	ctg Leu	gcc Ala	tcc Ser	3564
tgt Cys 1190	ggc Gly 1190	tgc Cys	gta Val	cac His	cag Gln	ggc Gly 1195	acc Thr	tac Tyr	cac His	cca Pro	cca Pro 1200	ggc Gly	cag Gln	acc Thr	3609
ttc Phe 1205	tac Tyr 1205	cct Pro	ggc Gly	ccc Pro	gga Gly	tgt Cys 1210	gat Asp	tcc Ser	ctt Leu	tgc Cys	cac His 1215	tgc Cys	cag Gln	gag Glu	3654
ggc Gly 1220	ggc Gly 1220	ctg Leu	gtg Val	tcc Ser	tgt Cys	gag Glu 1225	tcc Ser	tcc Ser	agc Ser	tgc Cys	gga Gly 1230	ccg Pro	cac His	gag Glu	3699
gcc Ala 1235	tgc Cys 1235	cag Gln	cca Pro	tcc Ser	ggg Gly	ggc Gly 1240	agc Ser	ttg Leu	ggc Gly	tgt Cys	gtg Val 1245	gcc Ala	gtg Val	ggc Gly	3744
tct Ser 1250	agc Ser 1250	acc Thr	tgc Cys	cag Gln	gcg Ala	tca Ser 1255	gga Gly	gac Asp	ccc Pro	cac His	tac Tyr 1260	acc Thr	acc Thr	ttc Phe	3789
gat Asp 1265	ggc Gly 1265	cgc Arg	cgc Arg	ttc Phe	gac Asp	ttc Phe 1270	atg Met	ggc Gly	acc Thr	tgc Cys	gtg Val 1275	tat Tyr	gtg Val	ctg Leu	3834
gct Ala 1280	cag Gln 1280	acc Thr	tgc Cys	ggc Gly	acc Thr	cgg Arg 1285	cct Pro	ggc Gly	ctg Leu	cat His	cgg Arg 1290	ttt Phe	gcc Ala	gtc Val	3879
ctg Leu 1295	cag Gln 1295	gag Glu	aac Asn	gtg Val	gcc Ala	tgg Trp 1300	ggg Gly	aac Asn	ggg Gly	cga Arg	gtc Val 1305	agt Ser	gtg Val	acc Thr	3924
agg Arg 1310	gtg Val 1310	atc Ile	acg Thr	gtc Val	cag Gln	gtg Val 1315	gca Ala	aac Asn	ttc Phe	acc Thr	ctg Leu 1320	cgg Arg	ctg Leu	gag Glu	3969
cag Gln 1325	aga Arg 1325	cag Gln	tgg Trp	aag Lys	gtc Val	acg Thr 1330	gtg Val	aac Asn	ggg Gly	gtg Val	gac Asp 1335	atg Met	aag Lys	ctg Leu	4014
ccc Pro 1340	gtg Val 1340	gtg Val	ctg Leu	gcc Ala	aac Asn	ggc Gly 1345	cag Gln	atc Ile	cgt Arg	gcc Ala	tcc Ser 1350	cag Gln	cat His	ggg Gly	4059
tca Ser 1355	gat Asp 1355	gtt Val	gtg Val	att Ile	gag Glu	acc Thr 1360	gac Asp	ttc Phe	ggc Gly	ctg Leu	cgt Arg 1365	gtg Val	gcc Ala	tac Tyr	4104

gac Asp 1370	ctt Leu 1370	gtg Val	tac Tyr	tat Tyr	gtg Val	cgg Arg 1375	gtc Val	acc Thr	gtc Val	ccc Pro	gga Gly 1380	aac Asn	tac Tyr	tac Tyr	4149
cag Gln 1385	cag Gln 1385	atg Met	tgt Cys	ggc Gly	ctg Leu	tgt Cys 1390	ggg Gly	aac Asn	tac Tyr	aac Asn	ggc Gly 1395	gac Asp	ccc Pro	aag Lys	4194
gat Asp 1400	gac Asp 1400	ttc Phe	cag Gln	aag Lys	ccc Pro	aat Asn 1405	ggc Gly	tca Ser	cag Gln	gca Ala	ggc Gly 1410	aac Asn	gcc Ala	aat Asn	4239
gag Glu 1415	ttc Phe 1415	ggc Gly	aac Asn	tcc Ser	tgg Trp	gag Glu 1420	gag Glu	gtg Val	gtg Val	ccc Pro	gac Asp 1425	tct Ser	ccc Pro	tgc Cys	4284
ctg Leu 1430	ccg Pro 1430	ccc Pro	acc Thr	cct Pro	tgc Cys	ccg Pro 1435	ccg Pro	ggg Gly	agc Ser	gag Glu	gac Asp 1440	tgt Cys	atc Ile	ccc Pro	4329
agc Ser 1445	cac His 1445	aag Lys	tgt Cys	cct Pro	ccc Pro	gag Glu 1450	ctg Leu	gag Glu	aag Lys	aag Lys	tat Tyr 1455	cag Gln	aag Lys	gag Glu	4374
gag Glu 1460	ttc Phe 1460	tgt Cys	ggg Gly	ctc Leu	ctc Leu	tcc Ser 1465	agc Ser	ccc Pro	aca Thr	ggg Gly	cca Pro 1470	ctg Leu	tcc Ser	tcc Ser	4419
tgc Cys 1475	cac His 1475	aag Lys	ctg Leu	gtg Val	gat Asp	ccc Pro 1480	cag Gln	ggt Gly	ccc Pro	ttg Leu	aaa Lys 1485	gat Asp	tgc Cys	atc Ile	4464
ttt Phe 1490	gat Asp 1490	ctc Leu	tgc Cys	ctg Leu	ggt Gly	ggt Gly 1495	ggg Gly	aac Asn	ctg Leu	agc Ser	att Ile 1500	ctc Leu	tgc Cys	agc Ser	4509
aac Asn 1505	atc Ile 1505	cat His	gcc Ala	tac Tyr	gtg Val	agt Ser 1510	gct Ala	tgc Cys	cag Gln	gcg Ala	gct Ala 1515	gga Gly	ggc Gly	cac His	4554
gtg Val 1520	gag Glu 1520	ccc Pro	tgg Trp	agg Arg	act Thr	gaa Glu 1525	act Thr	ttc Phe	tgt Cys	ccc Pro	atg Met 1530	gag Glu	tgc Cys	cct Pro	4599
ccg Pro 1535	aac Asn 1535	agt Ser	cac His	tac Tyr	gag Glu	ctc Leu 1540	tgt Cys	gcg Ala	gac Asp	acc Thr	tgc Cys 1545	tcc Ser	ctg Leu	ggc Gly	4644
tgc Cys 1550	tca Ser 1550	gct Ala	ctc Leu	agt Ser	gcc Ala	cct Pro 1555	cca Pro	cag Gln	tgc Cys	cag Gln	gat Asp 1560	ggg Gly	tgt Cys	gct Ala	4689
gag Glu 1565	ggc Gly 1565	tgc Cys	cag Gln	tgt Cys	gac Asp	tcc Ser 1570	ggc Gly	ttc Phe	ctc Leu	tac Tyr	aat Asn 1575	ggc Gly	caa Gln	gcc Ala	4734
tgc Cys 1580	gtg Val 1580	ccc Pro	atc Ile	cag Gln	caa Gln	tgc Cys 1585	ggc Gly	tgc Cys	tac Tyr	cac His	aat Asn 1590	ggt Gly	gtc Val	tac Tyr	4779
tat Tyr	gag Glu	ccg Pro	gag Glu	cag Gln	aca Thr	gtc Val	ctc Leu	att Ile	gac Asp	aac Asn	tgt Cys	cgg Arg	cag Gln	cag Gln	4824

1595			1600			1605														
tgt	acg	tgc	cat	gcg	ggc	aaa	ggc	atg	gtg	tgc	cag	gaa	cac	agc				4869		
Cys	Thr	Cys	His	Ala	Gly	Lys	Gly	Met	Val	Cys	Gln	Glu	His	Ser						
	1610					1615					1620									
tgc	aag	ccg	ggg	cag	gtg	tgc	cag	ccc	tcc	gga	ggc	atc	ctg	agc				4914		
Cys	Lys	Pro	Gly	Gln	Val	Cys	Gln	Pro	Ser	Gly	Gly	Ile	Leu	Ser						
	1625					1630					1635									
tgc	gtc	acc	aaa	ggc	gct	gag	ctg	ggg	ttg	ggc	ctg	ggg	ctg	atg				4959		
Cys	Val	Thr	Lys	Gly	Ala	Glu	Leu	Gly	Leu	Gly	Leu	Gly	Leu	Met						
	1640					1645					1650									
cga	cta	ggg	atg	gag	gac	aag	gac	tct	ggg	gct	gag	ggc	ggc	gta				5004		
Arg	Leu	Gly	Met	Glu	Asp	Lys	Asp	Ser	Gly	Ala	Glu	Gly	Gly	Val						
	1655					1660					1665									
act	ggg	gtg	tcc	atg	gcg	gga	gta	acc	ctc	aga	tcc	ctg	gca	cag				5049		
Thr	Gly	Val	Ser	Met	Ala	Gly	Val	Thr	Leu	Arg	Ser	Leu	Ala	Gln						
	1670					1675					1680									
act	ggg	gta	gat	gtg	gag	gga	gcg	gcc	atc	ctt	tac	aat	ggg	cag				5094		
Thr	Gly	Val	Asp	Val	Glu	Gly	Ala	Ala	Ile	Leu	Tyr	Asn	Gly	Gln						
	1685					1690					1695									
ccc	ctc	aag	gtc	ctc	ctc	cct	ctt	ctg	tcc	cca	gac	ccg	tgc	cac				5139		
Pro	Leu	Lys	Val	Leu	Leu	Pro	Leu	Leu	Ser	Pro	Asp	Pro	Cys	His						
	1700					1705					1710									
ggc	gtg	aca	tgc	cgg	cca	cag	gag	aca	tgc	aag	gag	cag	ggc	ggc				5184		
Gly	Val	Thr	Cys	Arg	Pro	Gln	Glu	Thr	Cys	Lys	Glu	Gln	Gly	Gly						
	1715					1720					1725									
cag	ggc	gtg	tgc	ctg	ccc	aac	tat	gag	gcc	acg	tgc	tgg	ctg	tgg				5229		
Gln	Gly	Val	Cys	Leu	Pro	Asn	Tyr	Glu	Ala	Thr	Cys	Trp	Leu	Trp						
	1730					1735					1740									
ggc	gac	cca	cac	tac	cac	tcc	ttc	gat	ggc	cgg	aag	ttt	gac	ttc				5274		
Gly	Asp	Pro	His	Tyr	His	Ser	Phe	Asp	Gly	Arg	Lys	Phe	Asp	Phe						
	1745					1750					1755									
cag	ggc	acc	tgt	aac	tat	gtg	ctg	gca	aca	act	ggc	tgc	ccg	ggg				5319		
Gln	Gly	Thr	Cys	Asn	Tyr	Val	Leu	Ala	Thr	Thr	Gly	Cys	Pro	Gly						
	1760					1765					1770									
gtc	agc	acc	cag	ggc	ctg	aca	ccc	ttc	acc	gtc	acc	acc	aag	aac				5364		
Val	Ser	Thr	Gln	Gly	Leu	Thr	Pro	Phe	Thr	Val	Thr	Thr	Lys	Asn						
	1775					1780					1785									
cag	aac	cgg	ggc	aac	cct	gct	gtg	tcc	tac	gtg	aga	gtc	gtc	acc				5409		
Gln	Asn	Arg	Gly	Asn	Pro	Ala	Val	Ser	Tyr	Val	Arg	Val	Val	Thr						
	1790					1795					1800									
gtg	gct	gcc	ctc	ggc	acc	aac	atc	tcc	atc	cac	aag	gac	gag	atc				5454		
Val	Ala	Ala	Leu	Gly	Thr	Asn	Ile	Ser	Ile	His	Lys	Asp	Glu	Ile						
	1805					1810					1815									
ggc	aaa	gtc	cgg	gtg	aac	ggc	gtg	ctc	aca	gcc	ttg	cct	gtc	tcc				5499		
Gly	Lys	Val	Arg	Val	Asn	Gly	Val	Leu	Thr	Ala	Leu	Pro	Val	Ser						
	1820					1825					1830									
gtg	gcc	gac	ggg	cgg	att	tca	gtg	gcc	cag	ggc	gca	tcg	aag	gca				5544		

Val	Ala	Asp	Gly	Arg	Ile	Ser	Val	Ala	Gln	Gly	Ala	Ser	Lys	Ala	
	1835					1840					1845				
ctg	ctg	gtg	gct	gac	ttt	gga	ctg	caa	gtc	agc	tat	gac	tg	aac	5589
Leu	Leu	Val	Ala	Asp	Phe	Gly	Leu	Gln	Val	Ser	Tyr	Asp	Trp	Asn	
	1850					1855					1860				
tg	cg	gt	gac	gtg	acg	ctc	ccc	agc	agc	tat	cat	ggc	gca	gtg	5634
Trp	Arg	Val	Asp	Val	Thr	Leu	Pro	Ser	Ser	Tyr	His	Gly	Ala	Val	
	1865					1870					1875				
tg	gg	ctc	tg	gg	aac	atg	gac	cg	aac	ccc	aac	aat	gac	cag	5679
Cys	Gly	Leu	Cys	Gly	Asn	Met	Asp	Arg	Asn	Pro	Asn	Asn	Asp	Gln	
	1880					1885					1890				
gtc	ttc	cct	aat	ggc	aca	ctg	gct	ccc	tcc	ata	ccc	atc	tg	ggc	5724
Val	Phe	Pro	Asn	Gly	Thr	Leu	Ala	Pro	Ser	Ile	Pro	Ile	Trp	Gly	
	1895					1900					1905				
ggc	agc	tg	cg	gcc	cca	ggc	tg	gac	cca	ctg	tgt	tg	gac	gaa	5769
Gly	Ser	Trp	Arg	Ala	Pro	Gly	Trp	Asp	Pro	Leu	Cys	Trp	Asp	Glu	
	1910					1915					1920				
tgt	cg	gg	tcc	tg	cca	acg	tg	cct	gag	gac	cg	ttg	gag	cag	5814
Cys	Arg	Gly	Ser	Cys	Pro	Thr	Cys	Pro	Glu	Asp	Arg	Leu	Glu	Gln	
	1925					1930					1935				
tac	gag	ggc	cct	ggc	ttc	tg	gga	ccc	ctg	gca	tct	ggc	aca	gg	5859
Tyr	Glu	Gly	Pro	Gly	Phe	Cys	Gly	Pro	Leu	Ala	Ser	Gly	Thr	Gly	
	1940					1945					1950				
ggc	ccc	ttc	acc	acc	tg	cat	gct	cat	gtg	cca	cct	gag	agc	ttc	5904
Gly	Pro	Phe	Thr	Thr	Cys	His	Ala	His	Val	Pro	Pro	Glu	Ser	Phe	
	1955					1960					1965				
ttc	aag	ggc	tgt	gtt	ctg	gac	gtc	tg	atg	gg	gg	ggg	gac	cgt	5949
Phe	Lys	Gly	Cys	Val	Leu	Asp	Val	Cys	Met	Gly	Gly	Gly	Asp	Arg	
	1970					1975					1980				
gac	att	ctt	tg	aag	gct	ctg	gct	tcc	tac	gtg	gcc	gcc	tg	cag	5994
Asp	Ile	Leu	Cys	Lys	Ala	Leu	Ala	Ser	Tyr	Val	Ala	Ala	Cys	Gln	
	1985					1990					1995				
gcc	gct	ggg	gtt	gtc	atc	gaa	gac	tg	cg	gca	cag	gtt	ggc	tgt	6039
Ala	Ala	Gly	Val	Val	Ile	Glu	Asp	Trp	Arg	Ala	Gln	Val	Gly	Cys	
	2000					2005					2010				
gag	atc	acc	tg	cca	gaa	aac	agc	cac	tat	gag	gtc	tgt	ggc	cca	6084
Glu	Ile	Thr	Cys	Pro	Glu	Asn	Ser	His	Tyr	Glu	Val	Cys	Gly	Pro	
	2015					2020					2025				
ccc	tg	ccg	gcc	agc	tgt	ccg	tcc	cct	gca	ccc	ctt	acg	acg	cca	6129
Pro	Cys	Pro	Ala	Ser	Cys	Pro	Ser	Pro	Ala	Pro	Leu	Thr	Thr	Pro	
	2030					2035					2040				
gcc	gta	tgt	gag	ggc	ccc	tgt	gtg	gag	ggc	tg	cag	tg	gac	gcg	6174
Ala	Val	Cys	Glu	Gly	Pro	Cys	Val	Glu	Gly	Cys	Gln	Cys	Asp	Ala	
	2045					2050					2055				
gg	ttc	gtg	tta	agt	gct	gac	cg	tgt	gtt	ccc	ctc	aac	aac	ggc	6219
Gly	Phe	Val	Leu	Ser	Ala	Asp	Arg	Cys	Val	Pro	Leu	Asn	Asn	Gly	
	2060					2065					2070				

tgc ggc tgc tgg gcc aat ggc acc tac cac gag gcg ggc agt gag Cys Gly Cys Trp Ala Asn Gly Thr Tyr His Glu Ala Gly Ser Glu 2075 2080 2085	6264
ttt tgg gct gat ggc acc tgc tcc cag tgg tgt cgc tgc ggg cct Phe Trp Ala Asp Gly Thr Cys Ser Gln Trp Cys Arg Cys Gly Pro 2090 2095 2100	6309
ggg ggt ggc tcg ctg gtc tgc aca cct gcc agc tgt ggg ctg ggt Gly Gly Gly Ser Leu Val Cys Thr Pro Ala Ser Cys Gly Leu Gly 2105 2110 2115	6354
gaa gtg tgt ggc ctc ctg cca tcc ggc cag cac ggc tgc cag ccc Glu Val Cys Gly Leu Leu Pro Ser Gly Gln His Gly Cys Gln Pro 2120 2125 2130	6399
gtc agc aca gct gag tgc cag gcg tgg ggt gac ccc cat tac gtc Val Ser Thr Ala Glu Cys Gln Ala Trp Gly Asp Pro His Tyr Val 2135 2140 2145	6444
act ctg gat ggg cac cga ttc gat ttc caa ggc acc tgc gag tac Thr Leu Asp Gly His Arg Phe Asp Phe Gln Gly Thr Cys Glu Tyr 2150 2155 2160	6489
ctg ctg agt gca ccc tgc cac gga cca ccc ttg ggg gct gag aac Leu Leu Ser Ala Pro Cys His Gly Pro Pro Leu Gly Ala Glu Asn 2165 2170 2175	6534
ttc act gtc act gta gcc aat gag cac cgg ggc agc cag gct gtc Phe Thr Val Thr Val Ala Asn Glu His Arg Gly Ser Gln Ala Val 2180 2185 2190	6579
agc tac acc cgc agt gtc acc ctg caa atc tac aac cac agc ctg Ser Tyr Thr Arg Ser Val Thr Leu Gln Ile Tyr Asn His Ser Leu 2195 2200 2205	6624
aca ctg agt gcc cgc tgg ccc cgg aag cta cag gtc gac ggc gtg Thr Leu Ser Ala Arg Trp Pro Arg Lys Leu Gln Val Asp Gly Val 2210 2215 2220	6669
ttc gtg gct ctg cct ttc cag ctg gac tcg ctc ctg cac gca cac Phe Val Ala Leu Pro Phe Gln Leu Asp Ser Leu Leu His Ala His 2225 2230 2235	6714
ctg agc ggc gcc gac gtg gtg gtg acc aca acc tca ggg ctc tcg Leu Ser Gly Ala Asp Val Val Val Thr Thr Thr Ser Gly Leu Ser 2240 2245 2250	6759
ctg gct ttc gat ggg gac agc ttc gtg cgc ctg cgc gtg ccg gcg Leu Ala Phe Asp Gly Asp Ser Phe Val Arg Leu Arg Val Pro Ala 2255 2260 2265	6804
gcg tac gcg gcc tct ctc tgt ggc tta tgc ggg aac tac aac cag Ala Tyr Ala Ala Ser Leu Cys Gly Leu Cys Gly Asn Tyr Asn Gln 2270 2275 2280	6849
gac ccc gca gac gac ctg aag gct gtg ggc ggg aag ccc gct gga Asp Pro Ala Asp Asp Leu Lys Ala Val Gly Gly Lys Pro Ala Gly 2285 2290 2295	6894
tgg cag gtg ggc ggg gcc cag ggc tgc ggg gaa tgt gtg tcc aag Trp Gln Val Gly Gly Ala Gln Gly Cys Gly Glu Cys Val Ser Lys 2300 2305 2310	6939

cca tgc ccg tcg ccg tgc acc cca gag cag cag gag tcc ttc ggc Pro Cys Pro Ser Pro Cys Thr Pro Glu Gln Gln Glu Ser Phe Gly 2315 2320 2325	6984
ggc ccg gac gcc tgc ggc gtg atc tcc gcc acc gac ggc ccg ctg Gly Pro Asp Ala Cys Gly Val Ile Ser Ala Thr Asp Gly Pro Leu 2330 2335 2340	7029
gca ccc tgc cac ggc ctt gtg ccg ccc gcg cag tac ttc cag ggc Ala Pro Cys His Gly Leu Val Pro Pro Ala Gln Tyr Phe Gln Gly 2345 2350 2355	7074
tgc ttg ctg gac gcc tgc caa gtt cag ggc cat cct gga ggc ctc Cys Leu Leu Asp Ala Cys Gln Val Gln Gly His Pro Gly Gly Leu 2360 2365 2370	7119
tgt cct gca gtg gct acc tac gtg gca gcc tgt cag gcc gct ggg Cys Pro Ala Val Ala Thr Tyr Val Ala Ala Cys Gln Ala Ala Gly 2375 2380 2385	7164
gcc cag ctc ggc gag tgg agg cgg ccg gac ttc tgt ccc ttg cag Ala Gln Leu Gly Glu Trp Arg Arg Pro Asp Phe Cys Pro Leu Gln 2390 2395 2400	7209
tgc cct gcc cac agc cac tat gag ctc tgc ggt gac tcc tgc cct Cys Pro Ala His Ser His Tyr Glu Leu Cys Gly Asp Ser Cys Pro 2405 2410 2415	7254
gtg agc tgc ccg agc ctc tca gca ccc gag ggc tgt gag tcg gcc Val Ser Cys Pro Ser Leu Ser Ala Pro Glu Gly Cys Glu Ser Ala 2420 2425 2430	7299
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gac acc tgc gta ccc gtg ggc cag tgt ggc tgc ctc cat gat ggc Asp Thr Cys Val Pro Val Gly Gln Cys Gly Cys Leu His Asp Gly 2450 2455 2460	7389
cgc tac tac cca ctg ggc gag gtc ttc tac ccg ggc cct gag tgt Arg Tyr Tyr Pro Leu Gly Glu Val Phe Tyr Pro Gly Pro Glu Cys 2465 2470 2475	7434
gag ccg cgc tgt gag tgt ggg cca ggt ggc cat gtc acc tgc cag Glu Arg Arg Cys Glu Cys Gly Pro Gly Gly His Val Thr Cys Gln 2480 2485 2490	7479
gag ggc gca gcc tgt ggg ccc cat gag gag tgc ccg tta gag gat Glu Gly Ala Ala Cys Gly Pro His Glu Glu Cys Arg Leu Glu Asp 2495 2500 2505	7524
ggt gtc cag gcc tgt cat gcc aca ggc tgt ggc cgc tgc ctg gcc Gly Val Gln Ala Cys His Ala Thr Gly Cys Gly Arg Cys Leu Ala 2510 2515 2520	7569
aac ggg ggc atc cac tac atc acc ctt gat ggc cgt gtc tac gac Asn Gly Gly Ile His Tyr Ile Thr Leu Asp Gly Arg Val Tyr Asp 2525 2530 2535	7614
ctg cat ggc tcc tgc tcc tat gtc ttg gcc caa gtc tgc cac cca Leu His Gly Ser Cys Ser Tyr Val Leu Ala Gln Val Cys His Pro 2540 2545 2550	7659

2540		2545		2550	
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Lys Pro Gly Asp Glu Asp Phe Ser Ile Val Leu Glu Lys Asn Ala					
2555		2560		2565	
gct gga gat ctc caa cgc ctc ctg gtt act gtg gct ggc cag gtt	7749				
Ala Gly Asp Leu Gln Arg Leu Leu Val Thr Val Ala Gly Gln Val					
2570		2575		2580	
gtg agc cta gct cag ggg cag cag gtc acc gtg gac ggc gag gct	7794				
Val Ser Leu Ala Gln Gly Gln Gln Val Thr Val Asp Gly Glu Ala					
2585		2590		2595	
gtg gcc ctg cct gtg gct gtg ggc cgc gtg cgg gtg acc gcc gag	7839				
Val Ala Leu Pro Val Ala Val Gly Arg Val Arg Val Thr Ala Glu					
2600		2605		2610	
ggc cga aac atg gtt ctg cag acg acc aag ggg ctg cgg ctt ctc	7884				
Gly Arg Asn Met Val Leu Gln Thr Thr Lys Gly Leu Arg Leu Leu					
2615		2620		2625	
ttt gat ggc gat gcc cac ctc ctc atg tcc atc ccc agc ccc ttc	7929				
Phe Asp Gly Asp Ala His Leu Leu Met Ser Ile Pro Ser Pro Phe					
2630		2635		2640	
cgt gga cgg ctc tgt ggc ctc tgt ggg aac ttc aat ggc aac tgg	7974				
Arg Gly Arg Leu Cys Gly Leu Cys Gly Asn Phe Asn Gly Asn Trp					
2645		2650		2655	
agt gac gac ttt gtc ctg ccc aat ggc tca gca gcg tcc agt gtg	8019				
Ser Asp Asp Phe Val Leu Pro Asn Gly Ser Ala Ala Ser Ser Val					
2660		2665		2670	
gag acc ttc ggg gct gca tgg cgg gcg ccc ggc tcc tcc aag ggc	8064				
Glu Thr Phe Gly Ala Ala Trp Arg Ala Pro Gly Ser Ser Lys Gly					
2675		2680		2685	
tgt ggc gag ggc tgc ggg ccc caa ggc tgc cca gtg tgc ttg gca	8109				
Cys Gly Glu Gly Cys Gly Pro Gln Gly Cys Pro Val Cys Leu Ala					
2690		2695		2700	
gag gag act gca ccc tat gag agc aac gag gcc tgc ggg cag ctc	8154				
Glu Glu Thr Ala Pro Tyr Glu Ser Asn Glu Ala Cys Gly Gln Leu					
2705		2710		2715	
cgg aac ccc cag ggc ccc ttc gcg acc tgc cag gcg gtg ctg agt	8199				
Arg Asn Pro Gln Gly Pro Phe Ala Thr Cys Gln Ala Val Leu Ser					
2720		2725		2730	
ccc tct gag tac ttc cgc caa tgc gta tac gac ctg tgc gcg caa	8244				
Pro Ser Glu Tyr Phe Arg Gln Cys Val Tyr Asp Leu Cys Ala Gln					
2735		2740		2745	
aag ggt gac aaa gcc ttc ctg tgc cgc agc ctg gca gcc tac acg	8289				
Lys Gly Asp Lys Ala Phe Leu Cys Arg Ser Leu Ala Ala Tyr Thr					
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gcg gcc tgt cag gca gct ggc gtg gcc gtg aag ccc tgg agg aca	8334				
Ala Ala Cys Gln Ala Ala Gly Val Ala Val Lys Pro Trp Arg Thr					
2765		2770		2775	
gac agc ttc tgc ccg ctc cat tgc ccc gcc cac agc cac tac tcc	8379				

Asp	Ser	Phe	Cys	Pro	Leu	His	Cys	Pro	Ala	His	Ser	His	Tyr	Ser	
2780						2785					2790				
atc	tgc	act	cgc	acc	tgc	cag	gga	tcc	tgt	gcg	gct	ctc	tcc	ggc	8424
Ile	Cys	Thr	Arg	Thr	Cys	Gln	Gly	Ser	Cys	Ala	Ala	Leu	Ser	Gly	
2795						2800					2805				
ctc	acg	ggc	tgc	acc	acc	cgc	tgt	ttt	gag	ggc	tgt	gag	tgc	gac	8469
Leu	Thr	Gly	Cys	Thr	Thr	Arg	Cys	Phe	Glu	Gly	Cys	Glu	Cys	Asp	
2810						2815					2820				
gac	cgc	ttc	ctg	ctt	tcc	cag	ggc	gtc	tgc	atc	cct	gtc	caa	gat	8514
Asp	Arg	Phe	Leu	Leu	Ser	Gln	Gly	Val	Cys	Ile	Pro	Val	Gln	Asp	
2825						2830					2835				
tgt	ggc	tgc	acc	cat	aat	ggc	cga	tac	ttg	ccg	gta	aac	tcc	tcc	8559
Cys	Gly	Cys	Thr	His	Asn	Gly	Arg	Tyr	Leu	Pro	Val	Asn	Ser	Ser	
2840						2845					2850				
ctg	ctg	acc	tca	gac	tgc	agc	gag	cgc	tgt	tcc	tgt	tcc	tca	agc	8604
Leu	Leu	Thr	Ser	Asp	Cys	Ser	Glu	Arg	Cys	Ser	Cys	Ser	Ser	Ser	
2855						2860					2865				
tct	ggc	ctg	aca	tgc	cag	gcc	gct	ggc	tgc	cca	cca	ggc	cgt	gta	8649
Ser	Gly	Leu	Thr	Cys	Gln	Ala	Ala	Gly	Cys	Pro	Pro	Gly	Arg	Val	
2870						2875					2880				
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Cys	Glu	Val	Lys	Ala	Glu	Ala	Arg	Asn	Cys	Trp	Ala	Thr	Arg	Gly	
2885						2890					2895				
ctc	tgt	gtc	ctg	tct	gtg	ggc	gcc	aac	ctc	acc	acc	ttt	gat	ggg	8739
Leu	Cys	Val	Leu	Ser	Val	Gly	Ala	Asn	Leu	Thr	Thr	Phe	Asp	Gly	
2900						2905					2910				
gcc	cgt	ggc	gcc	acc	acc	tct	cct	ggc	gtc	tat	gag	ctc	tct	tcc	8784
Ala	Arg	Gly	Ala	Thr	Thr	Ser	Pro	Gly	Val	Tyr	Glu	Leu	Ser	Ser	
2915						2920					2925				
cgc	tgc	cca	gga	cta	cag	aat	acc	atc	ccc	tgg	tac	cgt	gta	gtt	8829
Arg	Cys	Pro	Gly	Leu	Gln	Asn	Thr	Ile	Pro	Trp	Tyr	Arg	Val	Val	
2930						2935					2940				
gcc	gaa	gtc	cag	atc	tgc	cat	ggc	aaa	acg	gag	gct	gtg	ggc	cag	8874
Ala	Glu	Val	Gln	Ile	Cys	His	Gly	Lys	Thr	Glu	Ala	Val	Gly	Gln	
2945						2950					2955				
gtc	cac	atc	ttc	ttc	cag	gat	ggg	atg	gtg	acg	ttg	act	cca	aac	8919
Val	His	Ile	Phe	Phe	Gln	Asp	Gly	Met	Val	Thr	Leu	Thr	Pro	Asn	
2960						2965					2970				
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Lys	Gly	Val	Trp	Val	Asn	Gly	Leu	Arg	Val	Asp	Leu	Pro	Ala	Glu	
2975						2980					2985				
aag	tta	gca	tct	gtg	tcc	gtg	agt	cgt	aca	cct	gat	ggc	tcc	ctg	9009
Lys	Leu	Ala	Ser	Val	Ser	Val	Ser	Arg	Thr	Pro	Asp	Gly	Ser	Leu	
2990						2995					3000				
cta	gtc	cgc	cag	aag	gca	ggg	gtc	cag	gtg	tgg	ctt	gga	gcc	aat	9054
Leu	Val	Arg	Gln	Lys	Ala	Gly	Val	Gln	Val	Trp	Leu	Gly	Ala	Asn	
3005						3010					3015				

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ggg aag  gtg gct gtg att gtc  agc aat gac cat gct  ggg aaa ctg      9099
Gly Lys  Val Ala Val Ile Val  Ser Asn Asp His Ala  Gly Lys Leu
    3020                      3025                      3030

tgt ggg  gcc tgt gga aac ttt  gac ggg gac cag acc  aat gat tgg      9144
Cys Gly  Ala Cys Gly Asn Phe  Asp Gly Asp Gln Thr  Asn Asp Trp
    3035                      3040                      3045

cat gac  tcc cag gag aag cca  gcg atg gag aaa tgg  aga gcg cag      9189
His Asp  Ser Gln Glu Lys Pro  Ala Met Glu Lys Trp  Arg Ala Gln
    3050                      3055                      3060

gac ttc  tcc cca tgt tat ggc  tga tcagtcatcc accaggaacg      9233
Asp Phe  Ser Pro Cys Tyr Gly
    3065                      3070

aagatttcct gaagaagacc tggtcctct ggaggttgca gtggctgaag gatgcatcat      9293

gtgctcctac cctgctctac cgcttttctg ggtcacagag gccaaatgtg agagcattga      9353

ataaatatct taagctaagc tgcatt      9378

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<211> 3070
<212> PRT
<213> Homo sapiens

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<400> 40
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Met Gly Ala Leu Trp Ser Trp Trp Ile Leu Trp Ala Gly Ala Thr Leu
1              5              10              15

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```

Leu Trp Gly Leu Thr Gln Glu Ala Ser Val Asp Leu Lys Asn Thr Gly
    20              25              30

```

```

Arg Glu Glu Phe Leu Thr Ala Phe Leu Gln Asn Tyr Gln Leu Ala Tyr
    35              40              45

```

```

Ser Lys Ala Tyr Pro Arg Leu Leu Ile Ser Ser Leu Ser Glu Ser Pro
    50              55              60

```

```

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

```

```

Thr Val Arg Pro Gly Glu Ser Val Met Val Asn Ile Ser Ala Lys Ala
    85              90              95

```

```

Glu Met Ile Gly Ser Lys Ile Phe Gln His Ala Val Val Ile His Ser
    100              105              110

```

```

Asp Tyr Ala Ile Ser Val Gln Ala Leu Asn Ala Lys Pro Asp Thr Ala
    115              120              125

```

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

Ala Val Pro Gly Ser Glu Phe Ser Tyr Ala Glu Val Glu Leu Gly Thr
 385 390 395 400

Ala Asp Met Ile His Thr Ala Glu Ala Thr Thr Asn Leu Gly Leu Leu
 405 410 415

Thr Phe Gly Leu Ala Lys Ala Ile Gly Tyr Ala Thr Ala Ala Asp Cys
 420 425 430

Gly Arg Thr Val Leu Ser Pro Val Glu Pro Ser Cys Glu Gly Met Gln
 435 440 445

Cys Ala Ala Gly Gln Arg Cys Gln Val Val Gly Gly Lys Ala Gly Cys
 450 455 460

Val Ala Glu Ser Thr Ala Val Cys Arg Ala Gln Gly Asp Pro His Tyr
 465 470 475 480

Thr Thr Phe Asp Gly Arg Arg Tyr Asp Met Met Gly Thr Cys Ser Tyr
 485 490 495

Thr Met Val Glu Leu Cys Ser Glu Asp Asp Thr Leu Pro Ala Phe Ser
 500 505 510

Val Glu Ala Lys Asn Glu His Arg Gly Ser Arg Arg Val Ser Tyr Val
 515 520 525

Gly Leu Val Thr Val Arg Ala Tyr Ser His Ser Val Ser Leu Thr Arg
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Gly Glu Val Gly Phe Val Leu Val Asp Asn Gln Arg Ser Arg Leu Pro
 545 550 555 560

Val Ser Leu Ser Glu Gly Arg Leu Arg Val Tyr Gln Ser Gly Pro Arg
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Ala Val Val Glu Leu Val Phe Gly Leu Val Val Thr Tyr Asp Trp Asp
 580 585 590

Cys Gln Leu Ala Leu Ser Leu Pro Ala Arg Phe Gln Asp Gln Val Cys
 595 600 605

Gly Leu Cys Gly Asn Tyr Asn Gly Asp Pro Ala Asp Asp Phe Leu Thr
 610 615 620

Pro Asp Gly Ala Leu Ala Pro Asp Ala Val Glu Phe Ala Ser Ser Trp
 625 630 635 640

Lys Leu Asp Asp Gly Asp Tyr Leu Cys Glu Asp Gly Cys Gln Asn Asn
645 650 655

Cys Pro Ala Cys Thr Pro Gly Gln Ala Gln His Tyr Glu Gly Asp Arg
660 665 670

Leu Cys Gly Met Leu Thr Lys Leu Asp Gly Pro Phe Ala Val Cys His
675 680 685

Asp Thr Leu Asp Pro Arg Pro Phe Leu Glu Gln Cys Val Tyr Asp Leu
690 695 700

Cys Val Val Gly Gly Glu Arg Leu Ser Leu Cys Arg Gly Leu Ser Ala
705 710 715 720

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

Ser Pro Ala Asn Cys Pro Leu Ser Cys Pro Ala Asn Ser Arg Tyr Glu
740 745 750

Leu Cys Gly Pro Ala Cys Pro Thr Ser Cys Asn Gly Ala Ala Ala Pro
755 760 765

Ser Asn Cys Ser Gly Arg Pro Cys Val Glu Gly Cys Val Cys Leu Pro
770 775 780

Gly Phe Val Ala Ser Gly Gly Ala Cys Val Pro Ala Ser Ser Cys Gly
785 790 795 800

Cys Thr Phe Gln Gly Leu Gln Leu Ala Pro Gly Gln Glu Val Trp Ala
805 810 815

Asp Glu Leu Cys Gln Arg Arg Cys Thr Cys Asn Gly Ala Thr His Gln
820 825 830

Val Thr Cys Arg Asp Lys Gln Ser Cys Pro Ala Gly Glu Arg Cys Ser
835 840 845

Val Gln Asn Gly Leu Leu Gly Cys Tyr Pro Asp Arg Phe Gly Thr Cys
850 855 860

Gln Gly Ser Gly Asp Pro His Tyr Val Ser Phe Asp Gly Arg Arg Phe
865 870 875 880

Asp Phe Met Gly Thr Cys Thr Tyr Leu Leu Val Gly Ser Cys Gly Gln
 885 890 895

Asn Ala Ala Leu Pro Ala Phe Arg Val Leu Val Glu Asn Glu His Arg
 900 905 910

Gly Ser Gln Thr Val Ser Tyr Thr Arg Ala Val Arg Val Glu Ala Arg
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Gly Val Lys Val Ala Val Arg Arg Glu Tyr Pro Gly Gln Val Leu Val
 930 935 940

Asp Asp Val Leu Gln Tyr Leu Pro Phe Gln Ala Ala Asp Gly Gln Val
 945 950 955 960

Gln Val Phe Arg Gln Gly Arg Asp Ala Val Val Arg Thr Asp Phe Gly
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Leu Thr Val Thr Tyr Asp Trp Asn Ala Arg Val Thr Ala Lys Val Pro
 980 985 990

Ser Ser Tyr Ala Glu Ala Leu Cys Gly Leu Cys Gly Asn Phe Asn Gly
 995 1000 1005

Asp Pro Ala Asp Asp Leu Ala Leu Arg Gly Gly Gly Gln Ala Ala
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Asn Ala Leu Ala Phe Gly Asn Ser Trp Gln Glu Glu Thr Arg Pro
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Gly Cys Gly Ala Thr Glu Pro Gly Asp Cys Pro Lys Leu Asp Ser
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Leu Val Ala Gln Gln Leu Gln Ser Lys Asn Glu Cys Gly Ile Leu
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Ala Asp Pro Lys Gly Pro Phe Arg Glu Cys His Ser Lys Leu Asp
 1070 1075 1080

Pro Gln Gly Ala Val Arg Asp Cys Val Tyr Asp Arg Cys Leu Leu
 1085 1090 1095

Pro Gly Gln Ser Gly Pro Leu Cys Asp Ala Leu Ala Thr Tyr Ala
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Ala Ala Cys Gln Ala Ala Gly Ala Thr Val His Pro Trp Arg Ser
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1145						1150					1155			
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1175						1180					1185			
Cys	Gly	Cys	Val	His	Gln	Gly	Thr	Tyr	His	Pro	Pro	Gly	Gln	Thr
1190						1195					1200			
Phe	Tyr	Pro	Gly	Pro	Gly	Cys	Asp	Ser	Leu	Cys	His	Cys	Gln	Glu
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Gly	Gly	Leu	Val	Ser	Cys	Glu	Ser	Ser	Ser	Cys	Gly	Pro	His	Glu
1220						1225					1230			
Ala	Cys	Gln	Pro	Ser	Gly	Gly	Ser	Leu	Gly	Cys	Val	Ala	Val	Gly
1235						1240					1245			
Ser	Ser	Thr	Cys	Gln	Ala	Ser	Gly	Asp	Pro	His	Tyr	Thr	Thr	Phe
1250						1255					1260			
Asp	Gly	Arg	Arg	Phe	Asp	Phe	Met	Gly	Thr	Cys	Val	Tyr	Val	Leu
1265						1270					1275			
Ala	Gln	Thr	Cys	Gly	Thr	Arg	Pro	Gly	Leu	His	Arg	Phe	Ala	Val
1280						1285					1290			
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1295						1300					1305			
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1310						1315					1320			
Gln	Arg	Gln	Trp	Lys	Val	Thr	Val	Asn	Gly	Val	Asp	Met	Lys	Leu
1325						1330					1335			
Pro	Val	Val	Leu	Ala	Asn	Gly	Gln	Ile	Arg	Ala	Ser	Gln	His	Gly
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Ser	Asp	Val	Val	Ile	Glu	Thr	Asp	Phe	Gly	Leu	Arg	Val	Ala	Tyr

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1385						1390					1395			
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1415						1420					1425			
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Tyr	Glu	Pro	Glu	Gln	Thr	Val	Leu	Ile	Asp	Asn	Cys	Arg	Gln	Gln
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Val	Phe	Pro	Asn	Gly	Thr	Leu	Ala	Pro	Ser	Ile	Pro	Ile	Trp	Gly
1895						1900					1905			
Gly	Ser	Trp	Arg	Ala	Pro	Gly	Trp	Asp	Pro	Leu	Cys	Trp	Asp	Glu
1910						1915					1920			
Cys	Arg	Gly	Ser	Cys	Pro	Thr	Cys	Pro	Glu	Asp	Arg	Leu	Glu	Gln
1925						1930					1935			
Tyr	Glu	Gly	Pro	Gly	Phe	Cys	Gly	Pro	Leu	Ala	Ser	Gly	Thr	Gly
1940						1945					1950			
Gly	Pro	Phe	Thr	Thr	Cys	His	Ala	His	Val	Pro	Pro	Glu	Ser	Phe
1955						1960					1965			
Phe	Lys	Gly	Cys	Val	Leu	Asp	Val	Cys	Met	Gly	Gly	Gly	Asp	Arg
1970						1975					1980			
Asp	Ile	Leu	Cys	Lys	Ala	Leu	Ala	Ser	Tyr	Val	Ala	Ala	Cys	Gln
1985						1990					1995			
Ala	Ala	Gly	Val	Val	Ile	Glu	Asp	Trp	Arg	Ala	Gln	Val	Gly	Cys
2000						2005					2010			
Glu	Ile	Thr	Cys	Pro	Glu	Asn	Ser	His	Tyr	Glu	Val	Cys	Gly	Pro
2015						2020					2025			
Pro	Cys	Pro	Ala	Ser	Cys	Pro	Ser	Pro	Ala	Pro	Leu	Thr	Thr	Pro
2030						2035					2040			
Ala	Val	Cys	Glu	Gly	Pro	Cys	Val	Glu	Gly	Cys	Gln	Cys	Asp	Ala
2045						2050					2055			
Gly	Phe	Val	Leu	Ser	Ala	Asp	Arg	Cys	Val	Pro	Leu	Asn	Asn	Gly

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

Trp	Gln	Val	Gly	Gly	Ala	Gln	Gly	Cys	Gly	Glu	Cys	Val	Ser	Lys
2300						2305					2310			
Pro	Cys	Pro	Ser	Pro	Cys	Thr	Pro	Glu	Gln	Gln	Glu	Ser	Phe	Gly
2315						2320					2325			
Gly	Pro	Asp	Ala	Cys	Gly	Val	Ile	Ser	Ala	Thr	Asp	Gly	Pro	Leu
2330						2335					2340			
Ala	Pro	Cys	His	Gly	Leu	Val	Pro	Pro	Ala	Gln	Tyr	Phe	Gln	Gly
2345						2350					2355			
Cys	Leu	Leu	Asp	Ala	Cys	Gln	Val	Gln	Gly	His	Pro	Gly	Gly	Leu
2360						2365					2370			
Cys	Pro	Ala	Val	Ala	Thr	Tyr	Val	Ala	Ala	Cys	Gln	Ala	Ala	Gly
2375						2380					2385			
Ala	Gln	Leu	Gly	Glu	Trp	Arg	Arg	Pro	Asp	Phe	Cys	Pro	Leu	Gln
2390						2395					2400			
Cys	Pro	Ala	His	Ser	His	Tyr	Glu	Leu	Cys	Gly	Asp	Ser	Cys	Pro
2405						2410					2415			
Val	Ser	Cys	Pro	Ser	Leu	Ser	Ala	Pro	Glu	Gly	Cys	Glu	Ser	Ala
2420						2425					2430			
Cys	Arg	Glu	Gly	Cys	Val	Cys	Asp	Ala	Gly	Phe	Val	Leu	Ser	Gly
2435						2440					2445			
Asp	Thr	Cys	Val	Pro	Val	Gly	Gln	Cys	Gly	Cys	Leu	His	Asp	Gly
2450						2455					2460			
Arg	Tyr	Tyr	Pro	Leu	Gly	Glu	Val	Phe	Tyr	Pro	Gly	Pro	Glu	Cys
2465						2470					2475			
Glu	Arg	Arg	Cys	Glu	Cys	Gly	Pro	Gly	Gly	His	Val	Thr	Cys	Gln
2480						2485					2490			
Glu	Gly	Ala	Ala	Cys	Gly	Pro	His	Glu	Glu	Cys	Arg	Leu	Glu	Asp
2495						2500					2505			
Gly	Val	Gln	Ala	Cys	His	Ala	Thr	Gly	Cys	Gly	Arg	Cys	Leu	Ala
2510						2515					2520			
Asn	Gly	Gly	Ile	His	Tyr	Ile	Thr	Leu	Asp	Gly	Arg	Val	Tyr	Asp
2525						2530					2535			

Leu	His	Gly	Ser	Cys	Ser	Tyr	Val	Leu	Ala	Gln	Val	Cys	His	Pro
2540						2545					2550			
Lys	Pro	Gly	Asp	Glu	Asp	Phe	Ser	Ile	Val	Leu	Glu	Lys	Asn	Ala
2555						2560					2565			
Ala	Gly	Asp	Leu	Gln	Arg	Leu	Leu	Val	Thr	Val	Ala	Gly	Gln	Val
2570						2575					2580			
Val	Ser	Leu	Ala	Gln	Gly	Gln	Gln	Val	Thr	Val	Asp	Gly	Glu	Ala
2585						2590					2595			
Val	Ala	Leu	Pro	Val	Ala	Val	Gly	Arg	Val	Arg	Val	Thr	Ala	Glu
2600						2605					2610			
Gly	Arg	Asn	Met	Val	Leu	Gln	Thr	Thr	Lys	Gly	Leu	Arg	Leu	Leu
2615						2620					2625			
Phe	Asp	Gly	Asp	Ala	His	Leu	Leu	Met	Ser	Ile	Pro	Ser	Pro	Phe
2630						2635					2640			
Arg	Gly	Arg	Leu	Cys	Gly	Leu	Cys	Gly	Asn	Phe	Asn	Gly	Asn	Trp
2645						2650					2655			
Ser	Asp	Asp	Phe	Val	Leu	Pro	Asn	Gly	Ser	Ala	Ala	Ser	Ser	Val
2660						2665					2670			
Glu	Thr	Phe	Gly	Ala	Ala	Trp	Arg	Ala	Pro	Gly	Ser	Ser	Lys	Gly
2675						2680					2685			
Cys	Gly	Glu	Gly	Cys	Gly	Pro	Gln	Gly	Cys	Pro	Val	Cys	Leu	Ala
2690						2695					2700			
Glu	Glu	Thr	Ala	Pro	Tyr	Glu	Ser	Asn	Glu	Ala	Cys	Gly	Gln	Leu
2705						2710					2715			
Arg	Asn	Pro	Gln	Gly	Pro	Phe	Ala	Thr	Cys	Gln	Ala	Val	Leu	Ser
2720						2725					2730			
Pro	Ser	Glu	Tyr	Phe	Arg	Gln	Cys	Val	Tyr	Asp	Leu	Cys	Ala	Gln
2735						2740					2745			
Lys	Gly	Asp	Lys	Ala	Phe	Leu	Cys	Arg	Ser	Leu	Ala	Ala	Tyr	Thr
2750						2755					2760			
Ala	Ala	Cys	Gln	Ala	Ala	Gly	Val	Ala	Val	Lys	Pro	Trp	Arg	Thr

2765						2770						2775			
Asp	Ser	Phe	Cys	Pro	Leu	His	Cys	Pro	Ala	His	Ser	His	Tyr	Ser	
2780						2785					2790				
Ile	Cys	Thr	Arg	Thr	Cys	Gln	Gly	Ser	Cys	Ala	Ala	Leu	Ser	Gly	
2795						2800					2805				
Leu	Thr	Gly	Cys	Thr	Thr	Arg	Cys	Phe	Glu	Gly	Cys	Glu	Cys	Asp	
2810						2815					2820				
Asp	Arg	Phe	Leu	Leu	Ser	Gln	Gly	Val	Cys	Ile	Pro	Val	Gln	Asp	
2825						2830					2835				
Cys	Gly	Cys	Thr	His	Asn	Gly	Arg	Tyr	Leu	Pro	Val	Asn	Ser	Ser	
2840						2845					2850				
Leu	Leu	Thr	Ser	Asp	Cys	Ser	Glu	Arg	Cys	Ser	Cys	Ser	Ser	Ser	
2855						2860					2865				
Ser	Gly	Leu	Thr	Cys	Gln	Ala	Ala	Gly	Cys	Pro	Pro	Gly	Arg	Val	
2870						2875					2880				
Cys	Glu	Val	Lys	Ala	Glu	Ala	Arg	Asn	Cys	Trp	Ala	Thr	Arg	Gly	
2885						2890					2895				
Leu	Cys	Val	Leu	Ser	Val	Gly	Ala	Asn	Leu	Thr	Thr	Phe	Asp	Gly	
2900						2905					2910				
Ala	Arg	Gly	Ala	Thr	Thr	Ser	Pro	Gly	Val	Tyr	Glu	Leu	Ser	Ser	
2915						2920					2925				
Arg	Cys	Pro	Gly	Leu	Gln	Asn	Thr	Ile	Pro	Trp	Tyr	Arg	Val	Val	
2930						2935					2940				
Ala	Glu	Val	Gln	Ile	Cys	His	Gly	Lys	Thr	Glu	Ala	Val	Gly	Gln	
2945						2950					2955				
Val	His	Ile	Phe	Phe	Gln	Asp	Gly	Met	Val	Thr	Leu	Thr	Pro	Asn	
2960						2965					2970				
Lys	Gly	Val	Trp	Val	Asn	Gly	Leu	Arg	Val	Asp	Leu	Pro	Ala	Glu	
2975						2980					2985				
Lys	Leu	Ala	Ser	Val	Ser	Val	Ser	Arg	Thr	Pro	Asp	Gly	Ser	Leu	
2990						2995					3000				

Leu Val Arg Gln Lys Ala Gly Val Gln Val Trp Leu Gly Ala Asn
 3005 3010 3015

Gly Lys Val Ala Val Ile Val Ser Asn Asp His Ala Gly Lys Leu
 3020 3025 3030

Cys Gly Ala Cys Gly Asn Phe Asp Gly Asp Gln Thr Asn Asp Trp
 3035 3040 3045

His Asp Ser Gln Glu Lys Pro Ala Met Glu Lys Trp Arg Ala Gln
 3050 3055 3060

Asp Phe Ser Pro Cys Tyr Gly
 3065 3070

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 <213> Homo sapiens

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<400> 41
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 tttcattccc agctgtcaac atcctggaag ctttgaagct caggaaagaa gagaaatcca 180
 ctgagaacag tctgtaaagg tccgtagtgc tatctacatc cagacggtgg aaggagaga 240
 aagagaaaga aggtatccta ggaatacctg cctgcttaga ccctctataa aagctctgtg 300
 catcctgccca ctgaggactc cgaagaggta gcagtcttct gaaagacttc aactgtgagg 360
 ac atg tcg ttc aga ttt ggc caacat ctc atc aag ccc tct gta gtg 407
 Met Ser Phe Arg Phe Gly Gln His Leu Ile Lys Pro Ser Val Val
 1 5 10 15
 ttt ctc aaa aca gaa ctg tcc ttc gct ctt gtg aat agg aaa cct gtg 455
 Phe Leu Lys Thr Glu Leu Ser Phe Ala Leu Val Asn Arg Lys Pro Val
 20 25 30
 gta cca gga cat gtc ctt gtg tgc ccg ctg cgg cca gtg gag cgc ttc 503
 Val Pro Gly His Val Leu Val Cys Pro Leu Arg Pro Val Glu Arg Phe
 35 40 45
 cat gac ctg cgt cct gat gaa gtg gcc gat ttg ttt cag acg acc cag 551
 His Asp Leu Arg Pro Asp Glu Val Ala Asp Leu Phe Gln Thr Thr Gln
 50 55 60
 aga gtc ggg aca gtg gtg gaa aaa cat ttc cat ggg acc tct ctc acc 599
 Arg Val Gly Thr Val Val Glu Lys His Phe His Gly Thr Ser Leu Thr
 65 70 75

ttt tcc atg cag gat ggc ccc gaa gcc gga cag act gtg aag cac gtt 647
Phe Ser Met Gln Asp Gly Pro Glu Ala Gly Gln Thr Val Lys His Val
80 85 90 95

cac gtc cat gtt ctt ccc agg aag gct gga gac ttt cac agg aat gac 695
His Val His Val Leu Pro Arg Lys Ala Gly Asp Phe His Arg Asn Asp
100 105 110

agc atc tat gag gag ctc cag aaa cat gac aag gag gac ttt cct gcc 743
Ser Ile Tyr Glu Glu Leu Gln Lys His Asp Lys Glu Asp Phe Pro Ala
115 120 125

tct tgg aga tca gag gag gaa atg gca gca gaa gcc gca gct ctg cgg 791
Ser Trp Arg Ser Glu Glu Glu Met Ala Ala Glu Ala Ala Ala Leu Arg
130 135 140

gtc tac ttt cag tga cacagatggt ttccagatcc tgaattccag caaaagagct 846
Val Tyr Phe Gln
145

attgcccaacc agtttgaaga ccgccccccc gcctctcccc aagaggaact gaatcagcat 906

gaaaatgcag tttcttcac tcaccatcct gtattcttca accagtgatc cccacctcg 966

gtcactccaa ctcccttaaa atacctagac ctaaacggct cagacaggca gatttgaggt 1026

ttccccctgt ctcttattc ggcagcctta tgattaaact tccttctctg ctgcaaaaaa 1086

aaaaaaaaa 1095

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<212> PRT
<213> Homo sapiens

<400> 42

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

Pro Gly His Val Leu Val Cys Pro Leu Arg Pro Val Glu Arg Phe His
35 40 45

Asp Leu Arg Pro Asp Glu Val Ala Asp Leu Phe Gln Thr Thr Gln Arg
50 55 60

Val Gly Thr Val Val Glu Lys His Phe His Gly Thr Ser Leu Thr Phe
65 70 75 80

Ser Met Gln Asp Gly Pro Glu Ala Gly Gln Thr Val Lys His Val His
85 90 95

Val His Val Leu Pro Arg Lys Ala Gly Asp Phe His Arg Asn Asp Ser
 100 105 110

Ile Tyr Glu Glu Leu Gln Lys His Asp Lys Glu Asp Phe Pro Ala Ser
 115 120 125

Trp Arg Ser Glu Glu Glu Met Ala Ala Glu Ala Ala Ala Leu Arg Val
 130 135 140

Tyr Phe Gln
 145

<210> 43
 <211> 1839
 <212> DNA
 <213> Homo sapiens

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 <222> (165) .. (1448)

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 ccagccgggc tgccgccgc gtcccggaag ctccagcctg aacc atg ttt ttc act 176
 Met Phe Phe Thr
 1
 tgt ggc cca aat gag gcc atg gtg gtc tcc ggg ttc tgc cga agc ccc 224
 Cys Gly Pro Asn Glu Ala Met Val Val Ser Gly Phe Cys Arg Ser Pro
 5 10 15 20
 cca gtc atg gtg gct gga ggg cgt gtc ttt gtc ctg ccc tgc atc caa 272
 Pro Val Met Val Ala Gly Gly Arg Val Phe Val Leu Pro Cys Ile Gln
 25 30 35
 cag atc cag agg atc tct ctc aac aca ctg acc ctc aat gtc aag agt 320
 Gln Ile Gln Arg Ile Ser Leu Asn Thr Leu Thr Leu Asn Val Lys Ser
 40 45 50
 gaa aag gtt tac act cgc cat ggg gtc ccc atc tca gtc act ggc att 368
 Glu Lys Val Tyr Thr Arg His Gly Val Pro Ile Ser Val Thr Gly Ile
 55 60 65
 gcc cag gta aaa atc cag ggg cag aac aag gag atg ttg gcg gcc gcc 416
 Ala Gln Val Lys Ile Gln Gly Gln Asn Lys Glu Met Leu Ala Ala Ala
 70 75 80
 tgt cag atg ttc ctg ggg aag acg gag gct gag att gcc cac att gcc 464
 Cys Gln Met Phe Leu Gly Lys Thr Glu Ala Glu Ile Ala His Ile Ala
 85 90 95 100
 ctg gag acg tta gag ggc cac cag agg gcc atc atg gcc cac atg act 512
 Leu Glu Thr Leu Glu Gly His Gln Arg Ala Ile Met Ala His Met Thr
 105 110 115

gtg gag gag atc tat aag gac agg cag aaa ttc tca gaa cag gtt ttc	560
Val Glu Glu Ile Tyr Lys Asp Arg Gln Lys Phe Ser Glu Gln Val Phe	
120 125 130	
aaa gtg gcc tcc tca gac ctg gtc aac atg ggc atc agt gtg gtt agc	608
Lys Val Ala Ser Ser Asp Leu Val Asn Met Gly Ile Ser Val Val Ser	
135 140 145	
tac act ctg aag gac att cac gat gac cag gac tat ttg cac tct ttg	656
Tyr Thr Leu Lys Asp Ile His Asp Asp Gln Asp Tyr Leu His Ser Leu	
150 155 160	
ggg aag gct cga aca gct caa gtc caa aaa gat gca cgg att gga gaa	704
Gly Lys Ala Arg Thr Ala Gln Val Gln Lys Asp Ala Arg Ile Gly Glu	
165 170 175 180	
gca gag gcc aag aga gat gct ggg atc cgg gaa gct aaa gcc aag cag	752
Ala Glu Ala Lys Arg Asp Ala Gly Ile Arg Glu Ala Lys Ala Lys Gln	
185 190 195	
gaa aag gtg tct gct cag tac ctg agt gag atc gag atg gcc aag gca	800
Glu Lys Val Ser Ala Gln Tyr Leu Ser Glu Ile Glu Met Ala Lys Ala	
200 205 210	
cag aga gat tac gaa ctg aag aag gcc gcc tat gac atc gag gtc aac	848
Gln Arg Asp Tyr Glu Leu Lys Lys Ala Ala Tyr Asp Ile Glu Val Asn	
215 220 225	
acc cgc cga gca cag gct gac ctg gcc tat cag ctt cag gtg gcc aag	896
Thr Arg Arg Ala Gln Ala Asp Leu Ala Tyr Gln Leu Gln Val Ala Lys	
230 235 240	
act aag cag cag att gag gag cag cgg gtg cag gtg cag gtg gtg gag	944
Thr Lys Gln Gln Ile Glu Glu Gln Arg Val Gln Val Gln Val Val Glu	
245 250 255 260	
cgg gcc cag cag gtg gca gtg cag gag cag gag atc gcc cgg cgg gag	992
Arg Ala Gln Gln Val Ala Val Gln Glu Gln Glu Ile Ala Arg Arg Glu	
265 270 275	
aag gag ctg gag gcc cgg gtg cgg aag cca gcg gaa gcg gag cgc tac	1040
Lys Glu Leu Glu Ala Arg Val Arg Lys Pro Ala Glu Ala Glu Arg Tyr	
280 285 290	
aag ctg gag cgc cta gcc gag gca gag aag tcc caa cta att atg cag	1088
Lys Leu Glu Arg Leu Ala Glu Ala Glu Lys Ser Gln Leu Ile Met Gln	
295 300 305	
gcg gag gca gaa gcc gcg tct gtg cgg atg cgt ggg gaa gct gag gcc	1136
Ala Glu Ala Glu Ala Ala Ser Val Arg Met Arg Gly Glu Ala Glu Ala	
310 315 320	
ttt gcc ata ggg gcc cga gcc cga gcc gag gct gag cag atg gcc aag	1184
Phe Ala Ile Gly Ala Arg Ala Arg Ala Glu Ala Glu Gln Met Ala Lys	
325 330 335 340	
aag gca gaa gcc ttc cag ctg tac caa gag gct gct cag ctg gac atg	1232
Lys Ala Glu Ala Phe Gln Leu Tyr Gln Glu Ala Ala Gln Leu Asp Met	
345 350 355	
ctg cta gag aag ctg ccc cag gtg gca gag gag atc agt ggt ccc ttg	1280
Leu Leu Glu Lys Leu Pro Gln Val Ala Glu Glu Ile Ser Gly Pro Leu	

360	365	370	
act tca gcc aat aag atc aca ctg gtg tcc agc ggc agt ggg acc atg			1328
Thr Ser Ala Asn Lys Ile Thr Leu Val Ser Ser Gly Ser Gly Thr Met			
375	380	385	
ggg gca gcc aaa gtg act ggg gaa gta ctg gac att cta act cgc ctg			1376
Gly Ala Ala Lys Val Thr Gly Glu Val Leu Asp Ile Leu Thr Arg Leu			
390	395	400	
cca gag agt gtg gaa aga ctc aca ggc gtg agc atc tcc cag gtg aat			1424
Pro Glu Ser Val Glu Arg Leu Thr Gly Val Ser Ile Ser Gln Val Asn			
405	410	415	420
cac aag cct ttg aga aca gcc tga gccttcagcc ctcacagatg cccagcctca			1478
His Lys Pro Leu Arg Thr Ala			
425			
tagctgaagt tgcctgaatg atcctcctgt tgcattgtaac ccactggcct ccctgagcat			1538
gtccattgac agtgaggtcc caccctcat ctctccttgc caaatagttt gtgccttgtc			1598
ttgaagggg ttgctcccct tgccaacctc aactgctat gattgccaac tccagcggtc			1658
ccatgtcagc cttctgatga tcccactcca cccacactca acttatttaa cttcctaatt			1718
aaatcagact gtttgagcct gttgtctaga atattttcct gaccaagact gagggatggg			1778
ctggagggtt tcaactttgc tacccaaata aattgctgta agtaagtact aaaaaaaaaa			1838
a			1839
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<212>	PRT		
<213>	Homo sapiens		
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Cys Arg Ser Pro Pro Val Met Val Ala Gly Gly Arg Val Phe Val Leu			
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Pro Cys Ile Gln Gln Ile Gln Arg Ile Ser Leu Asn Thr Leu Thr Leu			
35	40	45	
Asn Val Lys Ser Glu Lys Val Tyr Thr Arg His Gly Val Pro Ile Ser			
50	55	60	
Val Thr Gly Ile Ala Gln Val Lys Ile Gln Gly Gln Asn Lys Glu Met			
65	70	75	80
Leu Ala Ala Ala Cys Gln Met Phe Leu Gly Lys Thr Glu Ala Glu Ile			
85	90	95	

Ala His Ile Ala Leu Glu Thr Leu Glu Gly His Gln Arg Ala Ile Met
 100 105 110

Ala His Met Thr Val Glu Glu Ile Tyr Lys Asp Arg Gln Lys Phe Ser
 115 120 125

Glu Gln Val Phe Lys Val Ala Ser Ser Asp Leu Val Asn Met Gly Ile
 130 135 140

Ser Val Val Ser Tyr Thr Leu Lys Asp Ile His Asp Asp Gln Asp Tyr
 145 150 155 160

Leu His Ser Leu Gly Lys Ala Arg Thr Ala Gln Val Gln Lys Asp Ala
 165 170 175

Arg Ile Gly Glu Ala Glu Ala Lys Arg Asp Ala Gly Ile Arg Glu Ala
 180 185 190

Lys Ala Lys Gln Glu Lys Val Ser Ala Gln Tyr Leu Ser Glu Ile Glu
 195 200 205

Met Ala Lys Ala Gln Arg Asp Tyr Glu Leu Lys Lys Ala Ala Tyr Asp
 210 215 220

Ile Glu Val Asn Thr Arg Arg Ala Gln Ala Asp Leu Ala Tyr Gln Leu
 225 230 235 240

Gln Val Ala Lys Thr Lys Gln Gln Ile Glu Glu Gln Arg Val Gln Val
 245 250 255

Gln Val Val Glu Arg Ala Gln Gln Val Ala Val Gln Glu Gln Glu Ile
 260 265 270

Ala Arg Arg Glu Lys Glu Leu Glu Ala Arg Val Arg Lys Pro Ala Glu
 275 280 285

Ala Glu Arg Tyr Lys Leu Glu Arg Leu Ala Glu Ala Glu Lys Ser Gln
 290 295 300

Leu Ile Met Gln Ala Glu Ala Glu Ala Ala Ser Val Arg Met Arg Gly
 305 310 315 320

Glu Ala Glu Ala Phe Ala Ile Gly Ala Arg Ala Arg Ala Glu Ala Glu
 325 330 335

Gln Met Ala Lys Lys Ala Glu Ala Phe Gln Leu Tyr Gln Glu Ala Ala
 340 345 350

Gln Leu Asp Met Leu Leu Glu Lys Leu Pro Gln Val Ala Glu Glu Ile
 355 360 365

Ser Gly Pro Leu Thr Ser Ala Asn Lys Ile Thr Leu Val Ser Ser Gly
 370 375 380

Ser Gly Thr Met Gly Ala Ala Lys Val Thr Gly Glu Val Leu Asp Ile
 385 390 395 400

Leu Thr Arg Leu Pro Glu Ser Val Glu Arg Leu Thr Gly Val Ser Ile
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Ser Gln Val Asn His Lys Pro Leu Arg Thr Ala
 420 425

<210> 45
 <211> 1869
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (189)..(1484)

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 tcccacaagc caggctgata cttttctgtc agtccacttc accaagcctg cccttgagaca 180
 aggacccg atg ccc aac ccc agg cct ggc aag ccc tcg gcc cct tcc ttg 230
 Met Pro Asn Pro Arg Pro Gly Lys Pro Ser Ala Pro Ser Leu
 1 5 10
 gcc ctt ggc cca tcc cca gga gcc tcg ccc agc tgg agg gct gca ccc 278
 Ala Leu Gly Pro Ser Pro Gly Ala Ser Pro Ser Trp Arg Ala Ala Pro
 15 20 25 30
 aaa gcc tca gac ctg ctg ggg gcc cgg ggc cca ggg gga acc ttc cag 326
 Lys Ala Ser Asp Leu Leu Gly Ala Arg Gly Pro Gly Gly Thr Phe Gln
 35 40 45
 ggc cga gat ctt cga ggc ggg gcc cat gcc tcc tct tct tcc ttg aac 374
 Gly Arg Asp Leu Arg Gly Gly Ala His Ala Ser Ser Ser Ser Leu Asn
 50 55 60
 ccc atg cca cca tcg cag ctg cag ctg ccc aca ctg ccc cta gtc atg 422
 Pro Met Pro Pro Ser Gln Leu Gln Leu Pro Thr Leu Pro Leu Val Met
 65 70 75
 gtg gca ccc tcc ggg gca cgg ctg ggc ccc ttg ccc cac tta cag gca 470
 Val Ala Pro Ser Gly Ala Arg Leu Gly Pro Leu Pro His Leu Gln Ala
 80 85 90

ctc	ctc	cag	gac	agg	cca	cat	ttc	atg	cac	cag	ctc	tca	acg	gtg	gat	518
Leu	Leu	Gln	Asp	Arg	Pro	His	Phe	Met	His	Gln	Leu	Ser	Thr	Val	Asp	
95					100					105					110	
gcc	cac	gcc	cgg	acc	cct	gtg	ctg	cag	gtg	cac	ccc	ctg	gag	agc	cca	566
Ala	His	Ala	Arg	Thr	Pro	Val	Leu	Gln	Val	His	Pro	Leu	Glu	Ser	Pro	
				115					120					125		
gcc	atg	atc	agc	ctc	aca	cca	ccc	acc	acc	gcc	act	ggg	gtc	ttc	tcc	614
Ala	Met	Ile	Ser	Leu	Thr	Pro	Pro	Thr	Thr	Ala	Thr	Gly	Val	Phe	Ser	
			130					135					140			
ctc	aag	gcc	cgg	cct	ggc	ctc	cca	cct	ggg	atc	aac	gtg	gcc	agc	ctg	662
Leu	Lys	Ala	Arg	Pro	Gly	Leu	Pro	Pro	Gly	Ile	Asn	Val	Ala	Ser	Leu	
		145					150					155				
gaa	tgg	gtg	tcc	agg	gag	ccg	gca	ctg	ctc	tgc	acc	ttc	cca	aat	ccc	710
Glu	Trp	Val	Ser	Arg	Glu	Pro	Ala	Leu	Leu	Cys	Thr	Phe	Pro	Asn	Pro	
	160					165					170					
agt	gca	ccc	agg	aag	gac	agc	acc	ctt	tgc	gct	gtg	ccc	cag	agc	tcc	758
Ser	Ala	Pro	Arg	Lys	Asp	Ser	Thr	Leu	Ser	Ala	Val	Pro	Gln	Ser	Ser	
175					180				185						190	
tac	cca	ctg	ctg	gca	aat	ggc	gtc	tgc	aag	tgg	ccc	gga	tgt	gag	aag	806
Tyr	Pro	Leu	Leu	Ala	Asn	Gly	Val	Cys	Lys	Trp	Pro	Gly	Cys	Glu	Lys	
				195					200					205		
gtc	ttc	gaa	gag	cca	gag	gac	ttc	ctc	aag	cac	tgc	cag	gcg	gac	cat	854
Val	Phe	Glu	Glu	Pro	Glu	Asp	Phe	Leu	Lys	His	Cys	Gln	Ala	Asp	His	
		210						215					220			
ctt	ctg	gat	gag	aag	ggc	agg	gca	caa	tgt	ctc	ctc	cag	aga	gag	atg	902
Leu	Leu	Asp	Glu	Lys	Gly	Arg	Ala	Gln	Cys	Leu	Leu	Gln	Arg	Glu	Met	
		225					230					235				
gta	cag	tct	ctg	gag	cag	cag	ctg	gtg	ctg	gag	aag	gag	aag	ctg	agt	950
Val	Gln	Ser	Leu	Glu	Gln	Gln	Leu	Val	Leu	Glu	Lys	Glu	Lys	Leu	Ser	
	240					245					250					
gcc	atg	cag	gcc	cac	ctg	gct	ggg	aaa	atg	gca	ctg	acc	aag	gct	tca	998
Ala	Met	Gln	Ala	His	Leu	Ala	Gly	Lys	Met	Ala	Leu	Thr	Lys	Ala	Ser	
255					260				265						270	
tct	gtg	gca	tca	tcc	gac	aag	ggc	tcc	tgc	tgc	atc	gta	gct	gct	ggc	1046
Ser	Val	Ala	Ser	Ser	Asp	Lys	Gly	Ser	Cys	Cys	Ile	Val	Ala	Ala	Gly	
				275					280					285		
agc	caa	ggc	cct	gtc	gtc	cca	gcc	tgg	tct	ggc	ccc	cgg	gag	gcc	cct	1094
Ser	Gln	Gly	Pro	Val	Val	Pro	Ala	Trp	Ser	Gly	Pro	Arg	Glu	Ala	Pro	
			290					295					300			
gac	agc	ctg	ttt	gct	gtc	cgg	agg	cac	ctg	tgg	ggc	agc	cat	gga	aac	1142
Asp	Ser	Leu	Phe	Ala	Val	Arg	Arg	His	Leu	Trp	Gly	Ser	His	Gly	Asn	
		305					310					315				
agc	aca	ttc	cca	gag	ttc	ctc	cac	aac	atg	gac	tac	ttc	aag	ttc	cac	1190
Ser	Thr	Phe	Pro	Glu	Phe	Leu	His	Asn	Met	Asp	Tyr	Phe	Lys	Phe	His	
	320					325					330					
aac	atg	cga	ccc	cct	ttc	acc	tac	gcc	acg	ctc	atc	cgc	tgg	gcc	atc	1238
Asn	Met	Arg	Pro	Pro	Phe	Thr	Tyr	Ala	Thr	Leu	Ile	Arg	Trp	Ala	Ile	
335					340					345					350	

ctg gag gct cca gag aag cag cgg aca ctc aat gag atc tac cac tgg 1286
Leu Glu Ala Pro Glu Lys Gln Arg Thr Leu Asn Glu Ile Tyr His Trp
355 360 365

ttc aca cgc atg ttt gcc ttc ttc aga aac cat cct gcc acc tgg aag 1334
Phe Thr Arg Met Phe Ala Phe Phe Arg Asn His Pro Ala Thr Trp Lys
370 375 380

aac gcc atc cgc cac aac ctg agt ctg cac aag tgc ttt gtg cgg gtg 1382
Asn Ala Ile Arg His Asn Leu Ser Leu His Lys Cys Phe Val Arg Val
385 390 395

gag agc gag aag ggg gct gtg tgg acc gtg gat gag ctg gag ttc cgc 1430
Glu Ser Glu Lys Gly Ala Val Trp Thr Val Asp Glu Leu Glu Phe Arg
400 405 410

aag aaa cgg agc cag agg ccc agc agg tgt tcc aac cct aca cct ggc 1478
Lys Lys Arg Ser Gln Arg Pro Ser Arg Cys Ser Asn Pro Thr Pro Gly
415 420 425 430

ccc tga cctcaagatc aaggaaagga ggatggacga acaggggcc aactggtggg 1534
Pro

aggcagaggt ggtgggggca gggatgatag gccctggatg tgcccacagg gaccaagaag 1594

tgaggtttcc actgtcttgc ctgccagggc ccctgttccc ccgctggcag ccacccccctc 1654

ccccatcata tcctttgccc caaggctgct cagagggggc ccggtcctgg cccagcccc 1714

cacctccgcc ccagacacac cccccagtcg agccctgcag ccaaacagag ccttcacaac 1774

cagccacaca gagcctgcct cagctgctcg cacagattac ttcagggctg gaaaagtcac 1834

acagacacac aaaatgtcac aatcctgtcc ctcac 1869

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<210> 46
<211> 431
<212> PRT
<213> Homo sapiens
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<400> 46

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

Gly Pro Ser Pro Gly Ala Ser Pro Ser Trp Arg Ala Ala Pro Lys Ala
20 25 30

Ser Asp Leu Leu Gly Ala Arg Gly Pro Gly Gly Thr Phe Gln Gly Arg
35 40 45

Asp Leu Arg Gly Gly Ala His Ala Ser Ser Ser Ser Leu Asn Pro Met
50 55 60

Pro Pro Ser Gln Leu Gln Leu Pro Thr Leu Pro Leu Val Met Val Ala
65 70 75 80

Pro Ser Gly Ala Arg Leu Gly Pro Leu Pro His Leu Gln Ala Leu Leu
 85 90 95

Gln Asp Arg Pro His Phe Met His Gln Leu Ser Thr Val Asp Ala His
 100 105 110

Ala Arg Thr Pro Val Leu Gln Val His Pro Leu Glu Ser Pro Ala Met
 115 120 125

Ile Ser Leu Thr Pro Pro Thr Thr Ala Thr Gly Val Phe Ser Leu Lys
 130 135 140

Ala Arg Pro Gly Leu Pro Pro Gly Ile Asn Val Ala Ser Leu Glu Trp
 145 150 155 160

Val Ser Arg Glu Pro Ala Leu Leu Cys Thr Phe Pro Asn Pro Ser Ala
 165 170 175

Pro Arg Lys Asp Ser Thr Leu Ser Ala Val Pro Gln Ser Ser Tyr Pro
 180 185 190

Leu Leu Ala Asn Gly Val Cys Lys Trp Pro Gly Cys Glu Lys Val Phe
 195 200 205

Glu Glu Pro Glu Asp Phe Leu Lys His Cys Gln Ala Asp His Leu Leu
 210 215 220

Asp Glu Lys Gly Arg Ala Gln Cys Leu Leu Gln Arg Glu Met Val Gln
 225 230 235 240

Ser Leu Glu Gln Gln Leu Val Leu Glu Lys Glu Lys Leu Ser Ala Met
 245 250 255

Gln Ala His Leu Ala Gly Lys Met Ala Leu Thr Lys Ala Ser Ser Val
 260 265 270

Ala Ser Ser Asp Lys Gly Ser Cys Cys Ile Val Ala Ala Gly Ser Gln
 275 280 285

Gly Pro Val Val Pro Ala Trp Ser Gly Pro Arg Glu Ala Pro Asp Ser
 290 295 300

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

Phe Pro Glu Phe Leu His Asn Met Asp Tyr Phe Lys Phe His Asn Met

325

330

335

Arg Pro Pro Phe Thr Tyr Ala Thr Leu Ile Arg Trp Ala Ile Leu Glu
 340 345 350

Ala Pro Glu Lys Gln Arg Thr Leu Asn Glu Ile Tyr His Trp Phe Thr
 355 360 365

Arg Met Phe Ala Phe Phe Arg Asn His Pro Ala Thr Trp Lys Asn Ala
 370 375 380

Ile Arg His Asn Leu Ser Leu His Lys Cys Phe Val Arg Val Glu Ser
 385 390 395 400

Glu Lys Gly Ala Val Trp Thr Val Asp Glu Leu Glu Phe Arg Lys Lys
 405 410 415

Arg Ser Gln Arg Pro Ser Arg Cys Ser Asn Pro Thr Pro Gly Pro
 420 425 430

<210> 47
 <211> 738
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (129)..(566)

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 aaagattaag ctgcaggctc cctgcccata aaacaggggtg tgaaaggcat ctcagcggct 120
 gccccacc atg gct acc tgg gcc ctc ctg ctc ctt gca gcc atg ctc ctg 170
 Met Ala Thr Trp Ala Leu Leu Leu Leu Ala Ala Met Leu Leu
 1 5 10
 ggc aac cca ggt ctg gtc ttc tct cgt ctg agc cct gag tac tac gac 218
 Gly Asn Pro Gly Leu Val Phe Ser Arg Leu Ser Pro Glu Tyr Tyr Asp
 15 20 25 30
 ctg gca aga gcc cac ctg cgt gat gag gag aaa tcc tgc ccg tgc ctg 266
 Leu Ala Arg Ala His Leu Arg Asp Glu Glu Lys Ser Cys Pro Cys Leu
 35 40 45
 gcc cag gag ggc ccc cag ggt gac ctg ttg acc aaa aca cag gag ctg 314
 Ala Gln Glu Gly Pro Gln Gly Asp Leu Leu Thr Lys Thr Gln Glu Leu
 50 55 60
 ggc cgt gac tac agg acc tgt ctg acg ata gtc caa aaa ctg aag aag 362
 Gly Arg Asp Tyr Arg Thr Cys Leu Thr Ile Val Gln Lys Leu Lys Lys
 65 70 75
 atg gtg gat aag ccc acc cag aga agt gtt tcc aat gct gcg acc cgg 410

Met Val Asp Lys Pro Thr Gln Arg Ser Val Ser Asn Ala Ala Thr Arg
80 85 90

gtg tgt agg acg ggg agg tca cga tgg cgc gac gtc tgc aga aat ttc 458
Val Cys Arg Thr Gly Arg Ser Arg Trp Arg Asp Val Cys Arg Asn Phe
95 100 105 110

atg agg agg tat cag tct aga gtt acc cag ggc ctc gtg gcc gga gaa 506
Met Arg Arg Tyr Gln Ser Arg Val Thr Gln Gly Leu Val Ala Gly Glu
115 120 125

act gcc cag cag atc tgt gag gac ctc agg ttg tgt ata cct tct aca 554
Thr Ala Gln Gln Ile Cys Glu Asp Leu Arg Leu Cys Ile Pro Ser Thr
130 135 140

ggc ccc ctc tga gccctctcac cttgtcctgt ggaagaagca caggctcctg 606
Gly Pro Leu
145

tcctcagatc ccgggaacct cagcaacctc tgccgggtcc tcgcttcctc gatccagaat 666

ccactctcca gtctccctcc cctgactccc tctgtgtgtcc tcccctctca cgagaataaa 726

gtgtcaagca ag 738

<210> 48
<211> 145
<212> PRT
<213> Homo sapiens

<400> 48

Met Ala Thr Trp Ala Leu Leu Leu Leu Ala Ala Met Leu Leu Gly Asn
1 5 10 15

Pro Gly Leu Val Phe Ser Arg Leu Ser Pro Glu Tyr Tyr Asp Leu Ala
20 25 30

Arg Ala His Leu Arg Asp Glu Glu Lys Ser Cys Pro Cys Leu Ala Gln
35 40 45

Glu Gly Pro Gln Gly Asp Leu Leu Thr Lys Thr Gln Glu Leu Gly Arg
50 55 60

Asp Tyr Arg Thr Cys Leu Thr Ile Val Gln Lys Leu Lys Lys Met Val
65 70 75 80

Asp Lys Pro Thr Gln Arg Ser Val Ser Asn Ala Ala Thr Arg Val Cys
85 90 95

Arg Thr Gly Arg Ser Arg Trp Arg Asp Val Cys Arg Asn Phe Met Arg
100 105 110

Arg Tyr Gln Ser Arg Val Thr Gln Gly Leu Val Ala Gly Glu Thr Ala
115 120 125

Gln Gln Ile Cys Glu Asp Leu Arg Leu Cys Ile Pro Ser Thr Gly Pro
 130 135 140

Leu
 145

<210> 49
 <211> 853
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (281)..(670)

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 ctaggattgt gcggggctgg tgagagaaca agatctcttc cgtgttcaag gcagacttcc 180
 tgccccctgc accctgctct ctcccggggc ttgaggtcag tgtgagcccc aagggaaga 240
 acacttctgg aaggagagat ggatttggct gggcctctgg atg gaa ggt ctg gtc 295
 Met Glu Gly Leu Val
 1 5
 ttc tct cgt ctg agc cct gag tac tac gac ccg gca aga gcc cac ctg 343
 Phe Ser Arg Leu Ser Pro Glu Tyr Tyr Asp Pro Ala Arg Ala His Leu
 10 15 20
 cgt gat ggg gag aaa tcc tgc ccg tgc ggg cag gag ggc ccc cag ggt 391
 Arg Asp Gly Glu Lys Ser Cys Pro Cys Gly Gln Glu Gly Pro Gln Gly
 25 30 35
 gac ctg ttg acc aaa aca cag gag ctg ggc cgt gac tac agg acc tgt 439
 Asp Leu Leu Thr Lys Thr Gln Glu Leu Gly Arg Asp Tyr Arg Thr Cys
 40 45 50
 ctg acg ata gtc caa aaa ctg aag aag atg gtg gat aag ccc acc cag 487
 Leu Thr Ile Val Gln Lys Leu Lys Lys Met Val Asp Lys Pro Thr Gln
 55 60 65
 aga agt gtt tcc aat gct gcg acc cgg gtg tgt agg acg ggg agg tca 535
 Arg Ser Val Ser Asn Ala Ala Thr Arg Val Cys Arg Thr Gly Arg Ser
 70 75 80 85
 cga tgg cgc gac gtc tgc aga aat ttc atg agg agg tat cag tct aga 583
 Arg Trp Arg Asp Val Cys Arg Asn Phe Met Arg Arg Tyr Gln Ser Arg
 90 95 100
 gtt atc caa ggc ctc gtg gcc gga gaa act gcc cag cag atc tgt gag 631
 Val Ile Gln Gly Leu Val Ala Gly Glu Thr Ala Gln Gln Ile Cys Glu
 105 110 115
 gac ctc agg ttg tgt ata cct tct aca ggt ccc ctc tga gccctctcac 680
 Asp Leu Arg Leu Cys Ile Pro Ser Thr Gly Pro Leu

120

125

cttgtcctgt ggaagaagca caggctcctg tcctcagatc ccgggaacgt cagcaacctc 740
 tgccggctcc tcgcttcctc gatccagaat ccactctcca gtctccctcc cctgactccc 800
 tctgctgtcc tcccctctca ggggaataaa gtgtcaagca agatttttagc cgc 853

<210> 50
 <211> 129
 <212> PRT
 <213> Homo sapiens

<400> 50

Met Glu Gly Leu Val Phe Ser Arg Leu Ser Pro Glu Tyr Tyr Asp Pro
 1 5 10 15

Ala Arg Ala His Leu Arg Asp Gly Glu Lys Ser Cys Pro Cys Gly Gln
 20 25 30

Glu Gly Pro Gln Gly Asp Leu Leu Thr Lys Thr Gln Glu Leu Gly Arg
 35 40 45

Asp Tyr Arg Thr Cys Leu Thr Ile Val Gln Lys Leu Lys Lys Met Val
 50 55 60

Asp Lys Pro Thr Gln Arg Ser Val Ser Asn Ala Ala Thr Arg Val Cys
 65 70 75 80

Arg Thr Gly Arg Ser Arg Trp Arg Asp Val Cys Arg Asn Phe Met Arg
 85 90 95

Arg Tyr Gln Ser Arg Val Ile Gln Gly Leu Val Ala Gly Glu Thr Ala
 100 105 110

Gln Gln Ile Cys Glu Asp Leu Arg Leu Cys Ile Pro Ser Thr Gly Pro
 115 120 125

Leu

<210> 51
 <211> 2268
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (68) .. (1519)

<400> 51
gctgcaggaa gcagcaggag acgcccggca gccgggacgg tcggggacgc ctgaagaaga 60

agaaaac atg tca gga cac aaa tgc agt tat ccc tgg gac tta cag gat 109
Met Ser Gly His Lys Cys Ser Tyr Pro Trp Asp Leu Gln Asp
1 5 10

cga tat gct caa gat aag tca gtt gta aat aag atg caa cag aaa tat 157
Arg Tyr Ala Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln Lys Tyr
15 20 25 30

tgg gag acg aag cag gcc ttt att aaa gcc aca ggg aag aag gaa gat 205
Trp Glu Thr Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp
35 40 45

gaa cat gtt gtt gcc tct gac gcg gac ctg gat gcc aag cta gag ctg 253
Glu His Val Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu
50 55 60

ttt cat tca att cag aga acc tgt ctg gac tta tcg aaa gca att gta 301
Phe His Ser Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val
65 70 75

ctc tat caa aag agg ata tgt ttc ttg tct caa gaa gaa aac gaa ctg 349
Leu Tyr Gln Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu
80 85 90

gga aaa ttt ctt cga tcc caa ggt ttc caa gat aaa acc aga gca gga 397
Gly Lys Phe Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly
95 100 105 110

aag atg atg caa gcg aca gga aag gcc ctc tgc ttt tct tcc cag caa 445
Lys Met Met Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln
115 120 125

agg ttg gcc tta cga aat cct ttg tgt cga ttt cac caa gaa gtg gag 493
Arg Leu Ala Leu Arg Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu
130 135 140

act ttt cgg cat cgg gcc atc tca gat act tgg ctg acg gtg aac cgc 541
Thr Phe Arg His Arg Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg
145 150 155

atg gaa cag tgc agg acg gaa tat aga gga gca cta tta tgg atg aag 589
Met Glu Gln Cys Arg Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys
160 165 170

gac gtg tct cag gag ctt gat cca gac ctc tac aag caa atg gag aag 637
Asp Val Ser Gln Glu Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys
175 180 185 190

ttc agg aag gta caa aca caa gtg cgc ctt gca aaa aaa aac ttt gac 685
Phe Arg Lys Val Gln Thr Gln Val Arg Leu Ala Lys Lys Asn Phe Asp
195 200 205

aaa ttg aag atg gat gtt tgt caa aaa gtg gat ctt ctt gga gcg agc 733
Lys Leu Lys Met Asp Val Cys Gln Lys Val Asp Leu Leu Gly Ala Ser
210 215 220

aga tgc aat ctc ttg tct cac atg cta gca aca tac cag acc act ctg 781
Arg Cys Asn Leu Leu Ser His Met Leu Ala Thr Tyr Gln Thr Thr Leu
225 230 235

ctt Leu	cat His	ttt Phe	tgg Trp	gag Glu	aaa Lys	act Thr	tct Ser	cac His	act Thr	atg Met	gca Ala	gcc Ala	atc Ile	cat His	gag Glu	829
240245250																
agt Ser	ttc Phe	aaa Lys	ggg Gly	tat Tyr	caa Gln	cca Pro	tat Tyr	gaa Glu	ttt Phe	act Thr	act Thr	tta Leu	aag Lys	agc Ser	tta Leu	877
255260265270																
caa Gln	gac Asp	cct Pro	atg Met	aaa Lys	aaa Lys	tta Leu	gtt Val	gag Glu	aaa Lys	gaa Glu	gag Glu	aag Lys	aag Lys	aaa Lys	atc Ile	925
275280285288																
aac Asn	cag Gln	cag Gln	gaa Glu	agt Ser	aca Thr	gat Asp	gca Ala	gcc Ala	gtg Val	cag Gln	gag Glu	ccg Pro	agc Ser	caa Gln	tta Leu	973
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att Ile	tca Ser	tta Leu	gag Glu	gaa Glu	gaa Glu	aac Asn	cag Gln	cgc Arg	aag Lys	gaa Glu	tcc Ser	tct Ser	agt Ser	ttt Phe	aag Lys	1021
305310315318																
act Thr	gaa Glu	gat Asp	gga Gly	aaa Lys	agt Ser	att Ile	tta Leu	tct Ser	gcc Ala	tta Leu	gac Asp	aaa Lys	ggc Gly	tct Ser	aca Thr	1069
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cat His	act Thr	gca Ala	tgc Cys	tca Ser	gga Gly	ccc Pro	ata Ile	gat Asp	gaa Glu	cta Leu	tta Leu	gac Asp	atg Met	aaa Lys	tct Ser	1117
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gag Glu	gaa Glu	ggg Gly	gct Ala	tgc Cys	ctg Leu	gga Gly	cca Pro	gtg Val	gca Ala	ggg Gly	acc Thr	ccg Pro	gaa Glu	cct Pro	gaa Glu	1165
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ggg Gly	gct Ala	gac Asp	aaa Lys	gat Asp	gac Asp	ctg Leu	ctg Leu	ctg Leu	ttg Leu	agt Ser	gag Glu	atc Ile	ttc Phe	aat Asn	gct Ala	1213
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tcc Ser	tcc Ser	ttg Leu	gaa Glu	gag Glu	ggc Gly	gag Glu	ttc Phe	agc Ser	aaa Lys	gag Glu	tgg Trp	gcc Ala	gct Ala	gtg Val	ttt Phe	1261
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gga Gly	gac Asp	ggc Gly	caa Gln	gtg Val	aag Lys	gag Glu	cca Pro	gtg Val	ccc Pro	act Thr	atg Met	gcc Ala	ctg Leu	gga Gly	gag Glu	1309
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cca Pro	gac Asp	ccc Pro	aag Lys	gcc Ala	cag Gln	aca Thr	ggc Gly	tca Ser	ggg Gly	ttc Phe	ctt Leu	cct Pro	tcg Ser	cag Gln	ctt Leu	1357
415420425428																
tta Leu	gac Asp	caa Gln	aat Asn	atg Met	aaa Lys	gac Asp	tta Leu	cag Gln	gcc Ala	tcg Ser	cta Leu	caa Gln	gaa Glu	cct Pro	gct Ala	1405
435440445448																
aag Lys	gct Ala	gcc Ala	tca Ser	gac Asp	ctg Leu	act Thr	gcc Ala	tgg Trp	ttc Phe	agc Ser	ctc Leu	ttc Phe	gct Ala	gac Asp	ctc Leu	1453
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gac Asp	cca Pro	ctc Leu	tca Ser	aat Asn	cct Pro	gat Asp	gct Ala	gtt Val	ggg Gly	aaa Lys	acc Thr	gat Asp	aaa Lys	gaa Glu	cac His	1501
465470475478																
gaa Glu	ttg Leu	ctc Leu	aat Asn	gca Ala	tga	atctgtaccc	ttcgggagggg	cactcacatg								1549

480

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ccgccccag cagctcccct gggggctagc agaagtataa agtgatcagt atgctgtttt 1609
aataattatg tgccatttta ataaaatgaa aggggtcaacg gccctgttta tattggtata 1669
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tgtccccaca gcaggtgcct ggtggggccac gtgttctcac actggtggag gagctgggct 2089
tctgtccaag gcacaaacct tactatggaa agcagccata tttgcagata ccactgtctc 2149
cttttgcct cttctgggt ggaattcaaa agcatgtatt tctgaagcct cttgtgacat 2209
tgtttttttt ttttttttaa ttaaacagaa aagatatttg acatgcaaaa aaaaaaaaaa 2268

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<210> 52
<211> 483
<212> PRT
<213> Homo sapiens

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<400> 52

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Met Ser Gly His Lys Cys Ser Tyr Pro Trp Asp Leu Gln Asp Arg Tyr
1           5           10           15

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Ala Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln Lys Tyr Trp Glu
          20           25           30

```

```

Thr Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His
          35           40           45

```

```

Val Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His
50           55           60

```

```

Ser Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr
65           70           75           80

```

```

Gln Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys
          85           90           95

```

```

Phe Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met
          100          105          110

```

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Met Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu

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

Asp Lys Asp Asp Leu Leu Leu Leu Ser Glu Ile Phe Asn Ala Ser Ser
 370 375 380

Leu Glu Glu Gly Glu Phe Ser Lys Glu Trp Ala Ala Val Phe Gly Asp
 385 390 395 400

Gly Gln Val Lys Glu Pro Val Pro Thr Met Ala Leu Gly Glu Pro Asp
 405 410 415

Pro Lys Ala Gln Thr Gly Ser Gly Phe Leu Pro Ser Gln Leu Leu Asp
 420 425 430

Gln Asn Met Lys Asp Leu Gln Ala Ser Leu Gln Glu Pro Ala Lys Ala
 435 440 445

Ala Ser Asp Leu Thr Ala Trp Phe Ser Leu Phe Ala Asp Leu Asp Pro
 450 455 460

Leu Ser Asn Pro Asp Ala Val Gly Lys Thr Asp Lys Glu His Glu Leu
 465 470 475 480

Leu Asn Ala

<210> 53
 <211> 2396
 <212> DNA
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 taatataact tctctctca tgcttttttc ctgcccttc tcccaaata atcaacaata 180
 gaagaagaag aaaac atg tca gga cac aaa tgc agt tat ccc tgg gac tta 231
 Met Ser Gly His Lys Cys Ser Tyr Pro Trp Asp Leu
 1 5 10
 cag gat cga tat gct caa gat aag tca gtt gta aat aag atg caa cag 279
 Gln Asp Arg Tyr Ala Gln Asp Lys Ser Val Val Asn Lys Met Gln Gln
 15 20 25
 aaa tat tgg gag acg aag cag gcc ttt att aaa gcc aca ggg aag aag 327
 Lys Tyr Trp Glu Thr Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys
 30 35 40
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Glu 45	Asp	Glu	His	Val	Val 50	Ala	Ser	Asp	Ala	Asp 55	Leu	Asp	Ala	Lys	Leu 60	
gag	ctg	ttt	cat	tca	att	cag	aga	acc	tgt	ctg	gac	tta	tcg	aaa	gca	423
Glu	Leu	Phe	His	Ser 65	Ile	Gln	Arg	Thr	Cys 70	Leu	Asp	Leu	Ser	Lys 75	Ala	
att	gta	ctc	tat	caa	aag	agg	ata	tgt	ttc	ttg	tct	caa	gaa	gaa	aac	471
Ile	Val	Leu	Tyr 80	Gln	Lys	Arg	Ile	Cys 85	Phe	Leu	Ser	Gln	Glu	Glu	Asn	
gaa	ctg	gga	aaa	ttt	ctt	cga	tcc	caa	ggt	ttc	caa	gat	aaa	acc	aga	519
Glu	Leu	Gly 95	Lys	Phe	Leu	Arg	Ser 100	Gln	Gly	Phe	Gln	Asp	Lys	Thr	Arg	
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Ala	Gly 110	Lys	Met	Met	Gln	Ala	Thr 115	Gly	Lys	Ala	Leu	Cys	Phe	Ser	Ser	
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Gln	Gln	Arg	Leu	Ala	Leu	Arg	Asn	Pro	Leu	Cys 135	Arg	Phe	His	Gln	Glu 140	
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Val	Glu	Thr	Phe	Arg 145	His	Arg	Ala	Ile	Ser 150	Asp	Thr	Trp	Leu	Thr	Val 155	
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Asn	Arg	Met	Glu 160	Gln	Cys	Arg	Thr	Glu 165	Tyr	Arg	Gly	Ala	Leu	Leu	Trp 170	
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Glu	Lys 190	Phe	Arg	Lys	Val	Gln	Thr 195	Gln	Val	Arg	Leu	Ala	Lys	Lys	Asn	
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Phe	Asp	Lys	Leu	Lys	Met 210	Asp	Val	Cys	Gln	Lys 215	Val	Asp	Leu	Leu	Gly 220	
gcg	agc	aga	tgc	aat	ctc	ttg	tct	cac	atg	cta	gca	aca	tac	cag	acc	903
Ala	Ser	Arg	Cys	Asn 225	Leu	Leu	Ser	His	Met 230	Leu	Ala	Thr	Tyr	Gln	Thr 235	
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Thr	Leu	Leu	His 240	Phe	Trp	Glu	Lys	Thr 245	Ser	His	Thr	Met	Ala	Ala	Ile 250	
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His	Glu	Ser 255	Phe	Lys	Gly	Tyr	Gln	Pro	Tyr	Glu	Phe	Thr	Thr	Leu	Lys	
agc	tta	caa	gac	cct	atg	aaa	aaa	tta	gtt	gag	aaa	gaa	gag	aag	aag	1047
Ser	Leu	Gln	Asp	Pro	Met	Lys 275	Lys	Leu	Val	Glu	Lys 280	Glu	Glu	Lys	Lys	
aaa	atc	aac	cag	cag	gaa	agt	aca	gat	gca	gcc	gtg	cag	gag	ccg	agc	1095
Lys	Ile	Asn	Gln	Gln	Glu	Ser 290	Thr	Asp	Ala	Ala	Val 295	Gln	Glu	Pro	Ser 300	

caa tta att tca tta gag gaa gaa aac cag cgc aag gaa tcc tct agt	1143
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Phe Lys Thr Glu Asp Gly Lys Ser Ile Leu Ser Ala Leu Asp Lys Gly	
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tct aca cat act gca tgc tca gga ccc ata gat gaa cta tta gac atg	1239
Ser Thr His Thr Ala Cys Ser Gly Pro Ile Asp Glu Leu Leu Asp Met	
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Lys Ser Glu Glu Gly Ala Cys Leu Gly Pro Val Ala Gly Thr Pro Glu	
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cct gaa ggt gct gac aaa gat gac ctg ctg ctg ttg agt gag atc ttc	1335
Pro Glu Gly Ala Asp Lys Asp Asp Leu Leu Leu Leu Ser Glu Ile Phe	
365 370 375 380	
aat gct tcc tcc ttg gaa gag ggc gag ttc agc aaa gag tgg gcc gct	1383
Asn Ala Ser Ser Leu Glu Glu Gly Glu Phe Ser Lys Glu Trp Ala Ala	
385 390 395	
gtg ttt gga gac ggc caa gtg aag gag cca gtg ccc act atg gcc ctg	1431
Val Phe Gly Asp Gly Gln Val Lys Glu Pro Val Pro Thr Met Ala Leu	
400 405 410	
gga gag cca gac ccc aag gcc cag aca ggc tca ggt ttc ctt cct tcg	1479
Gly Glu Pro Asp Pro Lys Ala Gln Thr Gly Ser Gly Phe Leu Pro Ser	
415 420 425	
cag ctt tta gac caa aat atg aaa gac tta cag gcc tcg cta caa gaa	1527
Gln Leu Leu Asp Gln Asn Met Lys Asp Leu Gln Ala Ser Leu Gln Glu	
430 435 440	
cct gct aag gct gcc tca gac ctg act gcc tgg ttc agc ctc ttc gct	1575
Pro Ala Lys Ala Ala Ser Asp Leu Thr Ala Trp Phe Ser Leu Phe Ala	
445 450 455 460	
gac ctc gac cca ctc tca aat cct gat gct gtt ggg aaa acc gat aaa	1623
Asp Leu Asp Pro Leu Ser Asn Pro Asp Ala Val Gly Lys Thr Asp Lys	
465 470 475	
gaa cac gaa ttg ctc aat gca tga atctgtaccc ttcgggaggg cactcacatg	1677
Glu His Glu Leu Leu Asn Ala	
480	
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Thr Lys Gln Ala Phe Ile Lys Ala Thr Gly Lys Lys Glu Asp Glu His
 35 40 45

Val Val Ala Ser Asp Ala Asp Leu Asp Ala Lys Leu Glu Leu Phe His
 50 55 60

Ser Ile Gln Arg Thr Cys Leu Asp Leu Ser Lys Ala Ile Val Leu Tyr
 65 70 75 80

Gln Lys Arg Ile Cys Phe Leu Ser Gln Glu Glu Asn Glu Leu Gly Lys
 85 90 95

Phe Leu Arg Ser Gln Gly Phe Gln Asp Lys Thr Arg Ala Gly Lys Met
 100 105 110

Met Gln Ala Thr Gly Lys Ala Leu Cys Phe Ser Ser Gln Gln Arg Leu
 115 120 125

Ala Leu Arg Asn Pro Leu Cys Arg Phe His Gln Glu Val Glu Thr Phe
 130 135 140

Arg His Arg Ala Ile Ser Asp Thr Trp Leu Thr Val Asn Arg Met Glu
 145 150 155 160

Gln Cys Arg Thr Glu Tyr Arg Gly Ala Leu Leu Trp Met Lys Asp Val
 165 170 175

Ser Gln Glu Leu Asp Pro Asp Leu Tyr Lys Gln Met Glu Lys Phe Arg

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

Gln Asn Met Lys Asp Leu Gln Ala Ser Leu Gln Glu Pro Ala Lys Ala
 435 440 445

Ala Ser Asp Leu Thr Ala Trp Phe Ser Leu Phe Ala Asp Leu Asp Pro
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Leu Ser Asn Pro Asp Ala Val Gly Lys Thr Asp Lys Glu His Glu Leu
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Leu Asn Ala

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 Met Thr Ile Leu Gly Thr Thr Phe
 1 5
 ggc atg gtt ttt tct tta ctt caa gtc gtt tct gga gaa agt ggc tat 161
 Gly Met Val Phe Ser Leu Leu Gln Val Val Ser Gly Glu Ser Gly Tyr
 10 15 20
 gct caa aat gga gac ttg gaa gat gca gaa ctg gat gac tac tca ttc 209
 Ala Gln Asn Gly Asp Leu Glu Asp Ala Glu Leu Asp Asp Tyr Ser Phe
 25 30 35 40
 tca tgc tat agc cag ttg gaa gtg aat gga tcg cag cac tca ctg acc 257
 Ser Cys Tyr Ser Gln Leu Glu Val Asn Gly Ser Gln His Ser Leu Thr
 45 50 55
 tgt gct ttt gag gac cca gat gtc aac atc acc aat ctg gaa ttt gaa 305
 Cys Ala Phe Glu Asp Pro Asp Val Asn Ile Thr Asn Leu Glu Phe Glu
 60 65 70
 ata tgt ggg gcc ctc gtg gag gta aag tgc ctg aat ttc agg aaa cta 353
 Ile Cys Gly Ala Leu Val Glu Val Lys Cys Leu Asn Phe Arg Lys Leu
 75 80 85
 caa gag ata tat ttc atc gag aca aag aaa ttc tta ctg att gga aag 401
 Gln Glu Ile Tyr Phe Ile Glu Thr Lys Lys Phe Leu Leu Ile Gly Lys
 90 95 100
 agc aat ata tgt gtg aag gtt gga gaa aag agt cta acc tgc aaa aaa 449
 Ser Asn Ile Cys Val Lys Val Gly Glu Lys Ser Leu Thr Cys Lys Lys
 105 110 115 120
 ata gac cta acc act ata gtt aaa cct gag gct cct ttt gac ctg agt 497

Ile	Asp	Leu	Thr	Thr	Ile	Val	Lys	Pro	Glu	Ala	Pro	Phe	Asp	Leu	Ser	
				125					130					135		
gtc	gtc	tat	cgg	gaa	gga	gcc	aat	gac	ttt	gtg	gtg	aca	ttt	aat	aca	545
Val	Val	Tyr	Arg	Glu	Gly	Ala	Asn	Asp	Phe	Val	Val	Thr	Phe	Asn	Thr	
			140					145					150			
tca	cac	ttg	caa	aag	aag	tat	gta	aaa	gtt	tta	atg	cac	gat	gta	gct	593
Ser	His	Leu	Gln	Lys	Lys	Tyr	Val	Lys	Val	Leu	Met	His	Asp	Val	Ala	
		155					160					165				
tac	cgc	cag	gaa	aag	gat	gaa	aac	aaa	tgg	acg	cat	gtg	aat	tta	tcc	641
Tyr	Arg	Gln	Glu	Lys	Asp	Glu	Asn	Lys	Trp	Thr	His	Val	Asn	Leu	Ser	
	170					175					180					
agc	aca	aag	ctg	aca	ctc	ctg	cag	aga	aag	ctc	caa	ccg	gca	gca	atg	689
Ser	Thr	Lys	Leu	Thr	Leu	Leu	Gln	Arg	Lys	Leu	Gln	Pro	Ala	Ala	Met	
185					190					195					200	
tat	gag	att	aaa	gtt	cga	tcc	atc	cct	gat	cac	tat	ttt	aaa	ggc	ttc	737
Tyr	Glu	Ile	Lys	Val	Arg	Ser	Ile	Pro	Asp	His	Tyr	Phe	Lys	Gly	Phe	
			205					210					215			
tgg	agt	gaa	tgg	agt	cca	agt	tat	tac	ttc	aga	act	cca	gag	atc	aat	785
Trp	Ser	Glu	Trp	Ser	Pro	Ser	Tyr	Tyr	Phe	Arg	Thr	Pro	Glu	Ile	Asn	
		220					225					230				
aat	agc	tca	ggg	gag	atg	gat	cct	atc	tta	cta	acc	atc	agc	att	ttg	833
Asn	Ser	Ser	Gly	Glu	Met	Asp	Pro	Ile	Leu	Leu	Thr	Ile	Ser	Ile	Leu	
		235					240					245				
agt	ttt	ttc	tct	gtc	gct	ctg	ttg	gtc	atc	ttg	gcc	tgt	gtg	tta	tgg	881
Ser	Phe	Phe	Ser	Val	Ala	Leu	Leu	Val	Ile	Leu	Ala	Cys	Val	Leu	Trp	
	250					255				260						
aaa	aaa	agg	att	aag	cct	atc	gta	tgg	ccc	agt	ctc	ccc	gat	cat	aag	929
Lys	Lys	Arg	Ile	Lys	Pro	Ile	Val	Trp	Pro	Ser	Leu	Pro	Asp	His	Lys	
265					270				275						280	
aag	act	ctg	gaa	cat	ctt	tgt	aag	aaa	cca	aga	aaa	aat	tta	aat	gtg	977
Lys	Thr	Leu	Glu	His	Leu	Cys	Lys	Lys	Pro	Arg	Lys	Asn	Leu	Asn	Val	
			285				290					295				
agt	ttc	aat	cct	gaa	agt	ttc	ctg	gac	tgc	cag	att	cat	agg	gtg	gat	1025
Ser	Phe	Asn	Pro	Glu	Ser	Phe	Leu	Asp	Cys	Gln	Ile	His	Arg	Val	Asp	
		300					305					310				
gac	att	caa	gct	aga	gat	gaa	gtg	gaa	ggc	ttt	ctg	caa	gat	acg	ttt	1073
Asp	Ile	Gln	Ala	Arg	Asp	Glu	Val	Glu	Gly	Phe	Leu	Gln	Asp	Thr	Phe	
		315					320					325				
cct	cag	caa	cta	gaa	gaa	tct	gag	aag	cag	agg	ctt	gga	ggg	gat	gtg	1121
Pro	Gln	Gln	Leu	Glu	Glu	Ser	Glu	Lys	Gln	Arg	Leu	Gly	Gly	Asp	Val	
	330					335					340					
cag	agc	ccc	aac	tgc	cca	tct	gag	gat	gta	gtc	atc	act	cca	gaa	agc	1169
Gln	Ser	Pro	Asn	Cys	Pro	Ser	Glu	Asp	Val	Val	Ile	Thr	Pro	Glu	Ser	
345					350				355						360	
ttt	gga	aga	gat	tca	tcc	ctc	aca	tgc	ctg	gct	ggg	aat	gtc	agt	gca	1217
Phe	Gly	Arg	Asp	Ser	Ser	Leu	Thr	Cys	Leu	Ala	Gly	Asn	Val	Ser	Ala	

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Cys Asp Ala Pro Ile Leu Ser Ser Ser Arg Ser Leu Asp Cys Arg Glu				
	380	385	390	
agt ggc aag aat ggg cct cat gtg tac cag gac ctc ctg ctt agc ctt				1313
Ser Gly Lys Asn Gly Pro His Val Tyr Gln Asp Leu Leu Leu Ser Leu				
	395	400	405	
ggg act aca aac agc acg ctg ccc cct cca ttt tct ctc caa tct gga				1361
Gly Thr Thr Asn Ser Thr Leu Pro Pro Pro Phe Ser Leu Gln Ser Gly				
	410	415	420	
atc ctg aca ttg aac cca gtt gct cag ggt cag ccc att ctt act tcc				1409
Ile Leu Thr Leu Asn Pro Val Ala Gln Gly Gln Pro Ile Leu Thr Ser				
	425	430	435	440
ctg gga tca aat caa gaa gaa gca tat gtc acc atg tcc agc ttc tac				1457
Leu Gly Ser Asn Gln Glu Glu Ala Tyr Val Thr Met Ser Ser Phe Tyr				
	445	450	455	
caa aac cag tga agtgtaagaa acccagactg aacttaccgt gagcgacaaa				1509
Gln Asn Gln				
gatgatttaa aagggaagtc tagagttcct agtctccctc acagcacaga gaagacaaaa				1569
ttagcaaaac ccactacac agtctgcaag attctgaaac attgctttga ccactcttcc				1629
tgagttcagt ggcaactcaac atgagtcaag agcatcctgc ttctaccatg tggatttggt				1689
cacaagggtt aaggtgaccc aatgattcag ctatttataaa aaaaaagagg aaagaatgaa				1749
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Ala Glu Leu Asp Asp Tyr Ser Phe Ser Cys Tyr Ser Gln Leu Glu Val				
35 40 45				
Asn Gly Ser Gln His Ser Leu Thr Cys Ala Phe Glu Asp Pro Asp Val				
50 55 60				
Asn Ile Thr Asn Leu Glu Phe Glu Ile Cys Gly Ala Leu Val Glu Val				
65 70 75 80				

Lys Cys Leu Asn Phe Arg Lys Leu Gln Glu Ile Tyr Phe Ile Glu Thr
85 90 95

Lys Lys Phe Leu Leu Ile Gly Lys Ser Asn Ile Cys Val Lys Val Gly
100 105 110

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

Pro Glu Ala Pro Phe Asp Leu Ser Val Val Tyr Arg Glu Gly Ala Asn
130 135 140

Asp Phe Val Val Thr Phe Asn Thr Ser His Leu Gln Lys Lys Tyr Val
145 150 155 160

Lys Val Leu Met His Asp Val Ala Tyr Arg Gln Glu Lys Asp Glu Asn
165 170 175

Lys Trp Thr His Val Asn Leu Ser Ser Thr Lys Leu Thr Leu Leu Gln
180 185 190

Arg Lys Leu Gln Pro Ala Ala Met Tyr Glu Ile Lys Val Arg Ser Ile
195 200 205

Pro Asp His Tyr Phe Lys Gly Phe Trp Ser Glu Trp Ser Pro Ser Tyr
210 215 220

Tyr Phe Arg Thr Pro Glu Ile Asn Asn Ser Ser Gly Glu Met Asp Pro
225 230 235 240

Ile Leu Leu Thr Ile Ser Ile Leu Ser Phe Phe Ser Val Ala Leu Leu
245 250 255

Val Ile Leu Ala Cys Val Leu Trp Lys Lys Arg Ile Lys Pro Ile Val
260 265 270

Trp Pro Ser Leu Pro Asp His Lys Lys Thr Leu Glu His Leu Cys Lys
275 280 285

Lys Pro Arg Lys Asn Leu Asn Val Ser Phe Asn Pro Glu Ser Phe Leu
290 295 300

Asp Cys Gln Ile His Arg Val Asp Asp Ile Gln Ala Arg Asp Glu Val
305 310 315 320

Glu Gly Phe Leu Gln Asp Thr Phe Pro Gln Gln Leu Glu Glu Ser Glu

325								330				335				
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			340				345						350			
Asp	Val	Val	Ile	Thr	Pro	Glu	Ser	Phe	Gly	Arg	Asp	Ser	Ser	Leu	Thr	
			355				360						365			
Cys	Leu	Ala	Gly	Asn	Val	Ser	Ala	Cys	Asp	Ala	Pro	Ile	Leu	Ser	Ser	
			370				375						380			
Ser	Arg	Ser	Leu	Asp	Cys	Arg	Glu	Ser	Gly	Lys	Asn	Gly	Pro	His	Val	
385						390						395			400	
Tyr	Gln	Asp	Leu	Leu	Leu	Ser	Leu	Gly	Thr	Thr	Asn	Ser	Thr	Leu	Pro	
			405						410						415	
Pro	Pro	Phe	Ser	Leu	Gln	Ser	Gly	Ile	Leu	Thr	Leu	Asn	Pro	Val	Ala	
			420						425						430	
Gln	Gly	Gln	Pro	Ile	Leu	Thr	Ser	Leu	Gly	Ser	Asn	Gln	Glu	Glu	Ala	
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450						455										

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cag acc ctg tcc tat gac ctt acc gca gtg acc ttg gac ctg tac cac Gln Thr Leu Ser Tyr Asp Leu Thr Ala Val Thr Leu Asp Leu Tyr His 80 85 90				350
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gtg aaa cca tct gtc gct tcc cga agt aac aag ggg atg tgg tct aaa Val Lys Pro Ser Val Ala Ser Arg Ser Asn Lys Gly Met Trp Ser Lys 205 210 215 220				734
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Gly	Gln	Asp	Asp	Ser	Gly	Ile	Asp	Leu	Val	Gln	Asn	Ser	Glu	Gly	Arg	
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Ala	Gly	Asp	Thr	Gln	Gly	Gly	Ser	Ala	Leu	Gly	His	His	Ser	Pro	Pro	
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Pro Asn Gln Ser Glu Ser Thr Cys Tyr Glu Val Ala Leu Leu Arg Tyr
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Gly Ile Glu Ser Trp Asn Ser Ile Ser Asn Cys Ser Gln Thr Leu Ser
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Tyr Asp Leu Thr Ala Val Thr Leu Asp Leu Tyr His Ser Asn Gly Tyr
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Arg Ala Arg Val Arg Ala Val Asp Gly Ser Arg His Ser Asn Trp Thr
100 105 110

Val Thr Asn Thr Arg Phe Ser Val Asp Glu Val Thr Leu Thr Val Gly
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Ser Val Asn Leu Glu Ile His Asn Gly Phe Ile Leu Gly Lys Ile Gln
130 135 140

Leu Pro Arg Pro Lys Met Ala Pro Ala Asn Asp Thr Tyr Glu Ser Ile
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Phe Ser His Phe Arg Glu Tyr Glu Ile Ala Ile Arg Lys Val Pro Gly
165 170 175

Asn Phe Thr Phe Thr His Lys Lys Val Lys His Glu Asn Phe Ser Leu
180 185 190

Leu Thr Ser Gly Glu Val Gly Glu Phe Cys Val Gln Val Lys Pro Ser
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Val Ala Ser Arg Ser Asn Lys Gly Met Trp Ser Lys Glu Glu Cys Ile
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Ser Leu Thr Arg Gln Tyr Phe Thr Val Thr Asn Val Ile Ile Phe Phe
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Ala Phe Val Leu Leu Leu Ser Gly Ala Leu Ala Tyr Cys Leu Ala Leu
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Gln Leu Tyr Val Arg Arg Arg Lys Lys Leu Pro Ser Val Leu Leu Phe
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Lys Lys Pro Ser Pro Phe Ile Phe Ile Ser Gln Arg Pro Ser Pro Glu
 275 280 285

Thr Gln Asp Thr Ile His Pro Leu Asp Glu Glu Ala Phe Leu Lys Val
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Ser Pro Glu Leu Lys Asn Leu Asp Leu His Gly Ser Thr Asp Ser Gly
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Phe Gly Ser Thr Lys Pro Ser Leu Gln Thr Glu Glu Pro Gln Phe Leu
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Leu Pro Asp Pro His Pro Gln Ala Asp Arg Thr Leu Gly Asn Gly Glu
 340 345 350

Pro Pro Val Leu Gly Asp Ser Cys Ser Ser Gly Ser Ser Asn Ser Thr
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Asp Ser Gly Ile Cys Leu Gln Glu Pro Ser Leu Ser Pro Ser Thr Gly
 370 375 380

Pro Thr Trp Glu Gln Gln Val Gly Ser Asn Ser Arg Gly Gln Asp Asp
 385 390 395 400

Ser Gly Ile Asp Leu Val Gln Asn Ser Glu Gly Arg Ala Gly Asp Thr
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Gln Gly Gly Ser Ala Leu Gly His His Ser Pro Pro Glu Pro Glu Val
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Pro Gly Glu Glu Asp Pro Ala Ala Val Ala Phe Gln Gly Tyr Leu Arg
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Gln Thr Arg Cys Ala Glu Glu Lys Ala Thr Lys Thr Gly Cys Leu Glu
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Glu Glu Ser Pro Leu Thr Asp Gly Leu Gly Pro Lys Phe Gly Arg Cys
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Leu Val Asp Glu Ala Gly Leu His Pro Pro Ala Leu Ala Lys Gly Tyr
485 490 495

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

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gaa gaa aat gaa cgg gaa tct gga gag aca ggg cca tgt atg gaa tat Glu Glu Asn Glu Arg Glu Ser Gly Glu Thr Gly Pro Cys Met Glu Tyr 70 75 80			298
ttg ctt cat cac aag atc ttg gaa aca tta tat acc ttg ggg aaa gct Leu Leu His His Lys Ile Leu Glu Thr Leu Tyr Thr Leu Gly Lys Ala 85 90 95			346
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Leu 290	Pro	Glu	Pro	Ala	Ala	Ala	Lys	Cys	Leu	Thr	Gln	Ser	Thr	Cys	Leu 305	
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Cys	Glu	Leu	Leu	Thr	Asp	Arg	Leu	Ala	Ser	Leu	Tyr	Lys	Ala	Leu	Pro	
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cag	tca	gtg	gat	ccg	tta	gat	att	gaa	acc	gtg	gaa	gca	att	aac	tgg	1066
Gln	Ser	Val	Asp	Pro	Leu	Asp	Ile	Glu	Thr	Val	Glu	Ala	Ile	Asn	Trp	
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His	Pro	Leu	Arg	His	Arg	Leu	Ile	Glu	His	Cys	Asp	His	Ile	Ser	Asp	
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Pro	Asn	Glu	His	Ile	Leu	Tyr	Asn	Leu	Val	Leu	Arg	Asn	Leu	Glu	Glu	
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Asp Thr Asn Ile Pro Ser His Leu Glu Gln Met Leu Asp Ile Leu Val
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Gln Glu Glu Asn Glu Arg Glu Ser Gly Glu Thr Gly Pro Cys Met Glu
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Tyr Leu Leu His His Lys Ile Leu Glu Thr Leu Tyr Thr Leu Gly Lys
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Arg His Pro Leu Arg His Arg Leu Ile Glu His Cys Asp His Ile Ser
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Asp Glu Ile Ser Ile Met Thr Leu Arg Met Phe Glu His Leu Leu Gln
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Lys Pro Asn Glu His Ile Leu Tyr Asn Leu Val Leu Arg Asn Leu Glu
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Glu Arg Asn Tyr Thr Glu Tyr Lys Pro Leu Cys Pro Glu Asp Lys Asp
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Val Val Glu Asn Gly Leu Ile Ala Gly Ala Val Asp Leu Glu Glu Asp
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Trp Leu Ser Ser Ser Pro Pro Ala Thr Pro Asp His Pro Lys Asn Asp
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Gly Lys Thr Glu Val His Lys Ile Val Asn Ser Phe Leu Cys Leu Val
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Pro Asp Asp Ala Lys Ser Ser Tyr His Val Glu Gly Thr Gly Tyr Asp
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Thr Tyr Leu Arg Asp Ala His Gly Gln Phe Arg Asp Tyr Cys Ala Ile
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Cys Leu Arg Trp Glu Trp Pro Gly Ser Pro Lys Ala Leu Glu Lys Cys
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Asn Leu Glu Ala Ala Phe Phe Glu Gly His Phe Leu Lys Val Leu Phe
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Asp Arg Met Gly Arg Ile Leu Asp Gln Pro Tyr Asp Val Asn Leu Gln
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Val Thr Ser Val Leu Ser Arg Leu Ser Leu Phe Pro His Pro His Ile
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His Glu Tyr Leu Leu Asp Pro Tyr Val Asn Leu Ala Pro Gly Cys Arg
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Ser Leu Phe Ser Val Ile Val Arg Val Val Gly Asp Leu Met Leu Arg
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Ile Gln Arg Ile Gln Asp Phe Thr Pro Lys Leu Leu Leu Val Arg Lys
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gtttgtcagc	ctcctgttca	tgttccccac	acacctgaag	gtggtagaat	cttttcagcc	4209
tcttagccag	tgagctaaat	atggctaagc	acaggtcata	agagcaccta	aggccagcat	4269
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aataagaaaa	aatcaaadc	gaagtcagcc	tgctggaaaa	gtgatcacat	ggcagttgca	5169
gtaacttgta	tggaagaga	aatgcaatg	agcccagtta	ctgcacttgc	cactaccatg	5229
ctgtccatgg	aaggaataat	cagcagttca	gttgtcacia	gccgcccttg	aagaaaacgc	5289
agcaaaatat	tttaaaatga	agatattgca	gtccccagag	ccagtgaagg	tttcttttgg	5349
taaaatgaaa	ttgtgccatt	gtcaaagtac	cccgtagtga	tgagcactga	ctggttcact	5409
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gacctaaaga	agtctctgca	gccagatagt	acatggtgtc	tccacaaaac	taggcattct	5829
ggagattgcc	cagaaagga	tgtgagggga	ccgttaagat	ctgtcttgct	tatctcatgc	5889
actcacattc	cttcagcctc	ctggagttcc	tgataaaagg	aagccagggg	gttgacattt	5949
tttagctatt	gatttcccaa	tagcttgtgg	atcagttgta	caccacact	tccttctctg	6009
cctaattccg	tttttctgga	aaaagtagta	tgcccatgta	tgtgtgtttt	tcttaacaca	6069

```

gggccatgaa agtttggtt cctgggttga tgtctgttgc gtggcctgga aaccagggag 6129
cagcaactat tgagatggtt tctgtgttca gtgaaaaatt ctatttcatt gagacaattt 6189
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gattacctgc 6259

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<210> 62
<211> 384
<212> PRT
<213> Homo sapiens

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<400> 62
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1           5           10           15

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```

His Asn Val Thr Trp Ala Asp Leu Lys Asn Thr Glu Glu Ala Thr Phe
20           25           30

```

```

Pro Gln Ala Glu Asp Leu Tyr Leu Ala Phe Pro Leu Ala Phe Cys Ile
35           40           45

```

```

Phe Met Val Arg Leu Ile Phe Glu Arg Phe Val Ala Lys Pro Cys Ala
50           55           60

```

```

Ile Ala Leu Asn Ile Gln Ala Asn Gly Pro Gln Ile Ala Pro Pro Asn
65           70           75           80

```

```

Ala Ile Leu Glu Lys Val Phe Thr Ala Ile Thr Lys His Pro Asp Glu
85           90           95

```

```

Lys Arg Leu Glu Gly Leu Ser Lys Gln Leu Asp Trp Asp Val Arg Ser
100          105          110

```

```

Ile Gln Arg Trp Phe Arg Gln Arg Arg Asn Gln Glu Lys Pro Ser Thr
115          120          125

```

```

Leu Thr Arg Phe Cys Glu Ser Met Trp Arg Phe Ser Phe Tyr Leu Tyr
130          135          140

```

```

Val Phe Thr Tyr Gly Val Arg Phe Leu Lys Lys Thr Pro Trp Leu Trp
145          150          155          160

```

```

Asn Thr Arg His Cys Trp Tyr Asn Tyr Pro Tyr Gln Pro Leu Thr Thr
165          170          175

```

```

Asp Leu His Tyr Tyr Tyr Ile Leu Glu Leu Ser Phe Tyr Trp Ser Leu

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

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<210> 63
<211> 2133
<212> DNA
<213> Homo sapiens
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<222> (179) .. (1102)
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gagtcctatc ctacgcggcg gaagagtgtg ccctttgact tgcacgtctt acctacctct	120
gccatcctct accagccgca actgcgaggg ctggagccaa cttcaggact gattgatac	178
atg act tct ata aag gag cag gca gca att agc agg ctc tta agt ttt Met Thr Ser Ile Lys Glu Gln Ala Ala Ile Ser Arg Leu Leu Ser Phe 1 5 10 15	226
tta cag gag tgg gac aac gct ggc aaa gtc gca agg agt cac atc ctc Leu Gln Glu Trp Asp Asn Ala Gly Lys Val Ala Arg Ser His Ile Leu 20 25 30	274
gac aag ttc att gaa acc aac caa ggc aag act gcc cct gaa ctg gag Asp Lys Phe Ile Glu Thr Asn Gln Gly Lys Thr Ala Pro Glu Leu Glu 35 40 45	322
cag gag ttt tcc cag gga gcc agt ttg ttc ctg gta cgc ttg acc acc Gln Glu Phe Ser Gln Gly Ala Ser Leu Phe Leu Val Arg Leu Thr Thr 50 55 60	370
tcg ctt aga atc acc tat atg act gac tca tgt tta gaa aag ctt ctc Ser Leu Arg Ile Thr Tyr Met Thr Asp Ser Cys Leu Glu Lys Leu Leu 65 70 75 80	418
agg tcc att ggc atc ttc tta tca gct gta agc agt aat cgg tac ctt Arg Ser Ile Gly Ile Phe Leu Ser Ala Val Ser Ser Asn Arg Tyr Leu 85 90 95	466
ata gaa ttt ctt gag gtt gga ggt gtc cta acc ctc ttg gaa ata ctt Ile Glu Phe Leu Glu Val Gly Gly Val Leu Thr Leu Leu Glu Ile Leu 100 105 110	514
ggg cta gag aag atc aag gag gag gcc aag aag gaa tct gtc aaa cta Gly Leu Glu Lys Ile Lys Glu Glu Ala Lys Lys Glu Ser Val Lys Leu 115 120 125	562
ctt cag gtt att gcg aac tct ggc agg aca tac aag gaa ctc att tgt Leu Gln Val Ile Ala Asn Ser Gly Arg Thr Tyr Lys Glu Leu Ile Cys 130 135 140	610
gaa agc tat ggt gta cga tcc ata gca gaa ttt ttg gca aag tct aag Glu Ser Tyr Gly Val Arg Ser Ile Ala Glu Phe Leu Ala Lys Ser Lys 145 150 155 160	658
tca gaa gag acc cag gag gaa gtg cag gtt ctg ttg gat tct ttg gtc Ser Glu Glu Thr Gln Glu Glu Val Gln Val Leu Leu Asp Ser Leu Val 165 170 175	706
cac ggc aat ccc aag tac caa aat caa gtg tat aaa ggt cta ata gct His Gly Asn Pro Lys Tyr Gln Asn Gln Val Tyr Lys Gly Leu Ile Ala 180 185 190	754
ttg ctg ccc tgc gag tcc cca aaa gcc cag cag ctg tcc ctg cag act Leu Leu Pro Cys Glu Ser Pro Lys Ala Gln Gln Leu Ser Leu Gln Thr 195 200 205	802
ctc agg act gcc cag cca atc att ggg acc aca cac ccc agc atc gtg Leu Arg Thr Ala Gln Pro Ile Ile Gly Thr Thr His Pro Ser Ile Val 210 215 220	850

gac tgc gtg ctg aag gtg ctg ggc acg atg cac ctg gaa gtc cag tat	898
Asp Cys Val Leu Lys Val Leu Gly Thr Met His Leu Glu Val Gln Tyr	
225 230 235 240	
gaa gcc atc gag ttg atc aaa gac ctg gtc ggt tac gat gtg cgc cag	946
Glu Ala Ile Glu Leu Ile Lys Asp Leu Val Gly Tyr Asp Val Arg Gln	
245 250 255	
gcg ctg ctc aag ggc ctc gtg gcg ctg ctg ata ccg tcg gtc aag gag	994
Ala Leu Leu Lys Gly Leu Val Ala Leu Leu Ile Pro Ser Val Lys Glu	
260 265 270	
atc tcc aaa ctg cag gcc aag atc ctc agt gac ccc tcg gtt ctc cag	1042
Ile Ser Lys Leu Gln Ala Lys Ile Leu Ser Asp Pro Ser Val Leu Gln	
275 280 285	
ctc acc ccc agc ctg ccg atg ttt ttg cag cag gcc gcg gcc gcc aag	1090
Leu Thr Pro Ser Leu Pro Met Phe Leu Gln Gln Ala Ala Ala Ala Lys	
290 295 300	
gcc atc ggg taa gcgggcaggg gttagtgggt agctgcagca agcctggctt	1142
Ala Ile Gly	
305	
ggcgctgccg gcgggccccg ggagcgctcc gtgcgcgggg tgggcggggg tgtgcgccg	1202
gtgagcccca gggcgtcgcc ccagcccgaa cccccggccc agggtcctgg cgcgcaacga	1262
catgagcatc gccgaggagc tgctgtacct gcgcgtggtg cgtggcctaa tggccgccat	1322
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gcaagaggaa ggcgccctggg gtcaagctca gagccactcc acttggctcc aggggggaga	2042
cggggattag gcatcccaga ggggcagagg aagagccgct ggctgcgaag agtcaataaa	2102
cagccttgat acctgaaaaa aaaaaaaaaa a	2133
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<211> 307	
<212> PRT	

<213> Homo sapiens

<400> 64

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Leu Gln Glu Trp Asp Asn Ala Gly Lys Val Ala Arg Ser His Ile Leu
 20 25 30

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

Gln Glu Phe Ser Gln Gly Ala Ser Leu Phe Leu Val Arg Leu Thr Thr
 50 55 60

Ser Leu Arg Ile Thr Tyr Met Thr Asp Ser Cys Leu Glu Lys Leu Leu
 65 70 75 80

Arg Ser Ile Gly Ile Phe Leu Ser Ala Val Ser Ser Asn Arg Tyr Leu
 85 90 95

Ile Glu Phe Leu Glu Val Gly Gly Val Leu Thr Leu Leu Glu Ile Leu
 100 105 110

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

Leu Gln Val Ile Ala Asn Ser Gly Arg Thr Tyr Lys Glu Leu Ile Cys
 130 135 140

Glu Ser Tyr Gly Val Arg Ser Ile Ala Glu Phe Leu Ala Lys Ser Lys
 145 150 155 160

Ser Glu Glu Thr Gln Glu Glu Val Gln Val Leu Leu Asp Ser Leu Val
 165 170 175

His Gly Asn Pro Lys Tyr Gln Asn Gln Val Tyr Lys Gly Leu Ile Ala
 180 185 190

Leu Leu Pro Cys Glu Ser Pro Lys Ala Gln Gln Leu Ser Leu Gln Thr
 195 200 205

Leu Arg Thr Ala Gln Pro Ile Ile Gly Thr Thr His Pro Ser Ile Val
 210 215 220

Asp Cys Val Leu Lys Val Leu Gly Thr Met His Leu Glu Val Gln Tyr
 225 230 235 240

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

Ala Leu Leu Lys Gly Leu Val Ala Leu Leu Ile Pro Ser Val Lys Glu
260 265 270

Ile Ser Lys Leu Gln Ala Lys Ile Leu Ser Asp Pro Ser Val Leu Gln
275 280 285

Leu Thr Pro Ser Leu Pro Met Phe Leu Gln Gln Ala Ala Ala Ala Lys
290 295 300

Ala Ile Gly
305

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<210> 65
<211> 802
<212> DNA
<213> Homo sapiens
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<222> (253) .. (696)
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 95 100 105

ctg agt ctg ggg att ttg gcc ttg ttg acc ctc cta ggt gcc ctg gga 627
 Leu Ser Leu Gly Ile Leu Ala Leu Leu Thr Leu Leu Gly Ala Leu Gly
 110 115 120 125

att gca aac agc ttt ctg gat gaa tat ctg gac ctc aat att gcc aag 675
 Ile Ala Asn Ser Phe Leu Asp Glu Tyr Leu Asp Leu Asn Ile Ala Lys
 130 135 140

aaa ctg agg cgg caa ttc taa ctttttctct tccctttaat gcttgcagaa 726
 Lys Leu Arg Arg Gln Phe
 145

gctgttccca ccatgaaggt aatatgggtat catttggttaa ataaaaataa agtctttatt 786

ctgtttttct tgaaaa 802

<210> 66
 <211> 147
 <212> PRT
 <213> Homo sapiens

<400> 66

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Cys Gln Gln Ser Tyr Phe Ala Leu Gln Val Gly Lys Ala Arg Leu Lys
 20 25 30

Tyr Lys Val Thr Pro Pro Ala Val Thr Gly Ser Pro Glu Phe Glu Arg
 35 40 45

Val Phe Arg Ala Gln Gln Asn Cys Val Glu Phe Tyr Pro Ile Phe Ile
 50 55 60

Ile Thr Leu Trp Met Ala Gly Trp Tyr Phe Asn Gln Val Phe Ala Thr
 65 70 75 80

Cys Leu Gly Leu Val Tyr Ile Tyr Gly Arg His Leu Tyr Phe Trp Gly
 85 90 95

Tyr Ser Glu Ala Ala Lys Lys Arg Ile Thr Gly Phe Arg Leu Ser Leu
 100 105 110

Gly Ile Leu Ala Leu Leu Thr Leu Leu Gly Ala Leu Gly Ile Ala Asn
 115 120 125

Ser Phe Leu Asp Glu Tyr Leu Asp Leu Asn Ile Ala Lys Lys Leu Arg
 130 135 140

Arg Gln Phe
145

<210> 67
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<212> DNA
<213> Homo sapiens

<220>
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<222> (170)..(1189)

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gactggctgg gcgagactct ccacctgctc cctgggacca tcgcccacc atg gct gtg 178
Met Ala Val
1
gcc cag cag ctg cgg gcc gag agt gac ttt gaa cag ctt ccg gat gat 226
Ala Gln Gln Leu Arg Ala Glu Ser Asp Phe Glu Gln Leu Pro Asp Asp
5 10 15
gtt gcc atc tcg gcc aac att gct gac atc gag gag aag aga ggc ttc 274
Val Ala Ile Ser Ala Asn Ile Ala Asp Ile Glu Glu Lys Arg Gly Phe
20 25 30 35
acc agc cac ttt gtt ttc gtc atc gag gtg aag aca aaa gga gga tcc 322
Thr Ser His Phe Val Phe Val Ile Glu Val Lys Thr Lys Gly Gly Ser
40 45 50
aag tac ctc atc tac cgc cgc tac cgc cag ttc cat gct ttg cag agc 370
Lys Tyr Leu Ile Tyr Arg Arg Tyr Arg Gln Phe His Ala Leu Gln Ser
55 60 65
aag ctg gag gag cgc ttc ggg cca gac agc aag agc agt gcc ctg gcc 418
Lys Leu Glu Glu Arg Phe Gly Pro Asp Ser Lys Ser Ser Ala Leu Ala
70 75 80
tgt acc ctg ccc aca ctc cca gcc aaa gtc tac gtg ggt gtg aaa cag 466
Cys Thr Leu Pro Thr Leu Pro Ala Lys Val Tyr Val Gly Val Lys Gln
85 90 95
gag atc gcc gag atg cgg ata cct gcc ctc aac gcc tac atg aag agc 514
Glu Ile Ala Glu Met Arg Ile Pro Ala Leu Asn Ala Tyr Met Lys Ser
100 105 110 115
ctg ctc agc ctg ccg gtc tgg gtg ctg atg gat gag gac gtc cgg atc 562
Leu Leu Ser Leu Pro Val Trp Val Leu Met Asp Glu Asp Val Arg Ile
120 125 130
ttc ttt tac cag tcg ccc tat gac tca gag cag gtg ccc cag gca ctc 610
Phe Phe Tyr Gln Ser Pro Tyr Asp Ser Glu Gln Val Pro Gln Ala Leu
135 140 145
cgc cgg ctc cgc ccg cgc acc cgg aaa gtc aag agc gtg tcc cca cag 658
Arg Arg Leu Arg Pro Arg Thr Arg Lys Val Lys Ser Val Ser Pro Gln

150	155	160	
ggc aac agc gtt gac cgc atg gca gct ccg aga gca gag gct cta ttt			706
Gly Asn Ser Val Asp Arg Met Ala Ala Pro Arg Ala Glu Ala Leu Phe			
165	170	175	
gac ttc act gga aac agc aaa ctg gag ctg aat ttc aaa gct gga gat			754
Asp Phe Thr Gly Asn Ser Lys Leu Glu Leu Asn Phe Lys Ala Gly Asp			
180	185	190	195
gtg atc ttc ctc ctc agt cgg atc aac aaa gac tgg ctg gag ggc act			802
Val Ile Phe Leu Leu Ser Arg Ile Asn Lys Asp Trp Leu Glu Gly Thr			
200	205	210	
gtc cgg gga gcc acg ggc atc ttc cct ctc tcc ttc gtg aag atc ctc			850
Val Arg Gly Ala Thr Gly Ile Phe Pro Leu Ser Phe Val Lys Ile Leu			
215	220	225	
aaa gac ttc cct gag gag gac gac ccc acc aac tgg ctg cgt tgc tac			898
Lys Asp Phe Pro Glu Glu Asp Asp Pro Thr Asn Trp Leu Arg Cys Tyr			
230	235	240	
tac tac gaa gac acc atc agc acc atc aag gac atc gcg gtg gag gaa			946
Tyr Tyr Glu Asp Thr Ile Ser Thr Ile Lys Asp Ile Ala Val Glu Glu			
245	250	255	
gat ctc agc agc act ccc cta ttg aaa gac ctg ctg gag ctc aca agg			994
Asp Leu Ser Ser Thr Pro Leu Leu Lys Asp Leu Leu Glu Leu Thr Arg			
260	265	270	275
cgg gag ttc cag aga gag gac ata gct ctg aat tac cgg gac gct gag			1042
Arg Glu Phe Gln Arg Glu Asp Ile Ala Leu Asn Tyr Arg Asp Ala Glu			
280	285	290	
ggg gat ctg gtt cgg ctg ctg tcg gat gag gac gta gcg ctc atg gtg			1090
Gly Asp Leu Val Arg Leu Leu Ser Asp Glu Asp Val Ala Leu Met Val			
295	300	305	
cgg cag gct cgt ggc ctc ccc tcc cag aag cgc ctc ttc ccc tgg aag			1138
Arg Gln Ala Arg Gly Leu Pro Ser Gln Lys Arg Leu Phe Pro Trp Lys			
310	315	320	
ctg cac atc acg cag aag gac aac tac agg gtc tac aac acg atg cca			1186
Leu His Ile Thr Gln Lys Asp Asn Tyr Arg Val Tyr Asn Thr Met Pro			
325	330	335	
tga gctgacggtg tccctggagc agtgagggga caccagcaaa aaccttcagc			1239
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gctaattggac ccgtggggct tgtaatctgt ctctttctac tattttacatc tgattttaa			1359
aaaccattcc atctgaaagg ggcaaaa			1386
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			20					25					30						
Arg	Gly	Phe	Thr	Ser	His	Phe	Val	Phe	Val	Ile	Glu	Val	Lys	Thr	Lys				
		35					40					45							
Gly	Gly	Ser	Lys	Tyr	Leu	Ile	Tyr	Arg	Arg	Tyr	Arg	Gln	Phe	His	Ala				
	50					55					60								
Leu	Gln	Ser	Lys	Leu	Glu	Glu	Arg	Phe	Gly	Pro	Asp	Ser	Lys	Ser	Ser				
65					70					75					80				
Ala	Leu	Ala	Cys	Thr	Leu	Pro	Thr	Leu	Pro	Ala	Lys	Val	Tyr	Val	Gly				
				85					90					95					
Val	Lys	Gln	Glu	Ile	Ala	Glu	Met	Arg	Ile	Pro	Ala	Leu	Asn	Ala	Tyr				
			100					105					110						
Met	Lys	Ser	Leu	Leu	Ser	Leu	Pro	Val	Trp	Val	Leu	Met	Asp	Glu	Asp				
		115					120					125							
Val	Arg	Ile	Phe	Phe	Tyr	Gln	Ser	Pro	Tyr	Asp	Ser	Glu	Gln	Val	Pro				
	130					135					140								
Gln	Ala	Leu	Arg	Arg	Leu	Arg	Pro	Arg	Thr	Arg	Lys	Val	Lys	Ser	Val				
145					150					155					160				
Ser	Pro	Gln	Gly	Asn	Ser	Val	Asp	Arg	Met	Ala	Ala	Pro	Arg	Ala	Glu				
				165					170					175					
Ala	Leu	Phe	Asp	Phe	Thr	Gly	Asn	Ser	Lys	Leu	Glu	Leu	Asn	Phe	Lys				
			180					185					190						
Ala	Gly	Asp	Val	Ile	Phe	Leu	Leu	Ser	Arg	Ile	Asn	Lys	Asp	Trp	Leu				
		195					200					205							
Glu	Gly	Thr	Val	Arg	Gly	Ala	Thr	Gly	Ile	Phe	Pro	Leu	Ser	Phe	Val				
	210					215					220								
Lys	Ile	Leu	Lys	Asp	Phe	Pro	Glu	Glu	Asp	Asp	Pro	Thr	Asn	Trp	Leu				
225					230				235						240				
Arg	Cys	Tyr	Tyr	Tyr	Glu	Asp	Thr	Ile	Ser	Thr	Ile	Lys	Asp	Ile	Ala				
				245					250					255					

Val Glu Glu Asp Leu Ser Ser Thr Pro Leu Leu Lys Asp Leu Leu Glu
260 265 270

Leu Thr Arg Arg Glu Phe Gln Arg Glu Asp Ile Ala Leu Asn Tyr Arg
275 280 285

Asp Ala Glu Gly Asp Leu Val Arg Leu Leu Ser Asp Glu Asp Val Ala
290 295 300

Leu Met Val Arg Gln Ala Arg Gly Leu Pro Ser Gln Lys Arg Leu Phe
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Pro Trp Lys Leu His Ile Thr Gln Lys Asp Asn Tyr Arg Val Tyr Asn
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Thr Met Pro

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<213> Homo sapiens
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gactggctgg	gcgagactct	ccacctgctc	cctggggacca	tcgcccacc	atg gct gtg	178										
					Met Ala Val											
					1											
gcc cag cag ctg cgg gcc gag agt gac ttt gaa cag ctt ccg gat gat	226															
Ala Gln Gln Leu Arg Ala Glu Ser Asp Phe Glu Gln Leu Pro Asp Asp																
5 10 15																
gtt gcc atc tcg gcc aac att gct gac atc gag gag aag aga ggc ttc	274															
Val Ala Ile Ser Ala Asn Ile Ala Asp Ile Glu Glu Lys Arg Gly Phe																
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acc agc cac ttt gtt ttc gtc atc gag gtg aag aca aaa gga gga tcc	322															
Thr Ser His Phe Val Phe Val Ile Glu Val Lys Thr Lys Gly Gly Ser																
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aag tac ctc atc tac cgc cgc tac cgc cag ttc cat gct ttg cag agc	370															
Lys Tyr Leu Ile Tyr Arg Arg Tyr Arg Gln Phe His Ala Leu Gln Ser																
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aag ctg gag gag cgc ttc ggg cca gac agc aag agc agt gcc ctg gcc	418															
Lys Leu Glu Glu Arg Phe Gly Pro Asp Ser Lys Ser Ala Leu Ala																
70 75 80																

tgt acc ctg ccc aca ctc cca gcc aaa gtc tac gtg ggt gtg aaa cag	466
Cys Thr Leu Pro Thr Leu Pro Ala Lys Val Tyr Val Gly Val Lys Gln	
85 90 95	
gag atc gcc gag atg cgg ata cct gcc ctc aac gcc tac atg aag agc	514
Glu Ile Ala Glu Met Arg Ile Pro Ala Leu Asn Ala Tyr Met Lys Ser	
100 105 110 115	
ctg ctc agc ctg ccg gtc tgg gtg ctg atg gat gag gac gtc cgg atc	562
Leu Leu Ser Leu Pro Val Trp Val Leu Met Asp Glu Asp Val Arg Ile	
120 125 130	
ttc ttt tac cag tcg ccc tat gac tca gag cag gtg ccc cag gca ctc	610
Phe Phe Tyr Gln Ser Pro Tyr Asp Ser Glu Gln Val Pro Gln Ala Leu	
135 140 145	
cgc cgg ctc cgc ccg cgc acc cgg aaa gtc aag agc gtg tcc cca cag	658
Arg Arg Leu Arg Pro Arg Thr Arg Lys Val Lys Ser Val Ser Pro Gln	
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ggc aac agc gtt gac cgc atg gca gct ccg aga gca gag gct cta ttt	706
Gly Asn Ser Val Asp Arg Met Ala Ala Pro Arg Ala Glu Ala Leu Phe	
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gac ttc act gga aac agc aaa ctg gag ctg aat ttc aaa gct gga gat	754
Asp Phe Thr Gly Asn Ser Lys Leu Glu Leu Asn Phe Lys Ala Gly Asp	
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gtg atc ttc ctc ctc agt cgg atc aac aaa gac tgg ctg gag ggc act	802
Val Ile Phe Leu Leu Ser Arg Ile Asn Lys Asp Trp Leu Glu Gly Thr	
200 205 210	
gtc cgg gga gcc acg ggc atc ttc cct ctc tcc ttc gtg aag atc ctc	850
Val Arg Gly Ala Thr Gly Ile Phe Pro Leu Ser Phe Val Lys Ile Leu	
215 220 225	
aaa gac ttc cct gag gag gac gac ccc acc aac tgg ctg cgt tgc tac	898
Lys Asp Phe Pro Glu Glu Asp Asp Pro Thr Asn Trp Leu Arg Cys Tyr	
230 235 240	
tac tac gaa gac acc atc agc acc atc aag tct gtg gcc tgg gag gga	946
Tyr Tyr Glu Asp Thr Ile Ser Thr Ile Lys Ser Val Ala Trp Glu Gly	
245 250 255	
ggg gcc tgt cca gcc ttc ctg cca tcc cta cga cca ccg ccc ctc aca	994
Gly Ala Cys Pro Ala Phe Leu Pro Ser Leu Arg Pro Pro Pro Leu Thr	
260 265 270 275	
tca cct tct cat ggg tcc ctc tcc cac tcc aaa gcc ccc agt ggc tcc	1042
Ser Pro Ser His Gly Ser Leu Ser His Ser Lys Ala Pro Ser Gly Ser	
280 285 290	
cag atg agc cac aat gct gta aca agc cat caa cgt cca ggg tgg cct	1090
Gln Met Ser His Asn Ala Val Thr Ser His Gln Arg Pro Gly Trp Pro	
295 300 305	
ggc cag cct cat tcc cct ttc ccc cac ccc aca ccc cac ttc cag cct	1138
Gly Gln Pro His Ser Pro Phe Pro His Pro Thr Pro His Phe Gln Pro	
310 315 320	
gat gcc tcc tta ctc cag cct gtc acc ccc tta ggg aca tcg cgg tgg	1186
Asp Ala Ser Leu Leu Gln Pro Val Thr Pro Leu Gly Thr Ser Arg Trp	
325 330 335	

agg aag atc tca gca gca ctc ccc tat tga aagacctgct ggagctcaca 1236
 Arg Lys Ile Ser Ala Ala Leu Pro Tyr
 340 345

aggcgggagt tccagagaga ggacatagct ctgaattacc gggacgctga gggggatctg 1296

gttcggctgc tgtcggatga ggacgtagcg ctcatggtgc ggcaggctcg tggcctcccc 1356

tcccagaagc gcctcttccc ctggaagctg cacatcacgc agaaggacaa ctacagggtc 1416

tacaacacga tgccatgagc tgacggtgtc cctggagcag tgaggggaca ccagcaaaaa 1476

ccttcagctc tcagaggaga ttgggaccag gaaaacctgg gaggatgggc agacttcctg 1536

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<212> PRT

<213> Homo sapiens

<400> 70

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Arg Gly Phe Thr Ser His Phe Val Phe Val Ile Glu Val Lys Thr Lys
 35 40 45

Gly Gly Ser Lys Tyr Leu Ile Tyr Arg Arg Tyr Arg Gln Phe His Ala
 50 55 60

Leu Gln Ser Lys Leu Glu Glu Arg Phe Gly Pro Asp Ser Lys Ser Ser
 65 70 75 80

Ala Leu Ala Cys Thr Leu Pro Thr Leu Pro Ala Lys Val Tyr Val Gly
 85 90 95

Val Lys Gln Glu Ile Ala Glu Met Arg Ile Pro Ala Leu Asn Ala Tyr
 100 105 110

Met Lys Ser Leu Leu Ser Leu Pro Val Trp Val Leu Met Asp Glu Asp
 115 120 125

Val Arg Ile Phe Phe Tyr Gln Ser Pro Tyr Asp Ser Glu Gln Val Pro
 130 135 140

Gln Ala Leu Arg Arg Leu Arg Pro Arg Thr Arg Lys Val Lys Ser Val
 145 150 155 160

Ser Pro Gln Gly Asn Ser Val Asp Arg Met Ala Ala Pro Arg Ala Glu
 165 170 175

Ala Leu Phe Asp Phe Thr Gly Asn Ser Lys Leu Glu Leu Asn Phe Lys
 180 185 190

Ala Gly Asp Val Ile Phe Leu Leu Ser Arg Ile Asn Lys Asp Trp Leu
 195 200 205

Glu Gly Thr Val Arg Gly Ala Thr Gly Ile Phe Pro Leu Ser Phe Val
 210 215 220

Lys Ile Leu Lys Asp Phe Pro Glu Glu Asp Asp Pro Thr Asn Trp Leu
 225 230 235 240

Arg Cys Tyr Tyr Tyr Glu Asp Thr Ile Ser Thr Ile Lys Ser Val Ala
 245 250 255

Trp Glu Gly Gly Ala Cys Pro Ala Phe Leu Pro Ser Leu Arg Pro Pro
 260 265 270

Pro Leu Thr Ser Pro Ser His Gly Ser Leu Ser His Ser Lys Ala Pro
 275 280 285

Ser Gly Ser Gln Met Ser His Asn Ala Val Thr Ser His Gln Arg Pro
 290 295 300

Gly Trp Pro Gly Gln Pro His Ser Pro Phe Pro His Pro Thr Pro His
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Phe Gln Pro Asp Ala Ser Leu Leu Gln Pro Val Thr Pro Leu Gly Thr
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Ser Arg Trp Arg Lys Ile Ser Ala Ala Leu Pro Tyr
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				Met	Glu	Ser	Arg	Val	Leu							
				1				5								
ctg	aga	aca	ttc	tgt	ttg	atc	ttc	ggt	ctc	gga	gca	gtt	tgg	ggg	ctt	162
Leu	Arg	Thr	Phe	Cys	Leu	Ile	Phe	Gly	Leu	Gly	Ala	Val	Trp	Gly	Leu	
			10					15					20			
ggt	gtg	gac	cct	tcc	cta	cag	att	gac	gtc	tta	aca	gag	tta	gaa	ctt	210
Gly	Val	Asp	Pro	Ser	Leu	Gln	Ile	Asp	Val	Leu	Thr	Glu	Leu	Glu	Leu	
			25				30					35				
ggg	gag	tcc	acg	acc	gga	gtg	cgt	cag	gtc	ccg	ggg	ctg	cat	aat	ggg	258
Gly	Glu	Ser	Thr	Thr	Gly	Val	Arg	Gln	Val	Pro	Gly	Leu	His	Asn	Gly	
	40					45					50					
acg	aaa	gcc	ttt	ctc	ttt	caa	gat	act	ccc	aga	agc	ata	aaa	gca	tcc	306
Thr	Lys	Ala	Phe	Leu	Phe	Gln	Asp	Thr	Pro	Arg	Ser	Ile	Lys	Ala	Ser	
55					60				65						70	
act	gct	aca	gct	gaa	cag	ttt	ttt	cag	aag	ctg	aga	aat	aaa	cat	gaa	354
Thr	Ala	Thr	Ala	Glu	Gln	Phe	Phe	Gln	Lys	Leu	Arg	Asn	Lys	His	Glu	
				75				80					85			
ttt	act	att	ttg	gtg	acc	cta	aaa	cag	acc	cac	tta	aat	tca	gga	gtt	402
Phe	Thr	Ile	Leu	Val	Thr	Leu	Lys	Gln	Thr	His	Leu	Asn	Ser	Gly	Val	
			90					95					100			
att	ctc	tca	att	cac	cac	ttg	gat	cac	agg	tac	ctg	gaa	ctg	gaa	agt	450
Ile	Leu	Ser	Ile	His	His	Leu	Asp	His	Arg	Tyr	Leu	Glu	Leu	Glu	Ser	
			105				110					115				
agt	ggc	cat	cgg	aat	gaa	gtc	aga	ctg	cat	tac	cgc	tca	ggc	agt	cac	498
Ser	Gly	His	Arg	Asn	Glu	Val	Arg	Leu	His	Tyr	Arg	Ser	Gly	Ser	His	
	120					125					130					
cgc	cct	cac	aca	gaa	gtg	ttt	cct	tac	att	ttg	gct	gat	gac	aag	tgg	546
Arg	Pro	His	Thr	Glu	Val	Phe	Pro	Tyr	Ile	Leu	Ala	Asp	Asp	Lys	Trp	
135					140					145					150	
cac	aag	ctc	tcc	tta	gcc	atc	agt	gct	tcc	cat	ttg	att	tta	cac	att	594
His	Lys	Leu	Ser	Leu	Ala	Ile	Ser	Ala	Ser	His	Leu	Ile	Leu	His	Ile	
				155					160					165		
gac	tgc	aat	aaa	att	tat	gaa	agg	gta	gta	gaa	aag	ccc	tcc	aca	gac	642
Asp	Cys	Asn	Lys	Ile	Tyr	Glu	Arg	Val	Val	Glu	Lys	Pro	Ser	Thr	Asp	
			170				175						180			
ttg	cct	cta	ggc	aca	aca	ttt	tgg	cta	gga	cag	aga	aat	aat	gcg	cat	690
Leu	Pro	Leu	Gly	Thr	Thr	Phe	Trp	Leu	Gly	Gln	Arg	Asn	Asn	Ala	His	
			185				190					195				
gga	tat	ttt	aag	ggc	ata	atg	caa	gat	gtc	caa	tta	ctt</				

tgc aat gac ttc cat gga ctt gtg cag aaa atc atg gag cta cag gat Cys Asn Asp Phe His Gly Leu Val Gln Lys Ile Met Glu Leu Gln Asp 235 240 245	834
att tta gcc aaa aca tca gcc aag ctg tct cga gct gaa cag cga atg Ile Leu Ala Lys Thr Ser Ala Lys Leu Ser Arg Ala Glu Gln Arg Met 250 255 260	882
aat aga ttg gat cag tgc tat tgt gaa agg act tgc acc atg aag gga Asn Arg Leu Asp Gln Cys Tyr Cys Glu Arg Thr Cys Thr Met Lys Gly 265 270 275	930
acc acc tac cga gaa ttt gag tcc tgg ata gac ggc tgt aag aac tgc Thr Thr Tyr Arg Glu Phe Glu Ser Trp Ile Asp Gly Cys Lys Asn Cys 280 285 290	978
aca tgc ctg aat gga acc atc cag tgt gaa act cta atc tgc cca aat Thr Cys Leu Asn Gly Thr Ile Gln Cys Glu Thr Leu Ile Cys Pro Asn 295 300 305 310	1026
cct gac tgc cca ctt aag tcg gct ctt gcg tat gtg gat ggc aaa tgc Pro Asp Cys Pro Leu Lys Ser Ala Leu Ala Tyr Val Asp Gly Lys Cys 315 320 325	1074
tgt aag gaa tgc aaa tcg ata tgc caa ttt caa gga cga acc tac ttt Cys Lys Glu Cys Lys Ser Ile Cys Gln Phe Gln Gly Arg Thr Tyr Phe 330 335 340	1122
gaa gga gaa aga aat aca gtc tat tcc tct tct gga gta tgt gtt ctc Glu Gly Glu Arg Asn Thr Val Tyr Ser Ser Ser Gly Val Cys Val Leu 345 350 355	1170
tat gag tgc aag gac cag acc atg aaa ctt gtt gag agt tca ggc tgt Tyr Glu Cys Lys Asp Gln Thr Met Lys Leu Val Glu Ser Ser Gly Cys 360 365 370	1218
cca gct ttg gat tgt cca gag tct cat cag ata acc ttg tct cac agc Pro Ala Leu Asp Cys Pro Glu Ser His Gln Ile Thr Leu Ser His Ser 375 380 385 390	1266
tgt tgc aaa gtt tgt aaa ggt tat gac ttt tgt tct gaa agg cat aac Cys Cys Lys Val Cys Lys Gly Tyr Asp Phe Cys Ser Glu Arg His Asn 395 400 405	1314
tgc atg gag aat tcc atc tgc aga aat ctg aat gac agg gct gtt tgt Cys Met Glu Asn Ser Ile Cys Arg Asn Leu Asn Asp Arg Ala Val Cys 410 415 420	1362
agc tgt cga gat ggt ttt agg gct ctt cga gag gat aat gcc tac tgt Ser Cys Arg Asp Gly Phe Arg Ala Leu Arg Glu Asp Asn Ala Tyr Cys 425 430 435	1410
gaa gac atc gat gag tgt gct gaa ggg cgc cat tac tgt cgt gaa aat Glu Asp Ile Asp Glu Cys Ala Glu Gly Arg His Tyr Cys Arg Glu Asn 440 445 450	1458
aca atg tgt gtc aac acc ccg ggt tct ttt atg tgc atc tgc aaa act Thr Met Cys Val Asn Thr Pro Gly Ser Phe Met Cys Ile Cys Lys Thr 455 460 465 470	1506
gga tac atc aga att gat gat tat tca tgt aca gaa cat gat gag tgt Gly Tyr Ile Arg Ile Asp Asp Tyr Ser Cys Thr Glu His Asp Glu Cys 475 480 485	1554

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Ile	Thr	Asn	Gln	His	Asn	Cys	Asp	Glu	Asn	Ala	Leu	Cys	Phe	Asn	Thr	
			490					495					500			
gtt	gga	gga	cac	aac	tgt	gtt	tgc	aag	ccg	ggc	tat	aca	ggg	aat	gga	1650
Val	Gly	Gly	His	Asn	Cys	Val	Cys	Lys	Pro	Gly	Tyr	Thr	Gly	Asn	Gly	
		505					510					515				
acg	aca	tgc	aaa	gca	ttt	tgc	aaa	gat	ggc	tgt	agg	aat	gga	gga	gcc	1698
Thr	Thr	Cys	Lys	Ala	Phe	Cys	Lys	Asp	Gly	Cys	Arg	Asn	Gly	Gly	Ala	
		520				525					530					
tgt	att	gcc	gct	aat	gtg	tgt	gcc	tgc	cca	caa	ggc	ttc	act	gga	ccc	1746
Cys	Ile	Ala	Ala	Asn	Val	Cys	Ala	Cys	Pro	Gln	Gly	Phe	Thr	Gly	Pro	
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agc	tgt	gaa	acg	gac	att	gat	gaa	tgc	tct	gat	ggc	ttt	gtt	caa	tgt	1794
Ser	Cys	Glu	Thr	Asp	Ile	Asp	Glu	Cys	Ser	Asp	Gly	Phe	Val	Gln	Cys	
				555					560					565		
gac	agt	cgt	gct	aat	tgc	att	aac	ctg	cct	gga	tgg	tac	cac	tgt	gag	1842
Asp	Ser	Arg	Ala	Asn	Cys	Ile	Asn	Leu	Pro	Gly	Trp	Tyr	His	Cys	Glu	
			570					575					580			
tgc	aga	gat	ggc	tac	cat	gac	aat	ggg	atg	ttt	tca	cca	agt	gga	gaa	1890
Cys	Arg	Asp	Gly	Tyr	His	Asp	Asn	Gly	Met	Phe	Ser	Pro	Ser	Gly	Glu	
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tcg	tgt	gaa	gat	att	gat	gag	tgt	ggg	acc	ggg	agg	cac	agc	tgt	gcc	1938
Ser	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Gly	Thr	Gly	Arg	His	Ser	Cys	Ala	
		600				605					610					
aat	gat	acc	att	tgc	ttc	aat	ttg	gat	ggc	gga	tat	gat	tgt	cga	tgt	1986
Asn	Asp	Thr	Ile	Cys	Phe	Asn	Leu	Asp	Gly	Gly	Tyr	Asp	Cys	Arg	Cys	
615					620					625					630	
cct	cat	gga	aag	aat	tgc	aca	ggg	gac	tgc	atc	cat	gat	gga	aaa	gtt	2034
Pro	His	Gly	Lys	Asn	Cys	Thr	Gly	Asp	Cys	Ile	His	Asp	Gly	Lys	Val	
				635					640					645		
aag	cac	aat	ggc	cag	att	tgg	gtg	ttg	gaa	aat	gac	agg	tgc	tct	gtg	2082
Lys	His	Asn	Gly	Gln	Ile	Trp	Val	Leu	Glu	Asn	Asp	Arg	Cys	Ser	Val	
			650					655					660			
tgc	tca	tgt	cag	aat	gga	ttc	gtt	atg	tgt	cga	cgg	atg	gtc	tgt	gac	2130
Cys	Ser	Cys	Gln	Asn	Gly	Phe	Val	Met	Cys	Arg	Arg	Met	Val	Cys	Asp	
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Cys	Glu	Asn	Pro	Thr	Val	Asp	Leu	Phe	Cys	Cys	Pro	Glu	Cys	Asp	Pro	
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agg	ctt	agt	agt	cag	tgc	ctc	cat	caa	aat	ggg	gaa	act	ttg	tat	aac	2226
Arg	Leu	Ser	Ser	Gln	Cys	Leu	His	Gln	Asn	Gly	Glu	Thr	Leu	Tyr	Asn	
695					700					705					710	
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Ser	Gly	Asp	Thr	Trp	Val	Gln	Asn	Cys	Gln	Gln	Cys	Arg	Cys	Leu	Gln	
				715					720					725		
ggg	gaa	gtt	gat	tgt	tgg	ccc	ctg	cct	tgc	cca	gat	gtg	gag	tgt	gaa	2322
Gly	Glu	Val	Asp	Cys	Trp	Pro	Leu	Pro	Cys	Pro	Asp	Val	Glu	Cys	Glu	

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Phe Ser Ile Leu Pro Glu Asn Glu Cys Cys Pro Arg Cys Val Thr Asp			
745	750	755	
cct tgc cag gct gac acc atc cgc aat gac atc acc aag act tgc ctg			2418
Pro Cys Gln Ala Asp Thr Ile Arg Asn Asp Ile Thr Lys Thr Cys Leu			
760	765	770	
gac gaa atg aat gtg gtt cgc ttc acc ggg tcc tct tgg atc aaa cat			2466
Asp Glu Met Asn Val Val Arg Phe Thr Gly Ser Ser Trp Ile Lys His			
775	780	785	790
ggc act gag tgt act ctc tgc cag tgc aag aat ggc cac atc tgt tgc			2514
Gly Thr Glu Cys Thr Leu Cys Gln Cys Lys Asn Gly His Ile Cys Cys			
795	800	805	
tca gtg gat cca cag tgc ctt cag gaa ctg tga agttaactgt ctcatgggag			2567
Ser Val Asp Pro Gln Cys Leu Gln Glu Leu			
810	815		
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ggtgatttgt gggcagctaa atgcagcttt gttaatagct gagtgaactt tcaattatga			2687
aatttgtgga gcttgacaaa atcacaaaag gaaaattact ggggcaaaat tagacctcaa			2747
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gacatcctga accctggata gaaagcctga gccatttgga tctgtgaaag cctctagctt			2867
cactgggtgca gaaaatttttc ctctagatca gaatcttcag aatcagttag gttcctcact			2927
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 <212> PRT
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<400> 72

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35 40 45

Pro Gly Leu His Asn Gly Thr Lys Ala Phe Leu Phe Gln Asp Thr Pro
 50 55 60

Arg Ser Ile Lys Ala Ser Thr Ala Thr Ala Glu Gln Phe Phe Gln Lys
 65 70 75 80

Leu Arg Asn Lys His Glu Phe Thr Ile Leu Val Thr Leu Lys Gln Thr
 85 90 95

His Leu Asn Ser Gly Val Ile Leu Ser Ile His His Leu Asp His Arg
 100 105 110

Tyr Leu Glu Leu Glu Ser Ser Gly His Arg Asn Glu Val Arg Leu His
 115 120 125

Tyr Arg Ser Gly Ser His Arg Pro His Thr Glu Val Phe Pro Tyr Ile
 130 135 140

Leu Ala Asp Asp Lys Trp His Lys Leu Ser Leu Ala Ile Ser Ala Ser
 145 150 155 160

His Leu Ile Leu His Ile Asp Cys Asn Lys Ile Tyr Glu Arg Val Val
 165 170 175

Glu Lys Pro Ser Thr Asp Leu Pro Leu Gly Thr Thr Phe Trp Leu Gly
 180 185 190

Gln Arg Asn Asn Ala His Gly Tyr Phe Lys Gly Ile Met Gln Asp Val
 195 200 205

Gln Leu Leu Val Met Pro Gln Gly Phe Ile Ala Gln Cys Pro Asp Leu
 210 215 220

Asn Arg Thr Cys Pro Thr Cys Asn Asp Phe His Gly Leu Val Gln Lys
 225 230 235 240

Ile Met Glu Leu Gln Asp Ile Leu Ala Lys Thr Ser Ala Lys Leu Ser
 245 250 255

Arg Ala Glu Gln Arg Met Asn Arg Leu Asp Gln Cys Tyr Cys Glu Arg
 260 265 270

Thr Cys Thr Met Lys Gly Thr Thr Tyr Arg Glu Phe Glu Ser Trp Ile
 275 280 285

Asp Gly Cys Lys Asn Cys Thr Cys Leu Asn Gly Thr Ile Gln Cys Glu
 290 295 300

Thr Leu Ile Cys Pro Asn Pro Asp Cys Pro Leu Lys Ser Ala Leu Ala
305 310 315 320

Tyr Val Asp Gly Lys Cys Cys Lys Glu Cys Lys Ser Ile Cys Gln Phe
325 330 335

Gln Gly Arg Thr Tyr Phe Glu Gly Glu Arg Asn Thr Val Tyr Ser Ser
340 345 350

Ser Gly Val Cys Val Leu Tyr Glu Cys Lys Asp Gln Thr Met Lys Leu
355 360 365

Val Glu Ser Ser Gly Cys Pro Ala Leu Asp Cys Pro Glu Ser His Gln
370 375 380

Ile Thr Leu Ser His Ser Cys Cys Lys Val Cys Lys Gly Tyr Asp Phe
385 390 395 400

Cys Ser Glu Arg His Asn Cys Met Glu Asn Ser Ile Cys Arg Asn Leu
405 410 415

Asn Asp Arg Ala Val Cys Ser Cys Arg Asp Gly Phe Arg Ala Leu Arg
420 425 430

Glu Asp Asn Ala Tyr Cys Glu Asp Ile Asp Glu Cys Ala Glu Gly Arg
435 440 445

His Tyr Cys Arg Glu Asn Thr Met Cys Val Asn Thr Pro Gly Ser Phe
450 455 460

Met Cys Ile Cys Lys Thr Gly Tyr Ile Arg Ile Asp Asp Tyr Ser Cys
465 470 475 480

Thr Glu His Asp Glu Cys Ile Thr Asn Gln His Asn Cys Asp Glu Asn
485 490 495

Ala Leu Cys Phe Asn Thr Val Gly Gly His Asn Cys Val Cys Lys Pro
500 505 510

Gly Tyr Thr Gly Asn Gly Thr Thr Cys Lys Ala Phe Cys Lys Asp Gly
515 520 525

Cys Arg Asn Gly Gly Ala Cys Ile Ala Ala Asn Val Cys Ala Cys Pro
530 535 540

Gln Gly Phe Thr Gly Pro Ser Cys Glu Thr Asp Ile Asp Glu Cys Ser
545 550 555 560

Asp Gly Phe Val Gln Cys Asp Ser Arg Ala Asn Cys Ile Asn Leu Pro
565 570 575

Gly Trp Tyr His Cys Glu Cys Arg Asp Gly Tyr His Asp Asn Gly Met
580 585 590

Phe Ser Pro Ser Gly Glu Ser Cys Glu Asp Ile Asp Glu Cys Gly Thr
595 600 605

Gly Arg His Ser Cys Ala Asn Asp Thr Ile Cys Phe Asn Leu Asp Gly
610 615 620

Gly Tyr Asp Cys Arg Cys Pro His Gly Lys Asn Cys Thr Gly Asp Cys
625 630 635 640

Ile His Asp Gly Lys Val Lys His Asn Gly Gln Ile Trp Val Leu Glu
645 650 655

Asn Asp Arg Cys Ser Val Cys Ser Cys Gln Asn Gly Phe Val Met Cys
660 665 670

Arg Arg Met Val Cys Asp Cys Glu Asn Pro Thr Val Asp Leu Phe Cys
675 680 685

Cys Pro Glu Cys Asp Pro Arg Leu Ser Ser Gln Cys Leu His Gln Asn
690 695 700

Gly Glu Thr Leu Tyr Asn Ser Gly Asp Thr Trp Val Gln Asn Cys Gln
705 710 715 720

Gln Cys Arg Cys Leu Gln Gly Glu Val Asp Cys Trp Pro Leu Pro Cys
725 730 735

Pro Asp Val Glu Cys Glu Phe Ser Ile Leu Pro Glu Asn Glu Cys Cys
740 745 750

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

Ile Thr Lys Thr Cys Leu Asp Glu Met Asn Val Val Arg Phe Thr Gly
770 775 780

Ser Ser Trp Ile Lys His Gly Thr Glu Cys Thr Leu Cys Gln Cys Lys
785 790 795 800

Asn Gly His Ile Cys Cys Ser Val Asp Pro Gln Cys Leu Gln Glu Leu
 805 810 815

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 <212> DNA
 <213> Homo sapiens

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 <221> CDS
 <222> (36)..(902)

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 Met Gly Arg Leu Thr Glu
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gcg gcg gca gcg ggc agc ggc tct cgg gct gca ggc tgg gca ggg tcc 101
 Ala Ala Ala Ala Gly Ser Gly Ser Arg Ala Ala Gly Trp Ala Gly Ser
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cct ccc acg ctc ctg ccg ctg tct ccc acg tcc ccc agg tgc gcg gcc 149
 Pro Pro Thr Leu Leu Pro Leu Ser Pro Thr Ser Pro Arg Cys Ala Ala
 25 30 35

acc atg gcg tcc agc gac gag gac ggc acc aac ggc ggc gcc tcg gag 197
 Thr Met Ala Ser Ser Asp Glu Asp Gly Thr Asn Gly Gly Ala Ser Glu
 40 45 50

gcc ggc gag gac cgg gag gct ccc ggc gag cgg agg cgc ctg ggg gtc 245
 Ala Gly Glu Asp Arg Glu Ala Pro Gly Glu Arg Arg Arg Leu Gly Val
 55 60 65 70

ttg gcc acc gcc tgg ctc acc ttc tac gac atc gcc atg acc gcg ggg 293
 Leu Ala Thr Ala Trp Leu Thr Phe Tyr Asp Ile Ala Met Thr Ala Gly
 75 80 85

tgg ttg gtt cta gct att gcc atg gta cgt ttt tat atg gaa aaa gga 341
 Trp Leu Val Leu Ala Ile Ala Met Val Arg Phe Tyr Met Glu Lys Gly
 90 95 100

aca cac aga ggt tta tat aaa agt att cag aag aca ctt aaa ttt ttc 389
 Thr His Arg Gly Leu Tyr Lys Ser Ile Gln Lys Thr Leu Lys Phe Phe
 105 110 115

cag aca ttt gcc ttg ctt gag ata gtt cac tgt tta att gga att gta 437
 Gln Thr Phe Ala Leu Leu Glu Ile Val His Cys Leu Ile Gly Ile Val
 120 125 130

cct act tct gtg att gtg act ggg gtc caa gtg agt tca aga atc ttt 485
 Pro Thr Ser Val Ile Val Thr Gly Val Gln Val Ser Ser Arg Ile Phe
 135 140 145 150

atg gtg tgg ctc att act cac agt ata aaa cca atc cag aat gaa gag 533
 Met Val Trp Leu Ile Thr His Ser Ile Lys Pro Ile Gln Asn Glu Glu
 155 160 165

agt gtg gtg ctt ttt ctg gtc gcg tgg act gtg aca gag atc act cgc 581
 Ser Val Val Leu Phe Leu Val Ala Trp Thr Val Thr Glu Ile Thr Arg
 170 175 180

tat tcc ttc tac aca ttc agc ctt ctt gac cac ttg cca tac ttc att 629
 Tyr Ser Phe Tyr Thr Phe Ser Leu Leu Asp His Leu Pro Tyr Phe Ile
 185 190 195

aaa tgg gcc aga tat aat ttt ttt atc atc tta tat cct gtt gga gtt 677
 Lys Trp Ala Arg Tyr Asn Phe Phe Ile Ile Leu Tyr Pro Val Gly Val
 200 205 210

gct ggt gaa ctt ctt aca ata tac gct gcc ttg ccg cat gtg aag aaa 725
 Ala Gly Glu Leu Leu Thr Ile Tyr Ala Ala Leu Pro His Val Lys Lys
 215 220 225 230

aca gga atg ttt tca ata aga ctt cct aac aaa tac aat gtc tct ttt 773
 Thr Gly Met Phe Ser Ile Arg Leu Pro Asn Lys Tyr Asn Val Ser Phe
 235 240 245

gac tac tat tat ttt ctt ctt ata acc atg gca tca tat ata cct ttg 821
 Asp Tyr Tyr Tyr Phe Leu Leu Ile Thr Met Ala Ser Tyr Ile Pro Leu
 250 255 260

ttt cca caa ctc tat ttt cat atg tta cgt caa aga aga aag gtg ctt 869
 Phe Pro Gln Leu Tyr Phe His Met Leu Arg Gln Arg Arg Lys Val Leu
 265 270 275

cat gga gag gtg att gta gaa aag gat gat taa atgatctctg caaacaaggt 922
 His Gly Glu Val Ile Val Glu Lys Asp Asp
 280 285

gctttttcca gaataaccaa gattacctga gtccaagttt taataacaag aataaacaac 982

tttgtgaaat atcatggatt gtatggtttc ttaaaatata acttgagaca cgtgggtat 1042

gccagtat 1102

gtaacttttg ggtaggtatt gattattagg aaaataatta ggtgtattat ctgggggaaa 1162

aaaaaacttt tgctaagttt tttttgaaac atgctcaaag ctttttaaat caatatttag 1222

aaattagttt aacgatttac tattatacct gctagtata tttatgtgat atttataaat 1282

gaaaataaat gcaaaattat aacaaaaaaa aaaaaaaaaa a 1323

<210> 74

<211> 288

<212> PRT

<213> Homo sapiens

<400> 74

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Ala Gly Trp Ala Gly Ser Pro Pro Thr Leu Leu Pro Leu Ser Pro Thr
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Ser Pro Arg Cys Ala Ala Thr Met Ala Ser Ser Asp Glu Asp Gly Thr
 35 40 45

Asn Gly Gly Ala Ser Glu Ala Gly Glu Asp Arg Glu Ala Pro Gly Glu
50 55 60

Arg Arg Arg Leu Gly Val Leu Ala Thr Ala Trp Leu Thr Phe Tyr Asp
65 70 75 80

Ile Ala Met Thr Ala Gly Trp Leu Val Leu Ala Ile Ala Met Val Arg
85 90 95

Phe Tyr Met Glu Lys Gly Thr His Arg Gly Leu Tyr Lys Ser Ile Gln
100 105 110

Lys Thr Leu Lys Phe Phe Gln Thr Phe Ala Leu Leu Glu Ile Val His
115 120 125

Cys Leu Ile Gly Ile Val Pro Thr Ser Val Ile Val Thr Gly Val Gln
130 135 140

Val Ser Ser Arg Ile Phe Met Val Trp Leu Ile Thr His Ser Ile Lys
145 150 155 160

Pro Ile Gln Asn Glu Glu Ser Val Val Leu Phe Leu Val Ala Trp Thr
165 170 175

Val Thr Glu Ile Thr Arg Tyr Ser Phe Tyr Thr Phe Ser Leu Leu Asp
180 185 190

His Leu Pro Tyr Phe Ile Lys Trp Ala Arg Tyr Asn Phe Phe Ile Ile
195 200 205

Leu Tyr Pro Val Gly Val Ala Gly Glu Leu Leu Thr Ile Tyr Ala Ala
210 215 220

Leu Pro His Val Lys Lys Thr Gly Met Phe Ser Ile Arg Leu Pro Asn
225 230 235 240

Lys Tyr Asn Val Ser Phe Asp Tyr Tyr Tyr Phe Leu Leu Ile Thr Met
245 250 255

Ala Ser Tyr Ile Pro Leu Phe Pro Gln Leu Tyr Phe His Met Leu Arg
260 265 270

Gln Arg Arg Lys Val Leu His Gly Glu Val Ile Val Glu Lys Asp Asp
275 280 285

<210> 75

<211> 728

<212> DNA

<213> Homo sapiens

<220>

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<222> (46)..(654)

<400> 75

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atc tat gtt gat aag gaa aat gga gaa cca ggc acc cgt gtg gtt gct      105
Ile Tyr Val Asp Lys Glu Asn Gly Glu Pro Gly Thr Arg Val Val Ala
5                               10                               15                               20

aag gat ggg ctg aag ctg ggg tct gga cct tca atc aaa gcc tta gat      153
Lys Asp Gly Leu Lys Leu Gly Ser Gly Pro Ser Ile Lys Ala Leu Asp
                               25                               30                               35

ggg aga tct caa gtt tca aca cca cgt ttt ggc aaa acg ttc gat gcc      201
Gly Arg Ser Gln Val Ser Thr Pro Arg Phe Gly Lys Thr Phe Asp Ala
                               40                               45                               50

cca cca gcc tta cct aaa gct act aga aag gct ttg gga act gtc aac      249
Pro Pro Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu Gly Thr Val Asn
                               55                               60                               65

aga gct aca gaa aag tct gta aag acc aag gga ccc ctc aaa caa aaa      297
Arg Ala Thr Glu Lys Ser Val Lys Thr Lys Gly Pro Leu Lys Gln Lys
70                               75                               80

cag cca agc ttt tct gcc aaa aag atg act gag aag act gtt aaa gca      345
Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys Thr Val Lys Ala
85                               90                               95                               100

aaa agc tct gtt cct gcc tca gat gat gcc tat cca gaa ata gaa aaa      393
Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro Glu Ile Glu Lys
                               105                               110                               115

ttc ttt ccc ttc aat cct cta gac ttt gag agt ttt gac ctg cct gaa      441
Phe Phe Pro Phe Asn Pro Leu Asp Phe Glu Ser Phe Asp Leu Pro Glu
                               120                               125                               130

gag cac cag att gcg cac ctc ccc ttg agt gga gtg cct ctc atg atc      489
Glu His Gln Ile Ala His Leu Pro Leu Ser Gly Val Pro Leu Met Ile
                               135                               140                               145

ctt gac gag gag aga gag ctt gaa aag ctg ttt cag ctg ggc ccc cct      537
Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln Leu Gly Pro Pro
                               150                               155                               160

tca cct gtg aag atg ccc tct cca cca tgg gaa tcc aat ctg ttg cag      585
Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Ser Asn Leu Leu Gln
165                               170                               175                               180

tct cct tca agc att ctg tcg acc ctg gat gtt gaa ttg cca cct gtt      633
Ser Pro Ser Ser Ile Leu Ser Thr Leu Asp Val Glu Leu Pro Pro Val
                               185                               190                               195

tgc tgt gac ata gat att taa atttcttagt gcttcagagt ttgtgtgtat      684
Cys Cys Asp Ile Asp Ile
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ttgtattaat aaagcattct tcaacagaaa aaaaaaaaaa aaaa

728

<210> 76
 <211> 202
 <212> PRT
 <213> Homo sapiens

<400> 76

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

Thr Phe Asp Ala Pro Pro Ala Leu Pro Lys Ala Thr Arg Lys Ala Leu
 50 55 60

Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Lys Gly Pro
 65 70 75 80

Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
 85 90 95

Thr Val Lys Ala Lys Ser Ser Val Pro Ala Ser Asp Asp Ala Tyr Pro
 100 105 110

Glu Ile Glu Lys Phe Phe Pro Phe Asn Pro Leu Asp Phe Glu Ser Phe
 115 120 125

Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Gly Val
 130 135 140

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

Leu Gly Pro Pro Ser Pro Val Lys Met Pro Ser Pro Pro Trp Glu Ser
 165 170 175

Asn Leu Leu Gln Ser Pro Ser Ser Ile Leu Ser Thr Leu Asp Val Glu
 180 185 190

Leu Pro Pro Val Cys Cys Asp Ile Asp Ile
 195 200

<210> 77
 <211> 609
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (1)..(609)

<400> 77
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 ctt gtg gct aca aag gat ggg ctg aag ctg ggg tct gga cct tca atc 96
 Leu Val Ala Thr Lys Asp Gly Leu Lys Leu Gly Ser Gly Pro Ser Ile
 20 25 30
 aaa gcc tta gat ggg aga tct caa gtt tca ata tca tgt ttt ggc aaa 144
 Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Ile Ser Cys Phe Gly Lys
 35 40 45
 aca ttc gat gct ccc aca tcc tta cct aaa gct acc aga aag gct ttg 192
 Thr Phe Asp Ala Pro Thr Ser Leu Pro Lys Ala Thr Arg Lys Ala Leu
 50 55 60
 gga act gtc aac aga gct aca gaa aag tca gta aag acc aat gga ccc 240
 Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro
 65 70 75 80
 ctc aaa caa aaa cag cca agc ttt tct gcc aaa aag atg act gag aag 288
 Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
 85 90 95
 act gtt aaa gca aaa aac tct gtt cct gcc tca gat gat ggc tat cca 336
 Thr Val Lys Ala Lys Asn Ser Val Pro Ala Ser Asp Asp Gly Tyr Pro
 100 105 110
 gaa ata gaa aaa tta ttt ccc ttc aat cct cta ggc ttc gag agt ttt 384
 Glu Ile Glu Lys Leu Phe Pro Phe Asn Pro Leu Gly Phe Glu Ser Phe
 115 120 125
 gac ctg cct gaa gag cac cag att gca cat ctc ccc ttg agt gaa gtg 432
 Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Glu Val
 130 135 140
 cct ctc atg ata ctt gat gag gag aga gag ctt gaa aag ctg ttt cag 480
 Pro Leu Met Ile Leu Asp Glu Glu Arg Glu Leu Glu Lys Leu Phe Gln
 145 150 155 160
 ctg ggc ccc cct tca cct ttg aag atg ccc tct cca cca tgg aaa tcc 528
 Leu Gly Pro Pro Ser Pro Leu Lys Met Pro Ser Pro Pro Trp Lys Ser
 165 170 175
 aat ctg ttg cag tct cct tta agc att ctg ttg acc ctg gat gtt gaa 576
 Asn Leu Leu Gln Ser Pro Leu Ser Ile Leu Leu Thr Leu Asp Val Glu
 180 185 190
 ttg cca cct gtt tgc tgt gac ata gat att taa 609
 Leu Pro Pro Val Cys Cys Asp Ile Asp Ile
 195 200

<210> 78
 <211> 202
 <212> PRT
 <213> Homo sapiens

<400> 78

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

Lys Ala Leu Asp Gly Arg Ser Gln Val Ser Ile Ser Cys Phe Gly Lys
 35 40 45

Thr Phe Asp Ala Pro Thr Ser Leu Pro Lys Ala Thr Arg Lys Ala Leu
 50 55 60

Gly Thr Val Asn Arg Ala Thr Glu Lys Ser Val Lys Thr Asn Gly Pro
 65 70 75 80

Leu Lys Gln Lys Gln Pro Ser Phe Ser Ala Lys Lys Met Thr Glu Lys
 85 90 95

Thr Val Lys Ala Lys Asn Ser Val Pro Ala Ser Asp Asp Gly Tyr Pro
 100 105 110

Glu Ile Glu Lys Leu Phe Pro Phe Asn Pro Leu Gly Phe Glu Ser Phe
 115 120 125

Asp Leu Pro Glu Glu His Gln Ile Ala His Leu Pro Leu Ser Glu Val
 130 135 140

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

Leu Gly Pro Pro Ser Pro Leu Lys Met Pro Ser Pro Pro Trp Lys Ser
 165 170 175

Asn Leu Leu Gln Ser Pro Leu Ser Ile Leu Leu Thr Leu Asp Val Glu
 180 185 190

Leu Pro Pro Val Cys Cys Asp Ile Asp Ile
 195 200

<210> 79
 <211> 4965
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (256)..(4119)

<400> 79

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agggccgggg gcggcgggcc gagccgcggt agcggcgggc gcgggagggg cggcctgagg      180
gcggacgggc gggcgcccgg gttgcggggg ctcggtgccg ctccgcactg cccggccggt      240
ctcgcccccg gcgcc atg agt ggc ggc ggc ggc gga ggg ggc tcg gcg ccc      291
                Met Ser Gly Gly Gly Gly Gly Gly Gly Ser Ala Pro
                1                    5                    10

agt cgc ttc gcc gac tac ttt gtc atc tgc gga ctg gac acg gag acc      339
Ser Arg Phe Ala Asp Tyr Phe Val Ile Cys Gly Leu Asp Thr Glu Thr
                15                    20                    25

ggg ctg gag ccg gac gag ctg tcg gca tta tgc cag tac ata cag gct      387
Gly Leu Glu Pro Asp Glu Leu Ser Ala Leu Cys Gln Tyr Ile Gln Ala
                30                    35                    40

tct aaa gcc agg gat ggt gcc agc cct ttc att tca agt acg act gaa      435
Ser Lys Ala Arg Asp Gly Ala Ser Pro Phe Ile Ser Ser Thr Thr Glu
45                    50                    55                    60

gga gaa aat ttt gag cag aca cca ttg aga aga aca ttc aaa tct aag      483
Gly Glu Asn Phe Glu Gln Thr Pro Leu Arg Arg Thr Phe Lys Ser Lys
                65                    70                    75

gtc ctt gca cga tat cct gag aac gta gaa tgg aat ccc ttt gac caa      531
Val Leu Ala Arg Tyr Pro Glu Asn Val Glu Trp Asn Pro Phe Asp Gln
                80                    85                    90

gat gca gta gga atg cta tgt atg ccg aaa ggg ctg gca ttc aag acc      579
Asp Ala Val Gly Met Leu Cys Met Pro Lys Gly Leu Ala Phe Lys Thr
                95                    100                    105

cag gct gat ccc agg gag ccc caa ttc cat gcc ttt att atc aca agg      627
Gln Ala Asp Pro Arg Glu Pro Gln Phe His Ala Phe Ile Ile Thr Arg
110                    115                    120

gag gat ggc tct cgg aca ttt ggg ttt gcc ctg aca ttt tat gaa gag      675
Glu Asp Gly Ser Arg Thr Phe Gly Phe Ala Leu Thr Phe Tyr Glu Glu
125                    130                    135                    140

gtg act agc aag cag atc tgc agt gca atg cag acc ctg tac cac atg      723
Val Thr Ser Lys Gln Ile Cys Ser Ala Met Gln Thr Leu Tyr His Met
                145                    150                    155

cac aat gct gag tat gat gtc cta cat gct ccc cct gct gat gac aga      771
His Asn Ala Glu Tyr Asp Val Leu His Ala Pro Pro Ala Asp Asp Arg
                160                    165                    170

gac cag agc agc atg gag gat ggt gaa gac act cct gtg acc aaa ctg      819
Asp Gln Ser Ser Met Glu Asp Gly Glu Asp Thr Pro Val Thr Lys Leu
                175                    180                    185

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cag	cg	ttc	aac	tcc	tat	gac	att	agc	cg	gac	act	ctc	tac	gtc	tct	867
Gln	Arg	Phe	Asn	Ser	Tyr	Asp	Ile	Ser	Arg	Asp	Thr	Leu	Tyr	Val	Ser	
190						195					200					
aag	tgc	atc	tgc	ctc	atc	aca	ccc	atg	tct	ttc	atg	aag	gca	tgt	cgg	915
Lys	Cys	Ile	Cys	Leu	Ile	Thr	Pro	Met	Ser	Phe	Met	Lys	Ala	Cys	Arg	
205					210					215					220	
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Ser	Val	Leu	Glu	Gln	Leu	His	Gln	Ala	Val	Thr	Ser	Pro	Gln	Pro	Pro	
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cca	ctg	ccc	ctt	gag	agc	tac	ata	tac	aac	gta	ctc	tac	gag	gtg	cgg	1011
Pro	Leu	Pro	Leu	Glu	Ser	Tyr	Ile	Tyr	Asn	Val	Leu	Tyr	Glu	Val	Pro	
			240					245					250			
ctc	cca	cct	cct	ggc	cgg	tcc	ttg	aag	ttt	tct	ggg	gtc	tat	ggg	cca	1059
Leu	Pro	Pro	Pro	Gly	Arg	Ser	Leu	Lys	Phe	Ser	Gly	Val	Tyr	Gly	Pro	
		255				260						265				
ata	atc	tgc	cag	aga	cca	agt	acc	aat	gag	ctt	ccc	cta	ttt	gac	ttt	1107
Ile	Ile	Cys	Gln	Arg	Pro	Ser	Thr	Asn	Glu	Leu	Pro	Leu	Phe	Asp	Phe	
	270					275					280					
cct	gtc	aaa	gag	ggt	ttt	gaa	ctg	ctc	ggg	gtg	gag	aat	gtg	ttt	cag	1155
Pro	Val	Lys	Glu	Val	Phe	Glu	Leu	Leu	Gly	Val	Glu	Asn	Val	Phe	Gln	
285					290				295						300	
ctt	ttt	act	tgt	gcc	ctt	ctg	gag	ttt	caa	atc	ctg	ctc	tac	tca	cag	1203
Leu	Phe	Thr	Cys	Ala	Leu	Leu	Glu	Phe	Gln	Ile	Leu	Leu	Tyr	Ser	Gln	
				305					310					315		
cat	tac	cag	aga	ctg	atg	act	gtg	gcg	gag	acg	att	aca	gct	ctc	atg	1251
His	Tyr	Gln	Arg	Leu	Met	Thr	Val	Ala	Glu	Thr	Ile	Thr	Ala	Leu	Met	
			320					325					330			
ttt	cct	ttc	cag	tgg	cag	cat	gtc	tat	gtc	cct	att	ctc	cca	gct	tct	1299
Phe	Pro	Phe	Gln	Trp	Gln	His	Val	Tyr	Val	Pro	Ile	Leu	Pro	Ala	Ser	
		335					340					345				
ctc	ctg	cat	ttc	tta	gat	gct	cct	gtt	cca	tac	ctg	atg	ggt	ttg	cat	1347
Leu	Leu	His	Phe	Leu	Asp	Ala	Pro	Val	Pro	Tyr	Leu	Met	Gly	Leu	His	
	350					355				360						
tcc	aat	ggc	ctg	gat	gac	cgg	tca	aag	ctg	gag	ctg	cct	caa	gag	gct	1395
Ser	Asn	Gly	Leu	Asp	Asp	Arg	Ser	Lys	Leu	Glu	Leu	Pro	Gln	Glu	Ala	
365					370					375					380	
aac	ctc	tgc	ttt	gtg	gac	att	gac	aac	cac	ttc	att	gag	ttg	cca	gag	1443
Asn	Leu	Cys	Phe	Val	Asp	Ile	Asp	Asn	His	Phe	Ile	Glu	Leu	Pro	Glu	
			385					390						395		
gac	ttg	cca	cag	ttc	ccc	aac	aaa	ttg	gag	ttt	gtc	cag	gaa	gtc	tct	1491
Asp	Leu	Pro	Gln	Phe	Pro	Asn	Lys	Leu	Glu	Phe	Val	Gln	Glu	Val	Ser	
			400				405					410				
gag	att	ctc	atg	gca	ttt	gga	att	ccc	cct	gaa	ggg	aat	ctt	cat	tgc	1539
Glu	Ile	Leu	Met	Ala	Phe	Gly	Ile	Pro	Pro	Glu	Gly	Asn	Leu	His	Cys	
	415					420					425					
agt	gag	agt	gcc	tcc	aag	ctg	aag	agg	ctg	cgg	gcc	tct	gag	ctt	gtc	1587
Ser	Glu	Ser	Ala	Ser	Lys	Leu	Lys	Arg	Leu	Arg	Ala	Ser	Glu	Leu	Val	

430	435	440	
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Arg Pro Ser Thr Asn Glu Leu Pro Leu Phe Asp Phe Pro Val Lys Glu
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Trp Gln His Val Tyr Val Pro Ile Leu Pro Ala Ser Leu Leu His Phe
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Asp Asp Arg Ser Lys Leu Glu Leu Pro Gln Glu Ala Asn Leu Cys Phe
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Val Asp Ile Asp Asn His Phe Ile Glu Leu Pro Glu Asp Leu Pro Gln
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Phe Pro Asn Lys Leu Glu Phe Val Gln Glu Val Ser Glu Ile Leu Met
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Ala Phe Gly Ile Pro Pro Glu Gly Asn Leu His Cys Ser Glu Ser Ala
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Ser Lys Leu Lys Arg Leu Arg Ala Ser Glu Leu Val Ser Asp Lys Arg
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490

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Glu Thr Gln Met Phe Ala Ser Phe Ile Asp Asn Lys Ile Met Cys His
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Asp Lys Ile Arg Leu Leu Asn Val Arg Thr Pro Thr Leu Arg Thr Ser
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Lys Arg Asn Ala Pro Ala Gln Trp Arg Arg Lys Asp Arg Gln Lys Gln
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His Thr Glu His Leu Arg Leu Asp Asn Asp Gln Arg Glu Lys Tyr Ile
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Ile Gln Asp Met Arg His Ile Gln Asn Ile Gly Glu Ile Lys Thr Asp
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Ser	Thr	Glu	Lys	Cys	Glu	Ala	Val	Ile	Gly	His	Phe	Asn	Gly	Lys	Phe	
190					195				200						205	
att	aag	aca	cca	cca	gga	gtt	tct	gcc	ccc	aca	gaa	cct	tta	ttg	tgt	1094
Ile	Lys	Thr	Pro	Pro	Gly	Val	Ser	Ala	Pro	Thr	Glu	Pro	Leu	Leu	Cys	
				210					215					220		
aag	ttt	gct	gat	gga	gga	cag	aaa	aag	aga	cag	aac	cca	aac	aaa	tac	1142
Lys	Phe	Ala	Asp	Gly	Gly	Gln	Lys	Lys	Arg	Gln	Asn	Pro	Asn	Lys	Tyr	
			225				230					235				
atc	cct	aat	gga	aga	cca	tgg	cat	aga	gaa	gga	gag	gtg	aga	ctt	gct	1190
Ile	Pro	Asn	Gly	Arg	Pro	Trp	His	Arg	Glu	Gly	Glu	Val	Arg	Leu	Ala	
		240					245					250				
gga	atg	aca	ctt	act	tac	gac	cca	act	aca	gct	gct	ata	cag	aac	gga	1238
Gly	Met	Thr	Leu	Thr	Tyr	Asp	Pro	Thr	Thr	Ala	Ala	Ile	Gln	Asn	Gly	
	255					260					265					
ttt	tat	cct	tca	cca	tac	agt	att	gct	aca	aac	cga	atg	atc	act	caa	1286
Phe	Tyr	Pro	Ser	Pro	Tyr	Ser	Ile	Ala	Thr	Asn	Arg	Met	Ile	Thr	Gln	
270					275					280					285	
act	tct	att	aca	ccc	tat	att	gca	tct	cct	gta	tct	gcc	tac	cag	gtg	1334
Thr	Ser	Ile	Thr	Pro	Tyr	Ile	Ala	Ser	Pro	Val	Ser	Ala	Tyr	Gln	Val	
				290					295					300		
caa	agt	cct	tcg	tgg	atg	caa	cct	caa	cca	tat	att	cta	cag	cac	cct	1382
Gln	Ser	Pro	Ser	Trp	Met	Gln	Pro	Gln	Pro	Tyr	Ile	Leu	Gln	His	Pro	
			305					310					315			
ggg	gcc	gtg	tta	act	ccc	tca	atg	gag	cac	acc	atg	tca	cta	cag	ccc	1430
Gly	Ala	Val	Leu	Thr	Pro	Ser	Met	Glu	His	Thr	Met	Ser	Leu	Gln	Pro	

320	325	330	
gca tca atg atc agc cct ctg gcc cag cag atg agt cat ctg tca cta			1478
Ala Ser Met Ile Ser Pro Leu Ala Gln Gln Met Ser His Leu Ser Leu			
335	340	345	
ggc agc acc gga aca tac atg cct gca acg tca gct atg caa gga gcc			1526
Gly Ser Thr Gly Thr Tyr Met Pro Ala Thr Ser Ala Met Gln Gly Ala			
350	355	360	365
tac ttg cca cag tat gca cat atg cag acg aca gcg gtt cct gtt gag			1574
Tyr Leu Pro Gln Tyr Ala His Met Gln Thr Thr Ala Val Pro Val Glu			
370	375	380	
gag gca agt ggt caa cag cag gtg gct gtc gag acg tct aat gac cat			1622
Glu Ala Ser Gly Gln Gln Gln Val Ala Val Glu Thr Ser Asn Asp His			
385	390	395	
tct cca tat acc ttt caa cct aat aag taa ctgtgagatg tacagaaagg			1672
Ser Pro Tyr Thr Phe Gln Pro Asn Lys			
400	405		
tggttcttaca tgaagaaggg tgtgaaggct gaacaatcat ggattttttct gatcaattgt			1732
gcttttaggaa attattgaca gttttgcaca ggttcttgaa aacgttattt ataatgaaat			1792
caactaaaac tatttttgct ataagttcta taagggtgcat aaaaccctta aattcatcta			1852
gtagctgttc ccccgaacag gtttatttta gtaaaaaaaaa aaaaaacaaa aacaaaaaca			1912
aaagattttt atcaaagtgt atgatgcaaa aaaagaaaaa gaaaaaaaaa aagaaaagaa			1972
aacttcaatt ttctgggtat gcacaaagac catgaagact tatccaagtg catgaccgga			2032
tttttggtgt tttgttcatt ttgtgtttta tttgtgtttt ttttttccag ctgtatgaaa			2092
tgggctttct gaagtttaaa tagtccgact tcacccatgg tgttctgtgc ttgcagtgcg			2152
agtgttgctg taattcagtg ttgccgtcag tgtctctttt cttagctttc tgtctttctt			2212
tcaacgtagt gtgaagtgtc ttatcctttt ctatgaattc caatttgctt taactctttt			2272
gatgctgtag ctgtttcagt aaaagttagt tcaaactaat gatgtagaat gctttgacca			2332
aatgagctgg tctattatgc cttgtaaaac agcagcatag ggctttttaa aggtagtcaa			2392
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<211>	406		
<212>	PRT		
<213>	Homo sapiens		
<400>	82		
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1	5	10	15
Tyr Tyr Pro Gln Tyr Leu Gln Ala Lys Gln Ser Leu Val Pro Ala His			
20	25	30	

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

Thr Pro Tyr Ile Ala Ser Pro Val Ser Ala Tyr Gln Val Gln Ser Pro
 290 295 300

Ser Trp Met Gln Pro Gln Pro Tyr Ile Leu Gln His Pro Gly Ala Val
 305 310 315 320

Leu Thr Pro Ser Met Glu His Thr Met Ser Leu Gln Pro Ala Ser Met
 325 330 335

Ile Ser Pro Leu Ala Gln Gln Met Ser His Leu Ser Leu Gly Ser Thr
 340 345 350

Gly Thr Tyr Met Pro Ala Thr Ser Ala Met Gln Gly Ala Tyr Leu Pro
 355 360 365

Gln Tyr Ala His Met Gln Thr Thr Ala Val Pro Val Glu Glu Ala Ser
 370 375 380

Gly Gln Gln Gln Val Ala Val Glu Thr Ser Asn Asp His Ser Pro Tyr
 385 390 395 400

Thr Phe Gln Pro Asn Lys
 405

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 <211> 2596
 <212> DNA
 <213> Homo sapiens

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 <222> (641)..(1810)

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 gtcgggctcc gggaggaaac tccttgggag cgccctgtcc ggggtgccct ctgcgctctg 180
 cagtgtcttt ctttctgcct gggaggagga ggaggaggag gaagaggagg aggaggagga 240
 ggaggaggag gaagaggagg aggaggagga ggacgtctgg tcccggctgg gaggtggagc 300
 agcggcagca gcagcagccg ccgcccgcgc cgccgctgcc gccgccgcgc gaaagggaga 360
 ggcaggagag cccgagactt ggaaaccca aagtgtccgc gaccctgcac ggcaggctcc 420
 cttccagctt catgggcaaa gtgtggaaac agcagatgta ccctcagtac gccacctact 480
 attaccccca gtatctgcaa gccaagtttg gaaggcattc gggaatacca agtgaaaagg 540

aagagtgaag aacagaaaaa tgttagtggg atggcaaaca ctgtgaacat tgctgtttct	600
agtgggccag aaaaatcagt ctctggtccc agcccacccc atg gcc cct ccc agt Met Ala Pro Pro Ser 1 5	655
ccc agc acc acc agc agt aat aac aac agt agc agc agt agc aac tca Pro Ser Thr Thr Ser Ser Asn Asn Asn Ser Ser Ser Ser Asn Ser 10 15 20	703
gga tgg gat cag ctc agc aaa acg aac ctc tat atc cga gga ctg cct Gly Trp Asp Gln Leu Ser Lys Thr Asn Leu Tyr Ile Arg Gly Leu Pro 25 30 35	751
ccc cac acc acc gac cag gac ctg gtg aag ctc tgt caa cca tat ggg Pro His Thr Thr Asp Gln Asp Leu Val Lys Leu Cys Gln Pro Tyr Gly 40 45 50	799
aaa ata gtc tcc aca aag gca att ttg gat aag aca acg aac aaa tgc Lys Ile Val Ser Thr Lys Ala Ile Leu Asp Lys Thr Thr Asn Lys Cys 55 60 65	847
aaa ggt tat ggt ttt gtc gac ttt gac agc cct gca gca gct caa aaa Lys Gly Tyr Gly Phe Val Asp Phe Asp Ser Pro Ala Ala Ala Gln Lys 70 75 80 85	895
gct gtg tct gcc ctg aag gcc agt ggg gtt caa gct caa atg gca aag Ala Val Ser Ala Leu Lys Ala Ser Gly Val Gln Ala Gln Met Ala Lys 90 95 100	943
caa cag gaa caa gat cct acc aac ctc tac att tct aat ttg cca ctc Gln Gln Glu Gln Asp Pro Thr Asn Leu Tyr Ile Ser Asn Leu Pro Leu 105 110 115	991
tcc atg gat gag caa gaa cta gaa aat atg ctc aaa cca ttt gga caa Ser Met Asp Glu Gln Glu Leu Glu Asn Met Leu Lys Pro Phe Gly Gln 120 125 130	1039
gtt att tct aca agg ata cta cgt gat tcc agt ggt aca agt cgt ggt Val Ile Ser Thr Arg Ile Leu Arg Asp Ser Ser Gly Thr Ser Arg Gly 135 140 145	1087
gtt ggc ttt gct agg atg gaa tca aca gaa aaa tgt gaa gct gtt att Val Gly Phe Ala Arg Met Glu Ser Thr Glu Lys Cys Glu Ala Val Ile 150 155 160 165	1135
ggt cat ttt aat gga aaa ttt att aag aca cca cca gga gtt tct gcc Gly His Phe Asn Gly Lys Phe Ile Lys Thr Pro Pro Gly Val Ser Ala 170 175 180	1183
ccc aca gaa cct tta ttg tgt aag ttt gct gat gga gga cag aaa aag Pro Thr Glu Pro Leu Leu Cys Lys Phe Ala Asp Gly Gly Gln Lys Lys 185 190 195	1231
aga cag aac cca aac aaa tac atc cct aat gga aga cca tgg cat aga Arg Gln Asn Pro Asn Lys Tyr Ile Pro Asn Gly Arg Pro Trp His Arg 200 205 210	1279
gaa gga gag gtg aga ctt gct gga atg aca ctt act tac gac cca act Glu Gly Glu Val Arg Leu Ala Gly Met Thr Leu Thr Tyr Asp Pro Thr 215 220 225	1327
aca gct gct ata cag aac gga ttt tat cct tca cca tac agt att gct	1375

[illegible]

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 aaaaaaaaaa aaaaaa 2596

<210> 84
 <211> 389
 <212> PRT
 <213> Homo sapiens

<400> 84

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Ser Ser Ser Asn Ser Gly Trp Asp Gln Leu Ser Lys Thr Asn Leu Tyr
 20 25 30

Ile Arg Gly Leu Pro Pro His Thr Thr Asp Gln Asp Leu Val Lys Leu
 35 40 45

Cys Gln Pro Tyr Gly Lys Ile Val Ser Thr Lys Ala Ile Leu Asp Lys
 50 55 60

Thr Thr Asn Lys Cys Lys Gly Tyr Gly Phe Val Asp Phe Asp Ser Pro
 65 70 75 80

Ala Ala Ala Gln Lys Ala Val Ser Ala Leu Lys Ala Ser Gly Val Gln
 85 90 95

Ala Gln Met Ala Lys Gln Gln Glu Gln Asp Pro Thr Asn Leu Tyr Ile
 100 105 110

Ser Asn Leu Pro Leu Ser Met Asp Glu Gln Glu Leu Glu Asn Met Leu
 115 120 125

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

Gly Thr Ser Arg Gly Val Gly Phe Ala Arg Met Glu Ser Thr Glu Lys
 145 150 155 160

Cys Glu Ala Val Ile Gly His Phe Asn Gly Lys Phe Ile Lys Thr Pro
 165 170 175

Pro Gly Val Ser Ala Pro Thr Glu Pro Leu Leu Cys Lys Phe Ala Asp
 180 185 190

Gly Gly Gln Lys Lys Arg Gln Asn Pro Asn Lys Tyr Ile Pro Asn Gly
 195 200 205

Arg Pro Trp His Arg Glu Gly Glu Val Arg Leu Ala Gly Met Thr Leu
 210 215 220

Thr Tyr Asp Pro Thr Thr Ala Ala Ile Gln Asn Gly Phe Tyr Pro Ser
 225 230 235 240

Pro Tyr Ser Ile Ala Thr Asn Arg Met Ile Thr Gln Thr Ser Ile Thr
 245 250 255

Pro Tyr Ile Ala Ser Pro Val Ser Ala Tyr Gln Val Ala Lys Glu Thr
 260 265 270

Arg Glu Asn Lys Tyr Arg Gly Ser Ala Ile Lys Val Gln Ser Pro Ser
 275 280 285

Trp Met Gln Pro Gln Pro Tyr Ile Leu Gln His Pro Gly Ala Val Leu
 290 295 300

Thr Pro Ser Met Glu His Thr Met Ser Leu Gln Pro Ala Ser Met Ile
 305 310 315 320

Ser Pro Leu Ala Gln Gln Met Ser His Leu Ser Leu Gly Ser Thr Gly
 325 330 335

Thr Tyr Met Pro Ala Thr Ser Ala Met Gln Gly Ala Tyr Leu Pro Gln
 340 345 350

Tyr Ala His Met Gln Thr Thr Ala Val Pro Val Glu Glu Ala Ser Gly
 355 360 365

Gln Gln Gln Val Ala Val Glu Thr Ser Asn Asp His Ser Pro Tyr Thr
 370 375 380

Phe Gln Pro Asn Lys
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<210> 85
 <211> 2429
 <212> DNA
 <213> Homo sapiens

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 <222> (432)..(1643)

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gcagccggct cgcccagacg gaccgcggcc agcgcgccag cccttggcag ccccgagca	120
gtcgggctcc gggaggaaac tccttgggag cgccctgtcc ggggtgccct ctgcgctctg	180
cagtgtcttt ctttctgcct gggaggagga ggaggaggag gaagaggagg aggaggagga	240
ggaggaggag gaagaggagg aggaggagga ggacgtctgg tcccggctgg gaggtggagc	300
agcggcagca gcagcagccg ccgccgccgc cgccgctgcc gccgccgccg gaaagggaga	360
ggcaggagag cccgagactt ggaaaccca aagtgtccgc gaccctgcac ggcaggctcc	420
cttcagctt c atg ggc aaa gtg tgg aaa cag cag atg tac cct cag tac	470
Met Gly Lys Val Trp Lys Gln Gln Met Tyr Pro Gln Tyr	
1 5 10	
gcc acc tac tat tac ccc cag tat ctg caa gcc aag cag tct ctg gtc	518
Ala Thr Tyr Tyr Tyr Pro Gln Tyr Leu Gln Ala Lys Gln Ser Leu Val	
15 20 25	
cca gcc cac ccc atg gcc cct ccc agt ccc agc acc acc agc agt aat	566
Pro Ala His Pro Met Ala Pro Pro Ser Pro Ser Thr Thr Ser Ser Asn	
30 35 40 45	
aac aac agt agc agc agt agc aac tca gga tgg gat cag ctc agc aaa	614
Asn Asn Ser Ser Ser Ser Ser Asn Ser Gly Trp Asp Gln Leu Ser Lys	
50 55 60	
acg aac ctc tat atc cga gga ctg cct ccc cac acc acc gac cag gac	662
Thr Asn Leu Tyr Ile Arg Gly Leu Pro Pro His Thr Thr Asp Gln Asp	
65 70 75	
ctg gtg aag ctc tgt caa cca tat ggg aaa ata gtc tcc aca aag gca	710
Leu Val Lys Leu Cys Gln Pro Tyr Gly Lys Ile Val Ser Thr Lys Ala	
80 85 90	
att ttg gat aag aca acg aac aaa tgc aaa ggt tat ggt ttt gtc gac	758
Ile Leu Asp Lys Thr Thr Asn Lys Cys Lys Gly Tyr Gly Phe Val Asp	
95 100 105	
ttt gac agc cct gca gca gct caa aaa gct gtg tct gcc ctg aag gcc	806
Phe Asp Ser Pro Ala Ala Ala Gln Lys Ala Val Ser Ala Leu Lys Ala	
110 115 120 125	
agt ggg gtt caa gct caa atg gca aag caa cag gaa caa gat cct acc	854
Ser Gly Val Gln Ala Gln Met Ala Lys Gln Gln Glu Gln Asp Pro Thr	
130 135 140	
aac ctc tac att tct aat ttg cca ctc tcc atg gat gag caa gaa cta	902
Asn Leu Tyr Ile Ser Asn Leu Pro Leu Ser Met Asp Glu Gln Glu Leu	
145 150 155	
gaa aat atg ctc aaa cca ttt gga caa gtt att tct aca agg ata cta	950
Glu Asn Met Leu Lys Pro Phe Gly Gln Val Ile Ser Thr Arg Ile Leu	
160 165 170	
cgt gat tcc agt ggt aca agt cgt ggt gtt ggc ttt gct agg atg gaa	998
Arg Asp Ser Ser Gly Thr Ser Arg Gly Val Gly Phe Ala Arg Met Glu	
175 180 185	
tca aca gaa aaa tgt gaa gct gtt att ggt cat ttt aat gga aaa ttt	1046
Ser Thr Glu Lys Cys Glu Ala Val Ile Gly His Phe Asn Gly Lys Phe	
190 195 200 205	

att aag aca cca cca gga gtt tct gcc ccc aca gaa cct tta ttg tgt	1094
Ile Lys Thr Pro Pro Gly Val Ser Ala Pro Thr Glu Pro Leu Leu Cys	
210 215 220	
aag ttt gct gat gga gga cag aaa aag aga cag aac cca aac aaa tac	1142
Lys Phe Ala Asp Gly Gly Gln Lys Lys Arg Gln Asn Pro Asn Lys Tyr	
225 230 235	
atc cct aat gga aga cca tgg cat aga gaa gga gag gct gga atg aca	1190
Ile Pro Asn Gly Arg Pro Trp His Arg Glu Gly Glu Ala Gly Met Thr	
240 245 250	
ctt act tac gac cca act aca gct gct ata cag aac gga ttt tat cct	1238
Leu Thr Tyr Asp Pro Thr Thr Ala Ala Ile Gln Asn Gly Phe Tyr Pro	
255 260 265	
tca cca tac agt att gct aca aac cga atg atc act caa act tct att	1286
Ser Pro Tyr Ser Ile Ala Thr Asn Arg Met Ile Thr Gln Thr Ser Ile	
270 275 280 285	
aca ccc tat att gca tct cct gta tct gcc tac cag gtg caa agt cct	1334
Thr Pro Tyr Ile Ala Ser Pro Val Ser Ala Tyr Gln Val Gln Ser Pro	
290 295 300	
tcg tgg atg caa cct caa cca tat att cta cag cac cct ggt gcc gtg	1382
Ser Trp Met Gln Pro Gln Pro Tyr Ile Leu Gln His Pro Gly Ala Val	
305 310 315	
tta act ccc tca atg gag cac acc atg tca cta cag ccc gca tca atg	1430
Leu Thr Pro Ser Met Glu His Thr Met Ser Leu Gln Pro Ala Ser Met	
320 325 330	
atc agc cct ctg gcc cag cag atg agt cat ctg tca cta ggc agc acc	1478
Ile Ser Pro Leu Ala Gln Gln Met Ser His Leu Ser Leu Gly Ser Thr	
335 340 345	
gga aca tac atg cct gca acg tca gct atg caa gga gcc tac ttg cca	1526
Gly Thr Tyr Met Pro Ala Thr Ser Ala Met Gln Gly Ala Tyr Leu Pro	
350 355 360 365	
cag tat gca cat atg cag acg aca gcg gtt cct gtt gag gag gca agt	1574
Gln Tyr Ala His Met Gln Thr Thr Ala Val Pro Val Glu Glu Ala Ser	
370 375 380	
ggt caa cag cag gtg gct gtc gag acg tct aat gac cat tct cca tat	1622
Gly Gln Gln Gln Val Ala Val Glu Thr Ser Asn Asp His Ser Pro Tyr	
385 390 395	
acc ttt caa cct aat aag taa ctgtgagatg tacagaaagg tgttcttaca	1673
Thr Phe Gln Pro Asn Lys	
400	
tgaagaaggg tgtgaaggct gaacaatcat ggatTTTTct gatcaattgt gctttaggaa	1733
attattgaca gttttgcaca ggTtcttgaa aacgTtattt ataatgaaat caactaaaac	1793
tatttttgct ataagTtcta taaggtgcat aaaaccctta aattcatcta gtagctgttc	1853
ccccgaacag gtttatttta gtaaaaaaaa aaaaacaaaa aacaaaaaca aaagattttt	1913
atcaaatgtt atgatgcaaa aaaagaaaaa gaaaaaaaaa aagaaaagaa aacttcaatt	1973

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ttctgggtat gcacaaagac catgaagact tatccaagtg catgaccgga tttttgtggt 2033
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gaagttaaaa tagtccgact tcacccatgg tgttctgtgc ttgcagtgcg agtgttgctg 2153
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ctgtttcagt aaaagttagt tcaaactaat gatgtagaat gctttgacca aatgagctgg 2333
tctattatgc cttgtaaaac agcagcatag ggcttttaaa aggtagtcaa taaaagttgc 2393
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<210> 86
<211> 403
<212> PRT
<213> Homo sapiens

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<400> 86
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Met Gly Lys Val Trp Lys Gln Gln Met Tyr Pro Gln Tyr Ala Thr Tyr
1          5          10          15

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Tyr Tyr Pro Gln Tyr Leu Gln Ala Lys Gln Ser Leu Val Pro Ala His
          20          25          30

```

```

Pro Met Ala Pro Pro Ser Pro Ser Thr Thr Ser Ser Asn Asn Asn Ser
          35          40          45

```

```

Ser Ser Ser Ser Asn Ser Gly Trp Asp Gln Leu Ser Lys Thr Asn Leu
50          55          60

```

```

Tyr Ile Arg Gly Leu Pro Pro His Thr Thr Asp Gln Asp Leu Val Lys
65          70          75          80

```

```

Leu Cys Gln Pro Tyr Gly Lys Ile Val Ser Thr Lys Ala Ile Leu Asp
          85          90          95

```

```

Lys Thr Thr Asn Lys Cys Lys Gly Tyr Gly Phe Val Asp Phe Asp Ser
          100          105          110

```

```

Pro Ala Ala Ala Gln Lys Ala Val Ser Ala Leu Lys Ala Ser Gly Val
          115          120          125

```

```

Gln Ala Gln Met Ala Lys Gln Gln Glu Gln Asp Pro Thr Asn Leu Tyr
          130          135          140

```

```

Ile Ser Asn Leu Pro Leu Ser Met Asp Glu Gln Glu Leu Glu Asn Met
145          150          155          160

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Leu Lys Pro Phe Gly Gln Val Ile Ser Thr Arg Ile Leu Arg Asp Ser
 165 170 175

Ser Gly Thr Ser Arg Gly Val Gly Phe Ala Arg Met Glu Ser Thr Glu
 180 185 190

Lys Cys Glu Ala Val Ile Gly His Phe Asn Gly Lys Phe Ile Lys Thr
 195 200 205

Pro Pro Gly Val Ser Ala Pro Thr Glu Pro Leu Leu Cys Lys Phe Ala
 210 215 220

Asp Gly Gly Gln Lys Lys Arg Gln Asn Pro Asn Lys Tyr Ile Pro Asn
 225 230 235 240

Gly Arg Pro Trp His Arg Glu Gly Glu Ala Gly Met Thr Leu Thr Tyr
 245 250 255

Asp Pro Thr Thr Ala Ala Ile Gln Asn Gly Phe Tyr Pro Ser Pro Tyr
 260 265 270

Ser Ile Ala Thr Asn Arg Met Ile Thr Gln Thr Ser Ile Thr Pro Tyr
 275 280 285

Ile Ala Ser Pro Val Ser Ala Tyr Gln Val Gln Ser Pro Ser Trp Met
 290 295 300

Gln Pro Gln Pro Tyr Ile Leu Gln His Pro Gly Ala Val Leu Thr Pro
 305 310 315 320

Ser Met Glu His Thr Met Ser Leu Gln Pro Ala Ser Met Ile Ser Pro
 325 330 335

Leu Ala Gln Gln Met Ser His Leu Ser Leu Gly Ser Thr Gly Thr Tyr
 340 345 350

Met Pro Ala Thr Ser Ala Met Gln Gly Ala Tyr Leu Pro Gln Tyr Ala
 355 360 365

His Met Gln Thr Thr Ala Val Pro Val Glu Glu Ala Ser Gly Gln Gln
 370 375 380

Gln Val Ala Val Glu Thr Ser Asn Asp His Ser Pro Tyr Thr Phe Gln
 385 390 395 400

Pro Asn Lys


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<210> 87
<211> 4369
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (622) .. (1398)
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			110						115			120									
atc	ttc	ctg	ctc	tgc	ttc	agt	gtc	gtg	agc	ccc	tca	tcc	ttc	cag	aac	1035					
Ile	Phe	Leu	Leu	Cys	Phe	Ser	Val	Val	Ser	Pro	Ser	Ser	Phe	Gln	Asn						
			125						130			135									
gtc	agt	gag	aaa	tgg	gtg	ccg	gag	att	cga	tgc	cac	tgt	ccc	aaa	gcc	1083					
Val	Ser	Glu	Lys	Trp	Val	Pro	Glu	Ile	Arg	Cys	His	Cys	Pro	Lys	Ala						
			140						145			150									
ccc	atc	atc	cta	gtt	gga	acg	cag	tcg	gat	ctc	aga	gaa	gat	gtc	aaa	1131					
Pro	Ile	Ile	Leu	Val	Gly	Thr	Gln	Ser	Asp	Leu	Arg	Glu	Asp	Val	Lys						
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agtttatggc tatgaaaaca gctattttgt tacagctggc tgtttttata agtgtatcac 3687
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Leu Glu Gln Asn Gly Ser Pro Leu Gly Arg Gly Arg Leu Gly Ser Thr
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Gly Ala Lys Met Gln Gly Val Pro Leu Lys His Ser Gly His Leu Met
          50          55          60

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Lys Thr Asn Leu Arg Lys Gly Thr Met Leu Pro Val Phe Cys Val Val
65          70          75          80

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Glu His Tyr Glu Asn Ala Ile Glu Tyr Asp Cys Lys Glu Glu His Ala
          85          90          95

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Glu Phe Val Leu Val Arg Lys Asp Met Leu Phe Asn Gln Leu Ile Glu
          100          105          110

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Met	Ala	Leu	Leu	Ser	Leu	Gly	Tyr	Ser	His	Ser	Ser	Ala	Ala	Gln	Ala		
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Lys	Gly	Leu	Ile	Gln	Val	Gly	Lys	Trp	Asn	Pro	Val	Pro	Leu	Ser	Tyr		
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Val	Thr	Asp	Ala	Pro	Asp	Ala	Thr	Val	Ala	Asp	Met	Leu	Gln	Asp	Val		
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Tyr	His	Val	Val	Thr	Leu	Lys	Ile	Gln	Leu	His	Ser	Cys	Pro	Lys	Leu		
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Glu	Asp	Leu	Pro	Pro	Glu	Gln	Trp	Ser	His	Thr	Thr	Val	Arg	Asn	Ala		
			180					185					190				
Leu	Lys	Asp	Leu	Leu	Lys	Asp	Met	Asn	Gln	Ser	Ser	Leu	Ala	Lys	Glu		
		195					200					205					
Cys	Pro	Leu	Ser	Gln	Ser	Met	Ile	Ser	Ser	Ile	Val	Asn	Ser	Thr	Tyr		
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Tyr	Ala	Asn	Val	Ser	Ala	Ala	Lys	Cys	Gln	Glu	Phe	Gly	Arg	Trp	Tyr		
225					230					235					240		
Lys	His	Phe	Lys	Lys	Thr	Lys	Asp	Met	Met	Val	Glu	Met	Asp	Ser	Leu		
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Ser	Glu	Leu	Ser	Gln	Gln	Gly	Ala	Asn	His	Val	Asn	Phe	Gly	Gln	Gln		
			260					265					270				
Pro	Val	Pro	Gly	Asn	Thr	Ala	Glu	Gln	Pro	Pro	Ser	Pro	Ala	Gln	Leu		
		275					280					285					
Ser	His	Gly	Ser	Gln	Pro	Ser	Val	Arg	Thr	Pro	Leu	Pro	Asn	Leu	His		
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Pro	Gly	Leu	Val	Ser	Thr	Pro	Ile	Ser	Pro	Gln	Leu	Val	Asn	Gln	Gln		
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Leu	Val	Met	Ala	Gln	Leu	Leu	Asn	Gln	Gln	Tyr	Ala	Val	Asn	Arg	Leu		
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Leu	Ala	Gln	Gln	Ser	Leu	Asn	Gln	Gln	Tyr	Leu	Asn	His	Pro	Pro	Pro		
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Val	Ser	Arg	Ser	Met	Asn	Lys	Pro	Leu	Glu	Gln	Gln	Val	Ser	Thr	Asn		

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Arg Ala Gly Ile Ser Gln Ala Val Phe Ala Arg Val Ala Phe Asn Arg		
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		400
Thr Gln Gly Leu Leu Ser Glu Ile Leu Arg Lys Glu Glu Asp Pro Lys		
	405	410
		415
Thr Ala Ser Gln Ser Leu Leu Val Asn Leu Arg Ala Met Gln Asn Phe		
	420	425
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Leu Gln Leu Pro Glu Ala Glu Arg Asp Arg Ile Tyr Gln Asp Glu Arg		
	435	440
		445
Glu Arg Ser Leu Asn Ala Ala Ser Ala Met Gly Pro Ala Pro Leu Ile		
	450	455
		460
Ser Thr Pro Pro Ser Arg Pro Pro Gln Val Lys Thr Ala Thr Ile Ala		
465	470	475
		480
Thr Glu Arg Asn Gly Lys Pro Glu Asn Asn Thr Met Asn Ile Asn Ala		
	485	490
		495
Ser Ile Tyr Asp Glu Ile Gln Gln Glu Met Lys Arg Ala Lys Val Ser		
	500	505
		510
Gln Ala Leu Phe Ala Lys Val Ala Ala Thr Lys Ser Gln Gly Trp Leu		
	515	520
		525
Cys Glu Leu Leu Arg Trp Lys Glu Asp Pro Ser Pro Glu Asn Arg Thr		
	530	535
		540
Leu Trp Glu Asn Leu Ser Met Ile Arg Arg Phe Leu Ser Leu Pro Gln		
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Pro Glu Arg Asp Ala Ile Tyr Glu Gln Glu Ser Asn Ala Val His His		
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His Gly Asp Arg Pro Pro His Ile Ile His Val Pro Ala Glu Gln Ile		
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		590
Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Ala		
	595	600
		605

Pro Pro Pro Pro Gln Pro Gln Gln Gln Pro Gln Thr Gly Pro Arg Leu
610 615 620

Pro Pro Arg Gln Pro Thr Val Ala Ser Pro Ala Glu Ser Asp Glu Glu
625 630 635 640

Asn Arg Gln Lys Thr Arg Pro Arg Thr Lys Ile Ser Val Glu Ala Leu
645 650 655

Gly Ile Leu Gln Ser Phe Ile Gln Asp Val Gly Leu Tyr Pro Asp Glu
660 665 670

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

Ile Ile Lys Phe Phe Gln Asn Gln Arg Tyr Tyr Leu Lys His His Gly
690 695 700

Lys Leu Lys Asp Asn Ser Gly Leu Glu Val Asp Val Ala Glu Tyr Lys
705 710 715 720

Glu Glu Glu Leu Leu Lys Asp Leu Glu Glu Ser Val Gln Asp Lys Asn
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Thr Asn Thr Leu Phe Ser Val Lys Leu Glu Glu Glu Leu Ser Val Glu
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Gly Asn Thr Asp Ile Asn Thr Asp Leu Lys Asp
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Met Ala Asn Cys Gln Ile
1 5

gcc atc ttg tac cag aga ttc cag aga gtg gtc ttt gga att tcc caa 161
Ala Ile Leu Tyr Gln Arg Phe Gln Arg Val Val Phe Gly Ile Ser Gln
10 15 20

ctc ctt tgc ttc agt gcc ctg atc tct gaa cta aca aac cag aaa gaa 209
Leu Leu Cys Phe Ser Ala Leu Ile Ser Glu Leu Thr Asn Gln Lys Glu

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cag aat aaa aat gaa att gat tac ctc aat aag gtc cta ccc tac tac Gln Asn Lys Asn Glu Ile Asp Tyr Leu Asn Lys Val Leu Pro Tyr Tyr 75 80 85			353
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gat aat gaa cct aac aac aaa agg aac aac gag gac tgc gtg gag ata Asp Asn Glu Pro Asn Asn Lys Arg Asn Asn Glu Asp Cys Val Glu Ile 120 125 130			497
tac atc aag agt ccg tca gcc cct ggc aag tgg aat gat gag cac tgc Tyr Ile Lys Ser Pro Ser Ala Pro Gly Lys Trp Asn Asp Glu His Cys 135 140 145 150			545
ttg aag aaa aag cac gca ttg tgt tac aca gcc tcc tgc cag gac atg Leu Lys Lys Lys His Ala Leu Cys Tyr Thr Ala Ser Cys Gln Asp Met 155 160 165			593
tcc tgc agc aaa caa gga gag tgc ctc gag acc atc ggg aac tac acc Ser Cys Ser Lys Gln Gly Glu Cys Leu Glu Thr Ile Gly Asn Tyr Thr 170 175 180			641
tgc tcc tgt tac cct gga ttc tat ggg cca gaa tgt gaa tac gtg aga Cys Ser Cys Tyr Pro Gly Phe Tyr Gly Pro Glu Cys Glu Tyr Val Arg 185 190 195			689
gag tgt gga gaa ctt gag ctc cct caa cac gtg ctc atg aac tgc agc Glu Cys Gly Glu Leu Glu Leu Pro Gln His Val Leu Met Asn Cys Ser 200 205 210			737
cac cct ctg gga aac ttc tct ttt aac tcg cag tgc agc ttc cac tgc His Pro Leu Gly Asn Phe Ser Phe Asn Ser Gln Cys Ser Phe His Cys 215 220 225 230			785
act gac ggg tac caa gta aat ggg ccc agc aag ctg gaa tgc ttg gct Thr Asp Gly Tyr Gln Val Asn Gly Pro Ser Lys Leu Glu Cys Leu Ala 235 240 245			833
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cca ccc ctg aag att cct gaa cga gga aac atg atc tgc ctt cat tct Pro Pro Leu Lys Ile Pro Glu Arg Gly Asn Met Ile Cys Leu His Ser 265 270 275			929

gca	aaa	gca	ttc	cag	cat	cag	tct	agc	tgc	agc	ttc	agt	tgt	gaa	gag	977
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Gly	Phe	Ala	Leu	Val	Gly	Pro	Glu	Val	Val	Gln	Cys	Thr	Ala	Ser	Gly	
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Val	Trp	Thr	Ala	Pro	Ala	Pro	Val	Cys	Lys	Ala	Val	Gln	Cys	Gln	His	
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Leu	Glu	Ala	Pro	Ser	Glu	Gly	Thr	Met	Asp	Cys	Val	His	Pro	Leu	Thr	
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Arg	Val	Arg	Gly	Leu	Asp	Met	Leu	Arg	Cys	Ile	Asp	Ser	Gly	His	Trp	
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Ser	Pro	Val	His	Gly	Ser	Met	Asp	Cys	Ser	Pro	Ser	Leu	Arg	Ala	Phe	
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Gln	Tyr	Asp	Thr	Asn	Cys	Ser	Phe	Arg	Cys	Ala	Glu	Gly	Phe	Met	Leu	
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		425					430					435				
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Pro	Ala	Pro	Val	Cys	Gln	Ala	Leu	Gln	Cys	Gln	Asp	Leu	Pro	Val	Pro	
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Gln	Ser	Val	Cys	Ser	Phe	Thr	Cys	Asn	Glu	Gly	Leu	Leu	Leu	Val	Gly	
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aca	tgt	caa	ttc	atc	tgt	gac	gag	gga	tat	tct	ttg	tct	gga	cca	gaa	1745
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Arg	Leu	Asp	Cys	Thr	Arg	Ser	Gly	Arg	Trp	Thr	Asp	Ser	Pro	Pro	Met	
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Cys	Glu	Ala	Ile	Lys	Cys	Pro	Glu	Leu	Phe	Ala	Pro	Glu	Gln	Gly	Ser	
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Leu	Asp	Cys	Ser	Asp	Thr	Arg	Gly	Glu	Phe	Asn	Val	Gly	Ser	Thr	Cys	
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His	Phe	Ser	Cys	Asn	Asn	Gly	Phe	Lys	Leu	Glu	Gly	Pro	Asn	Asn	Val	
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gaa	tgc	aca	act	tct	gga	aga	tgg	tca	gct	act	cca	cca	acc	tgc	aaa	1985
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ggt	ttt	aat	acc	act	tgt	tac	ttt	ggc	tgc	aac	gct	gga	ttc	aca	ctc	2129
Gly	Phe	Asn	Thr	Thr	Cys	Tyr	Phe	Gly	Cys	Asn	Ala	Gly	Phe	Thr	Leu	
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Val	Thr	Pro	Ala	Cys	Arg	Ala	Val	Lys	Cys	Ser	Glu	Leu	His	Val	Asn	
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Lys	Pro	Ile	Ala	Met	Asn	Cys	Ser	Asn	Leu	Trp	Gly	Asn	Phe	Ser	Tyr	
				715					720					725		
gga	tca	atc	tgc	tct	ttc	cat	tgt	cta	gag	ggc	cag	tta	ctt	aat	ggc	2321
Gly	Ser	Ile	Cys	Ser	Phe	His	Cys	Leu	Glu	Gly	Gln	Leu	Leu	Asn	Gly	
			730					735					740			
tct	gca	caa	aca	gca	tgc	caa	gag	aat	ggc	cac	tgg	tca	act	acc	gtg	2369
Ser	Ala	Gln	Thr	Ala	Cys	Gln	Glu	Asn	Gly	His	Trp	Ser	Thr	Thr	Val	
		745					750					755				
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Pro Thr Cys Gln Ala Gly Pro Leu Thr Ile Gln Glu Ala Leu Thr Tyr
760 765 770

ttt ggt gga gcg gtg gct tct aca ata ggt ctg ata atg ggt ggg acg 2465
Phe Gly Gly Ala Val Ala Ser Thr Ile Gly Leu Ile Met Gly Gly Thr
775 780 785 790

ctc ctg gct ttg cta aga aag cgt ttc aga caa aaa gat gat ggg aaa 2513
Leu Leu Ala Leu Leu Arg Lys Arg Phe Arg Gln Lys Asp Asp Gly Lys
795 800 805

tgc ccc ttg aat cct cac agc cac cta gga aca tat gga gtt ttt aca 2561
Cys Pro Leu Asn Pro His Ser His Leu Gly Thr Tyr Gly Val Phe Thr
810 815 820

aac gct gca ttt gac ccg agt cct taa gggtttccata aacacccatg 2608
Asn Ala Ala Phe Asp Pro Ser Pro
825 830

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<400> 92

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Leu Thr Asn Gln Lys Glu Val Ala Ala Trp Thr Tyr His Tyr Ser Thr
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Lys Ala Tyr Ser Trp Asn Ile Ser Arg Lys Tyr Cys Gln Asn Arg Tyr
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Thr Asp Leu Val Ala Ile Gln Asn Lys Asn Glu Ile Asp Tyr Leu Asn
65 70 75 80

Lys Val Leu Pro Tyr Tyr Ser Ser Tyr Tyr Trp Ile Gly Ile Arg Lys
85 90 95

Asn Asn Lys Thr Trp Thr Trp Val Gly Thr Lys Lys Ala Leu Thr Asn
100 105 110

Glu Ala Glu Asn Trp Ala Asp Asn Glu Pro Asn Asn Lys Arg Asn Asn
115 120 125

Glu Asp Cys Val Glu Ile Tyr Ile Lys Ser Pro Ser Ala Pro Gly Lys
130 135 140

Trp Asn Asp Glu His Cys Leu Lys Lys Lys His Ala Leu Cys Tyr Thr
145 150 155 160

Ala Ser Cys Gln Asp Met Ser Cys Ser Lys Gln Gly Glu Cys Leu Glu
165 170 175

Thr Ile Gly Asn Tyr Thr Cys Ser Cys Tyr Pro Gly Phe Tyr Gly Pro
180 185 190

Glu Cys Glu Tyr Val Arg Glu Cys Gly Glu Leu Glu Leu Pro Gln His
195 200 205

Val Leu Met Asn Cys Ser His Pro Leu Gly Asn Phe Ser Phe Asn Ser
210 215 220

Gln Cys Ser Phe His Cys Thr Asp Gly Tyr Gln Val Asn Gly Pro Ser
225 230 235 240

Lys Leu Glu Cys Leu Ala Ser Gly Ile Trp Thr Asn Lys Pro Pro Gln
245 250 255

Cys Leu Ala Ala Gln Cys Pro Pro Leu Lys Ile Pro Glu Arg Gly Asn
260 265 270

Met Ile Cys Leu His Ser Ala Lys Ala Phe Gln His Gln Ser Ser Cys
275 280 285

Ser Phe Ser Cys Glu Glu Gly Phe Ala Leu Val Gly Pro Glu Val Val
290 295 300

Gln Cys Thr Ala Ser Gly Val Trp Thr Ala Pro Ala Pro Val Cys Lys
305 310 315 320

Ala Val Gln Cys Gln His Leu Glu Ala Pro Ser Glu Gly Thr Met Asp
 325 330 335

Cys Val His Pro Leu Thr Ala Phe Ala Tyr Gly Ser Ser Cys Lys Phe
 340 345 350

Glu Cys Gln Pro Gly Tyr Arg Val Arg Gly Leu Asp Met Leu Arg Cys
 355 360 365

Ile Asp Ser Gly His Trp Ser Ala Pro Leu Pro Thr Cys Glu Ala Ile
 370 375 380

Ser Cys Glu Pro Leu Glu Ser Pro Val His Gly Ser Met Asp Cys Ser
 385 390 395 400

Pro Ser Leu Arg Ala Phe Gln Tyr Asp Thr Asn Cys Ser Phe Arg Cys
 405 410 415

Ala Glu Gly Phe Met Leu Arg Gly Ala Asp Ile Val Arg Cys Asp Asn
 420 425 430

Leu Gly Gln Trp Thr Ala Pro Ala Pro Val Cys Gln Ala Leu Gln Cys
 435 440 445

Gln Asp Leu Pro Val Pro Asn Glu Ala Arg Val Asn Cys Ser His Pro
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Phe Gly Ala Phe Arg Tyr Gln Ser Val Cys Ser Phe Thr Cys Asn Glu
 465 470 475 480

Gly Leu Leu Leu Val Gly Ala Ser Val Leu Gln Cys Leu Ala Thr Gly
 485 490 495

Asn Trp Asn Ser Val Pro Pro Glu Cys Gln Ala Ile Pro Cys Thr Pro
 500 505 510

Leu Leu Ser Pro Gln Asn Gly Thr Met Thr Cys Val Gln Pro Leu Gly
 515 520 525

Ser Ser Ser Tyr Lys Ser Thr Cys Gln Phe Ile Cys Asp Glu Gly Tyr
 530 535 540

Ser Leu Ser Gly Pro Glu Arg Leu Asp Cys Thr Arg Ser Gly Arg Trp
 545 550 555 560

Thr Asp Ser Pro Pro Met Cys Glu Ala Ile Lys Cys Pro Glu Leu Phe
 565 570 575

Ala Pro Glu Gln Gly Ser Leu Asp Cys Ser Asp Thr Arg Gly Glu Phe
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Asn Val Gly Ser Thr Cys His Phe Ser Cys Asn Asn Gly Phe Lys Leu
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Glu Gly Pro Asn Asn Val Glu Cys Thr Thr Ser Gly Arg Trp Ser Ala
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Thr Pro Pro Thr Cys Lys Gly Ile Ala Ser Leu Pro Thr Pro Gly Leu
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Gln Cys Pro Ala Leu Thr Thr Pro Gly Gln Gly Thr Met Tyr Cys Arg
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His His Pro Gly Thr Phe Gly Phe Asn Thr Thr Cys Tyr Phe Gly Cys
660 665 670

Asn Ala Gly Phe Thr Leu Ile Gly Asp Ser Thr Leu Ser Cys Arg Pro
675 680 685

Ser Gly Gln Trp Thr Ala Val Thr Pro Ala Cys Arg Ala Val Lys Cys
690 695 700

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Trp Gly Asn Phe Ser Tyr Gly Ser Ile Cys Ser Phe His Cys Leu Glu
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His Trp Ser Thr Thr Val Pro Thr Cys Gln Ala Gly Pro Leu Thr Ile
755 760 765

Gln Glu Ala Leu Thr Tyr Phe Gly Gly Ala Val Ala Ser Thr Ile Gly
770 775 780

Leu Ile Met Gly Gly Thr Leu Leu Ala Leu Leu Arg Lys Arg Phe Arg
785 790 795 800

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Leu His Gly Gly Ser Ser Gly Pro Ser Pro Gly Pro Ser Val Pro Arg			
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Phe Leu Gly Pro Gln Gly Ser Leu Asn Leu Gln Ala Met Tyr Leu Asp			
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Glu Tyr Arg Asp Arg Leu Phe Leu Gly Gly Leu Asp Ala Leu Tyr Ser			
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Leu Arg Leu Asp Gln Ala Trp Pro Asp Pro Arg Glu Val Leu Trp Pro			
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Pro Gln Pro Gly Gln Arg Glu Glu Cys Val Arg Lys Gly Arg Asp Pro			
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Leu Thr Glu Cys Ala Asn Phe Val Arg Val Leu Gln Pro His Asn Arg			
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Thr His Leu Leu Ala Cys Gly Thr Gly Ala Phe Gln Pro Thr Cys Ala			
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Gly Ser Val Glu Ser Gly Arg Gly Arg Cys Pro His Glu Pro Ser Arg			
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Pro Phe Ala Ser Thr Phe Ile Asp Gly Glu Leu Tyr Thr Gly Leu Thr			
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Lys	Ala	Arg	Leu	Val	Cys	Ser	Val	Pro	Gly	Pro	Gly	Gly	Ala	Glu	Thr	
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Lys	Ser	Leu	Glu	Val	Tyr	Ala	Leu	Phe	Ser	Thr	Val	Ser	Ala	Val	Phe	
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Gln	Gly	Phe	Ala	Val	Cys	Val	Tyr	His	Met	Ala	Asp	Ile	Trp	Glu	Val	
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Phe	Asn	Gly	Pro	Phe	Ala	His	Arg	Asp	Gly	Pro	Gln	His	Gln	Trp	Gly	
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Pro	Tyr	Gly	Gly	Lys	Val	Pro	Phe	Pro	Arg	Pro	Gly	Val	Cys	Pro	Ser	
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Lys	Met	Thr	Ala	Gln	Pro	Gly	Arg	Pro	Phe	Gly	Ser	Thr	Lys	Asp	Tyr	
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Pro	Asp	Glu	Val	Leu	Gln	Phe	Ala	Arg	Ala	His	Pro	Leu	Met	Phe	Trp	
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cct	gtg	cgg	cct	cga	cat	ggc	cgc	cct	gtc	ctt	gtc	aag	acc	cac	ctg	1296
Pro	Val	Arg	Pro	Arg	His	Gly	Arg	Pro	Val	Leu	Val	Lys	Thr	His	Leu	
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gcc	cag	cag	cta	cac	cag	atc	gtg	gtg	gac	cgc	gtg	gag	gca	gag	gat	1344
Ala	Gln	Gln	Leu	His	Gln	Ile	Val	Val	Asp	Arg	Val	Glu	Ala	Glu	Asp	
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Cys Ser Gly Cys Phe Arg Ser Arg Ser Arg Gly Lys Gln Ala Arg Gly	
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Lys Ser Trp Ala Gly Leu Glu Leu Gly Lys Lys Met Lys Ser Arg Val	
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Leu His Gly Gly Ser Ser Gly Pro Ser Pro Gly Pro Ser Val Pro Arg
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Leu Arg Leu Ser Tyr Arg Asp Leu Leu Ser Ala Asn Arg Ser Ala Ile
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Phe Leu Gly Pro Gln Gly Ser Leu Asn Leu Gln Ala Met Tyr Leu Asp
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Gln Gly Phe Ala Val Cys Val Tyr His Met Ala Asp Ile Trp Glu Val
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Pro Tyr Gly Gly Lys Val Pro Phe Pro Arg Pro Gly Val Cys Pro Ser
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Lys Met Thr Ala Gln Pro Gly Arg Pro Phe Gly Ser Thr Lys Asp Tyr
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Pro Asp Glu Val Leu Gln Phe Ala Arg Ala His Pro Leu Met Phe Trp
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Gly Thr Tyr Asp Val Ile Phe Leu Gly Thr Asp Ser Gly Ser Val Leu
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Val Leu Glu Glu Leu Gln Val Phe Lys Val Pro Thr Pro Ile Thr Glu
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Met Glu Ile Ser Val Lys Arg Gln Met Leu Tyr Val Gly Ser Arg Leu
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Cys Ala Glu Cys Cys Leu Ala Arg Asp Pro Tyr Cys Ala Trp Asp Gly
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Ser Gln Glu Glu Glu Ala Val Gly Leu Val Ala Ala Thr Met Val Tyr
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Asp Gln Val Lys Thr Asp Glu Arg Val Leu His Thr Glu Arg Gly Leu
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Leu Phe Arg Arg Leu Ser Arg Phe Asp Ala Gly Thr Tyr Thr Cys Thr
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Val Ile Val Ala Ser Gln Leu Asp Asn Leu Phe Pro Pro Glu Pro Lys
 675 680 685

Pro Glu Glu Pro Pro Ala Arg Gly Gly Leu Ala Ser Thr Pro Pro Lys
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Ala Trp Tyr Lys Asp Ile Leu Gln Leu Ile Gly Phe Ala Asn Leu Pro
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Arg Val Asp Glu Tyr Cys Glu Arg Val Trp Cys Arg Gly Thr Thr Glu
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Cys Ser Gly Cys Phe Arg Ser Arg Ser Arg Gly Lys Gln Ala Arg Gly
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Glu	Val	Val	Asp	Glu	Ile	Glu	Leu	Leu	Cys	Gln	Arg	Arg	Ala	Leu	Glu	
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gcc	ttt	gac	ctg	gat	cct	gca	cag	tgg	gga	gtc	aat	gtc	cag	ccc	tac	433
Ala	Phe	Asp	Leu	Asp	Pro	Ala	Gln	Trp	Gly	Val	Asn	Val	Gln	Pro	Tyr	
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tcc	ggg	tcc	cca	gcc	aac	ctg	gcc	gtc	tac	aca	gcc	ctt	ctg	caa	cct	481
Ser	Gly	Ser	Pro	Ala	Asn	Leu	Ala	Val	Tyr	Thr	Ala	Leu	Leu	Gln	Pro	
			145					150					155			
cac	gac	cgg	atc	atg	ggg	ctg	gac	ctg	ccc	gat	ggg	ggc	cat	ctc	acc	529
His	Asp	Arg	Ile	Met	Gly	Leu	Asp	Leu	Pro	Asp	Gly	Gly	His	Leu	Thr	
		160					165					170				
cac	ggc	tac	atg	tct	gac	gtc	aag	cgg	ata	tca	gcc	acg	tcc	atc	ttc	577
His	Gly	Tyr	Met	Ser	Asp	Val	Lys	Arg	Ile	Ser	Ala	Thr	Ser	Ile	Phe	
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ttc	gag	tct	atg	ccc	tat	aag	ctc	aac	ccc	aaa	act	ggc	ctc	att	gac	625
Phe	Glu	Ser	Met	Pro	Tyr	Lys	Leu	Asn	Pro	Lys	Thr	Gly	Leu	Ile	Asp	
190					195				200					205		
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Tyr	Asn	Gln	Leu	Ala	Leu	Thr	Ala	Arg	Leu	Phe	Arg	Pro	Arg	Leu	Ile	
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Ile	Ala	Gly	Thr	Ser	Ala	Tyr	Ala	Arg	Leu	Ile	Asp	Tyr	Ala	Arg	Met	
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Arg	Glu	Val	Cys	Asp	Glu	Val	Lys	Ala	His	Leu	Leu	Ala	Asp	Met	Ala	

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cta gag cga ggc tac tca ctg gta tca ggt ggt act gac aac cac ctg Leu Glu Arg Gly Tyr Ser Leu Val Ser Gly Gly Thr Asp Asn His Leu 370 375 380			1153
gtg ctg gtg gac ctg cgg ccc aag ggc ctg gat gga gct cgg gct gag Val Leu Val Asp Leu Arg Pro Lys Gly Leu Asp Gly Ala Arg Ala Glu 385 390 395			1201
cgg gtg cta gag ctt gta tcc atc act gcc aac aag aac acc tgt cct Arg Val Leu Glu Leu Val Ser Ile Thr Ala Asn Lys Asn Thr Cys Pro 400 405 410			1249
gga gac cga agt gcc atc aca ccg ggc ggc ctg cgg ctt ggg gcc cca Gly Asp Arg Ser Ala Ile Thr Pro Gly Gly Leu Arg Leu Gly Ala Pro 415 420 425			1297
gcc tta act tct cga cag ttc cgt gag gat gac ttc cgg aga gtt gtg Ala Leu Thr Ser Arg Gln Phe Arg Glu Asp Asp Phe Arg Arg Val Val 430 435 440 445			1345
gac ttt ata gat gaa ggg gtc aac att ggc tta gag gtg aag agc aag Asp Phe Ile Asp Glu Gly Val Asn Ile Gly Leu Glu Val Lys Ser Lys 450 455 460			1393
act gcc aag ctc cag gat ttc aaa tcc ttc ctg ctt aag gac tca gaa Thr Ala Lys Leu Gln Asp Phe Lys Ser Phe Leu Leu Lys Asp Ser Glu 465 470 475			1441
aca agt cag cgt ctg gcc aac ctc agg caa cgg gtg gag cag ttt gcc Thr Ser Gln Arg Leu Ala Asn Leu Arg Gln Arg Val Glu Gln Phe Ala 480 485 490			1489
agg gcc ttc ccc atg cct ggt ttt gat gag cat tga aggcacctgg			1535

Arg Ala Phe Pro Met Pro Gly Phe Asp Glu His
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Leu Ser Asp Ser Asp Pro Glu Met Trp Glu Leu Leu Gln Arg Glu Lys
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Asp Arg Gln Cys Arg Gly Leu Glu Leu Ile Ala Ser Glu Asn Phe Cys
 65 70 75 80

Ser Arg Ala Ala Leu Glu Ala Leu Gly Ser Cys Leu Asn Asn Lys Tyr
 85 90 95

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

Asp Glu Ile Glu Leu Leu Cys Gln Arg Arg Ala Leu Glu Ala Phe Asp
 115 120 125

Leu Asp Pro Ala Gln Trp Gly Val Asn Val Gln Pro Tyr Ser Gly Ser
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Pro Ala Asn Leu Ala Val Tyr Thr Ala Leu Leu Gln Pro His Asp Arg
 145 150 155 160

Ile Met Gly Leu Asp Leu Pro Asp Gly Gly His Leu Thr His Gly Tyr
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Met Ser Asp Val Lys Arg Ile Ser Ala Thr Ser Ile Phe Phe Glu Ser
 180 185 190

Met Pro Tyr Lys Leu Asn Pro Lys Thr Gly Leu Ile Asp Tyr Asn Gln
 195 200 205

Leu Ala Leu Thr Ala Arg Leu Phe Arg Pro Arg Leu Ile Ile Ala Gly
 210 215 220

Thr Ser Ala Tyr Ala Arg Leu Ile Asp Tyr Ala Arg Met Arg Glu Val
 225 230 235 240

Cys Asp Glu Val Lys Ala His Leu Leu Ala Asp Met Ala His Ile Ser
 245 250 255

Gly Leu Val Ala Ala Lys Val Ile Pro Ser Pro Phe Lys His Ala Asp
 260 265 270

Ile Val Thr Thr Thr Thr His Lys Thr Leu Arg Gly Ala Arg Ser Gly
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Leu Ile Phe Tyr Arg Lys Gly Val Lys Ala Val Asp Pro Lys Thr Gly
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Arg Glu Ile Pro Tyr Thr Phe Glu Asp Arg Ile Asn Phe Ala Val Phe
 305 310 315 320

Pro Ser Leu Gln Gly Gly Pro His Asn His Ala Ile Ala Ala Val Ala
 325 330 335

Val Ala Leu Lys Gln Ala Cys Thr Pro Met Phe Arg Glu Tyr Ser Leu
 340 345 350

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

Gly Tyr Ser Leu Val Ser Gly Gly Thr Asp Asn His Leu Val Leu Val
 370 375 380

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

Glu Leu Val Ser Ile Thr Ala Asn Lys Asn Thr Cys Pro Gly Asp Arg
 405 410 415

Ser Ala Ile Thr Pro Gly Gly Leu Arg Leu Gly Ala Pro Ala Leu Thr
 420 425 430

Ser Arg Gln Phe Arg Glu Asp Asp Phe Arg Arg Val Val Asp Phe Ile
 435 440 445

Asp Glu Gly Val Asn Ile Gly Leu Glu Val Lys Ser Lys Thr Ala Lys
 450 455 460

Leu Gln Asp Phe Lys Ser Phe Leu Leu Lys Asp Ser Glu Thr Ser Gln
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Pro Met Pro Gly Phe Asp Glu His
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 Met Pro Leu Phe Ala Thr
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 aat ccc ttc gat cag gat gtt gag aaa gca acc agc gag atg aat act 282
 Asn Pro Phe Asp Gln Asp Val Glu Lys Ala Thr Ser Glu Met Asn Thr
 10 15 20
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 Ala Glu Asp Trp Gly Leu Ile Leu Asp Ile Cys Asp Lys Val Gly Gln
 25 30 35

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aac cac aaa gat cct cac gtt gct atg cag gct ttg act ctt cta gga Asn His Lys Asp Pro His Val Ala Met Gln Ala Leu Thr Leu Leu Gly 55 60 65 70	426
gca tgt gta tca aac tgt ggc aaa att ttt cat tta gaa gta tgt tca Ala Cys Val Ser Asn Cys Gly Lys Ile Phe His Leu Glu Val Cys Ser 75 80 85	474
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gaa caa gca aaa gca agc cca gct ctt gta gcc aag gat cct ggt act Glu Gln Ala Lys Ala Ser Pro Ala Leu Val Ala Lys Asp Pro Gly Thr 155 160 165	714
gtg gct aac aaa aaa gaa gaa gaa gat tta gca aaa gcc att gag ttg Val Ala Asn Lys Lys Glu Glu Glu Asp Leu Ala Lys Ala Ile Glu Leu 170 175 180	762
tct ctc aag gaa caa agg cag cag tca acc acc ctt tcc act ttg tat Ser Leu Lys Glu Gln Arg Gln Gln Ser Thr Thr Leu Ser Thr Leu Tyr 185 190 195	810
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Pro Glu Pro Glu Pro Ala Phe Ile Asp Glu Asp Lys Met Asp Gln Leu	
295 300 305 310	
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Leu Gln Met Leu Gln Ser Thr Asp Pro Ser Asp Asp Gln Pro Asp Leu	
315 320 325	
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Pro Glu Leu Leu His Leu Glu Ala Met Cys His Gln Met Gly Pro Leu	
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Ile Asp Glu Lys Leu Glu Asp Ile Asp Arg Lys His Ser Glu Leu Ser	
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Glu Leu Asn Val Lys Val Met Glu Ala Leu Ser Leu Tyr Thr Lys Leu	
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Met Asn Glu Asp Pro Met Tyr Ser Met Tyr Ala Lys Leu Gln Asn Gln	
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Gly Pro Pro Pro Ser Gly Ala Tyr Leu Val Ala Gly Asn Ala Gln Met	
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Ser Gln Ala Val Val Pro Pro Ser Ala Asn Pro Ala Leu Pro Ser Gln	
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Gln Thr Gln Ala Ala Tyr Pro Asn Thr Met Val Ser Ser Val Gln Gly	
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Asn Thr Tyr Pro Ser Gln Ala Pro Val Tyr Ser Pro Pro Pro Ala Ala	
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Thr Ala Ala Ala Thr Ala Asp Val Thr Leu Tyr Gln Asn Ala Gly	
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cct aat atg ccc cag gtg cca aac tat aac tta aca tca tca act ctg	1770
Pro Asn Met Pro Gln Val Pro Asn Tyr Asn Leu Thr Ser Ser Thr Leu	
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cct cag ccc gga ggc agc caa cag cca cct cag cca cag caa cca tat	1818
Pro Gln Pro Gly Gly Ser Gln Gln Pro Pro Gln Pro Gln Gln Pro Tyr	
520 525 530	
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Ser Gln Lys Ala Leu Leu	

535

540

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<213> Homo sapiens

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20           25           30

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Cys Asp Lys Val Gly Gln Ser Arg Thr Gly Pro Lys Asp Cys Leu Arg
35           40           45

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Ser Ile Met Arg Arg Val Asn His Lys Asp Pro His Val Ala Met Gln
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Leu	Asn	Lys	Gly	His	Pro	Lys	Val	Cys	Glu	Lys	Leu	Lys	Ala	Leu	Met	100	105	110	
Val	Glu	Trp	Thr	Asp	Glu	Phe	Lys	Asn	Asp	Pro	Gln	Leu	Ser	Leu	Ile	115	120	125	
Ser	Ala	Met	Ile	Lys	Asn	Leu	Lys	Glu	Gln	Gly	Val	Thr	Phe	Pro	Ala	130	135	140	
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Ala	Lys	Asp	Pro	Gly	Thr	Val	Ala	Asn	Lys	Lys	Glu	Glu	Glu	Asp	Leu	165	170	175	
Ala	Lys	Ala	Ile	Glu	Leu	Ser	Leu	Lys	Glu	Gln	Arg	Gln	Gln	Ser	Thr	180	185	190	
Thr	Leu	Ser	Thr	Leu	Tyr	Pro	Ser	Thr	Ser	Ser	Leu	Leu	Thr	Asn	His	195	200	205	
Gln	His	Glu	Gly	Arg	Lys	Val	Arg	Ala	Ile	Tyr	Asp	Phe	Glu	Ala	Ala	210	215	220	
Glu	Asp	Asn	Glu	Leu	Thr	Phe	Lys	Ala	Gly	Glu	Ile	Ile	Thr	Val	Leu	225	230	235	240
Asp	Asp	Ser	Asp	Pro	Asn	Trp	Trp	Lys	Gly	Glu	Thr	His	Gln	Gly	Ile	245	250	255	
Gly	Leu	Phe	Pro	Ser	Asn	Phe	Val	Thr	Ala	Asp	Leu	Thr	Ala	Glu	Pro	260	265	270	
Glu	Met	Ile	Lys	Thr	Glu	Lys	Lys	Thr	Val	Gln	Phe	Ser	Asp	Asp	Val	275	280	285	
Gln	Val	Glu	Thr	Ile	Glu	Pro	Glu	Pro	Glu	Pro	Ala	Phe	Ile	Asp	Glu	290	295	300	
Asp	Lys	Met	Asp	Gln	Leu	Leu	Gln	Met	Leu	Gln	Ser	Thr	Asp	Pro	Ser				

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Gly	Ser	Gln	Val	Tyr	Ala	Gly	Pro	Pro	Pro	Ser	Gly	Ala	Tyr	Leu	Val
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Glu	Gln	Leu	Ser	Ser	Leu	Ser	Gln	Ala	Val	Val	Pro	Pro	Ser	Ala	Asn
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Pro	Ala	Leu	Pro	Ser	Gln	Gln	Thr	Gln	Ala	Ala	Tyr	Pro	Asn	Thr	Met
	450					455					460				
Val	Ser	Ser	Val	Gln	Gly	Asn	Thr	Tyr	Pro	Ser	Gln	Ala	Pro	Val	Tyr
465					470					475					480
Ser	Pro	Pro	Pro	Ala	Ala	Thr	Ala	Ala	Ala	Ala	Thr	Ala	Asp	Val	Thr
				485					490					495	
Leu	Tyr	Gln	Asn	Ala	Gly	Pro	Asn	Met	Pro	Gln	Val	Pro	Asn	Tyr	Asn
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Leu	Thr	Ser	Ser	Thr	Leu	Pro	Gln	Pro	Gly	Gly	Ser	Gln	Gln	Pro	Pro
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                1                5                10

gcc cag cgg ctc ccc gac tcc ttc aag gac agc ccc agt aag ggc ctt      161
Ala Gln Arg Leu Pro Asp Ser Phe Lys Asp Ser Pro Ser Lys Gly Leu
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gga cct tgc gga tgg att ttg gtg gcg ttc tca ttc tta ttc acc gtt      209
Gly Pro Cys Gly Trp Ile Leu Val Ala Phe Ser Phe Leu Phe Thr Val
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ata act ttc cca atc tca ata tgg atg tgc ata aag att ata aaa gag      257
Ile Thr Phe Pro Ile Ser Ile Trp Met Cys Ile Lys Ile Ile Lys Glu
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tat gaa aga gcc atc atc ttt aga ttg ggt cgc att tta caa gga gga      305
Tyr Glu Arg Ala Ile Ile Phe Arg Leu Gly Arg Ile Leu Gln Gly Gly
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gcc aaa gga cct ggt ttg ttt ttt att ctg cca tgc act gac agc ttc      353
Ala Lys Gly Pro Gly Leu Phe Phe Ile Leu Pro Cys Thr Asp Ser Phe
                80                85                90

atc aaa gtg gac atg aga act att tca ttt gat att cct cct cag gag      401
Ile Lys Val Asp Met Arg Thr Ile Ser Phe Asp Ile Pro Pro Gln Glu
                95                100                105

atc ctc aca aag gat tca gtg aca att agc gtg gat ggt gtg gtc tat      449
Ile Leu Thr Lys Asp Ser Val Thr Ile Ser Val Asp Gly Val Val Tyr
                110                115                120

tac cgc gtt cag aat gca acc ctg gct gtg gca aat atc acc aac gct      497
Tyr Arg Val Gln Asn Ala Thr Leu Ala Val Ala Asn Ile Thr Asn Ala
                125                130                135

gac tca gca acc cgt ctt ttg gca caa act act ctg agg aat gtt ctg      545
Asp Ser Ala Thr Arg Leu Leu Ala Gln Thr Thr Leu Arg Asn Val Leu
        140                145                150                155

ggc acc aag aat ctt tct cag atc ctc tct gac aga gaa gaa att gca      593
Gly Thr Lys Asn Leu Ser Gln Ile Leu Ser Asp Arg Glu Glu Ile Ala
                160                165                170

cac aac atg cag tct act ctg gat gat gcc act gat gcc tgg gga ata      641
His Asn Met Gln Ser Thr Leu Asp Asp Ala Thr Asp Ala Trp Gly Ile
                175                180                185

aag gtg gag cgt gtg gaa att aag gat gtg aaa cta cct gtg cag ctc      689
Lys Val Glu Arg Val Glu Ile Lys Asp Val Lys Leu Pro Val Gln Leu
                190                195                200

cag aga gct atg gct gca gaa gca gaa gcg tcc cgc gag gcc cgc gcc      737
Gln Arg Ala Met Ala Ala Glu Ala Glu Ala Ser Arg Glu Ala Arg Ala

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205	210	215	
aag gtt att gca gcc gaa gga gaa atg aat gca tcc agg gct ctg aaa			785
Lys Val Ile Ala Ala Glu Gly Glu Met Asn Ala Ser Arg Ala Leu Lys			
220	225	230	235
gaa gcc tcc atg gtc atc act gaa tct cct gca gcc ctt cag ctc cga			833
Glu Ala Ser Met Val Ile Thr Glu Ser Pro Ala Ala Leu Gln Leu Arg			
	240	245	250
tac ctg cag aca ctg acc acc att gct gct gag aaa aac tca aca att			881
Tyr Leu Gln Thr Leu Thr Thr Ile Ala Ala Glu Lys Asn Ser Thr Ile			
	255	260	265
gtc ttc cct ctg ccc ata gat atg ctg caa gga atc ata ggg gca aaa			929
Val Phe Pro Leu Pro Ile Asp Met Leu Gln Gly Ile Ile Gly Ala Lys			
	270	275	280
cac agc cat cta ggc tag tgtagagatg agcgctagcc ttccaagcat			977
His Ser His Leu Gly			
285			
gaagtcgggg accaaattag cctttaactc ataaagagag ggtagggcctt ttctttttcc			1037
atatgtcaat tgtggtgttc ccagaatgta tagcagttat aaaaataggt gaaagaattg			1097
ttagcttgta aatactgaga gattggtgat ttatataagg taatctgtta gtcttaaaat			1157
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aatacttttt taagagataa cttcaggaaa ccattatatt ttactatctg catgctgtta			2177
actgtggtac actgtgaaat atgttgatta caaaccatt cattacatag tataaggaat			2237

tcacagtata ttgactatat agtgtctaata gatcttgggc agatactgtc aaacttacaa 2297
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 3108

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 <212> PRT
 <213> Homo sapiens

<400> 100

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

Ile Leu Val Ala Phe Ser Phe Leu Phe Thr Val Ile Thr Phe Pro Ile
35 40 45

Ser Ile Trp Met Cys Ile Lys Ile Ile Lys Glu Tyr Glu Arg Ala Ile
50 55 60

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

Leu Phe Phe Ile Leu Pro Cys Thr Asp Ser Phe Ile Lys Val Asp Met
85 90 95

Arg Thr Ile Ser Phe Asp Ile Pro Pro Gln Glu Ile Leu Thr Lys Asp
 100 105 110

Ser Val Thr Ile Ser Val Asp Gly Val Val Tyr Tyr Arg Val Gln Asn
 115 120 125

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

Leu Leu Ala Gln Thr Thr Leu Arg Asn Val Leu Gly Thr Lys Asn Leu
 145 150 155 160

Ser Gln Ile Leu Ser Asp Arg Glu Glu Ile Ala His Asn Met Gln Ser
 165 170 175

Thr Leu Asp Asp Ala Thr Asp Ala Trp Gly Ile Lys Val Glu Arg Val
 180 185 190

Glu Ile Lys Asp Val Lys Leu Pro Val Gln Leu Gln Arg Ala Met Ala
 195 200 205

Ala Glu Ala Glu Ala Ser Arg Glu Ala Arg Ala Lys Val Ile Ala Ala
 210 215 220

Glu Gly Glu Met Asn Ala Ser Arg Ala Leu Lys Glu Ala Ser Met Val
 225 230 235 240

Ile Thr Glu Ser Pro Ala Ala Leu Gln Leu Arg Tyr Leu Gln Thr Leu
 245 250 255

Thr Thr Ile Ala Ala Glu Lys Asn Ser Thr Ile Val Phe Pro Leu Pro
 260 265 270

Ile Asp Met Leu Gln Gly Ile Ile Gly Ala Lys His Ser His Leu Gly
 275 280 285

<210> 101
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (81)..(452)

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 gcgactgcgt ctcgggcagc atg gcc gag aag cgg cac aca cgg gac tcc gaa 113
 Met Ala Glu Lys Arg His Thr Arg Asp Ser Glu

	1	5	10	
gcc cag cgg ctc ccc gac tcc ttc aag gac agc ccc agt aag ggc ctt				161
Ala Gln Arg Leu Pro Asp Ser Phe Lys Asp Ser Pro Ser Lys Gly Leu	15	20	25	
gga cct tgc gga tgg att ttg gtg gcg ttc tca ttc tta ttc acc gtt				209
Gly Pro Cys Gly Trp Ile Leu Val Ala Phe Ser Phe Leu Phe Thr Val	30	35	40	
ata act ttc cca atc tca ata tgg atg tgc ata aag gtt att gca gcc				257
Ile Thr Phe Pro Ile Ser Ile Trp Met Cys Ile Lys Val Ile Ala Ala	45	50	55	
gaa gga gaa atg aat gca tcc agg gct ctg aaa gaa gcc tcc atg gtc				305
Glu Gly Glu Met Asn Ala Ser Arg Ala Leu Lys Glu Ala Ser Met Val	60	65	70	75
atc act gaa tct cct gca gcc ctt cag ctc cga tac ctg cag aca ctg				353
Ile Thr Glu Ser Pro Ala Ala Leu Gln Leu Arg Tyr Leu Gln Thr Leu	80	85	90	
acc acc att gct gct gag aaa aac tca aca att gtc ttc cct ctg ccc				401
Thr Thr Ile Ala Ala Glu Lys Asn Ser Thr Ile Val Phe Pro Leu Pro	95	100	105	
ata gat atg ctg caa gga atc ata ggg gca aaa cac agc cat cta ggc				449
Ile Asp Met Leu Gln Gly Ile Ile Gly Ala Lys His Ser His Leu Gly	110	115	120	
tag tgtagagatg agcgctagcc ttccaagcat gaagtcgggg accaaattag				502
cctttaactc ataaagagag ggtagggctt ttctttttcc atatgtcaat tgtggtgttc				562
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gattggtgat ttatataagg taatctgtta gtcttaaaat agttaaaagt ttgtatTTTT				682
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gttgcccagg ctggagtgca atagcatgat ctcggtcac tgcaacctcc gcoctoctggg				982
ttcaagagat tctcctgcct cagcctcccc agtagctggg attacaggct catgccacca				1042
tgcccagcta atTTTTgtat tattattatt gTTTTtagt agagacgggg tttcaccatg				1102
ttggccaggc tagtcacgaa ctctaacct caggtgatcc acccacctct gcoctccaaa				1162
gtgctgggat tacaggcatg agctaccaca cctggTTTTg agagtcttaa ttaaggaaat				1222
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<210> 102
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 102

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

Ile Leu Val Ala Phe Ser Phe Leu Phe Thr Val Ile Thr Phe Pro Ile
35 40 45

Ser Ile Trp Met Cys Ile Lys Val Ile Ala Ala Glu Gly Glu Met Asn
50 55 60

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

Ala Ala Leu Gln Leu Arg Tyr Leu Gln Thr Leu Thr Thr Ile Ala Ala
85 90 95

Glu Lys Asn Ser Thr Ile Val Phe Pro Leu Pro Ile Asp Met Leu Gln
100 105 110

Gly Ile Ile Gly Ala Lys His Ser His Leu Gly
115 120

<210> 103
<211> 1027
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (74)..(250)

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gataaacaac ttg atg cag atg ttt ccc cca agc cca cta ttt ttc ttc 109
Met Gln Met Phe Pro Pro Ser Pro Leu Phe Phe Phe
1 5 10
ctt caa ttg ctg aaa caa agc tcc aga agg ctg gaa cat acc ttt gtc 157
Leu Gln Leu Leu Lys Gln Ser Ser Arg Arg Leu Glu His Thr Phe Val
15 20 25
ttc ttg aga aat ttt tcc ctg atg tta tta aga tac att ggc aag aaa 205
Phe Leu Arg Asn Phe Ser Leu Met Leu Leu Arg Tyr Ile Gly Lys Lys
30 35 40
aga aga gca aca cga ttc tgg gat ccc agg agg gga aca cca tga 250
Arg Arg Ala Thr Arg Phe Trp Asp Pro Arg Arg Gly Thr Pro
45 50 55
agactaacga cacatacatg aaatttagct ggttaacggt gccagaaaag tcaactggaca 310
aagaacacag atgtatcgtc agacatgaga ataataaaaa cggagttgat caagaaatta 370
tctttcctcc aataaagaca gatgtcatca caatggatcc caaagacaat tgttcaaaag 430
atgcaaatga tacactactg ctgcagctca caaacacctc tgcattattac atgtacctcc 490
tcctgctcct caagagtgtg gtctatTTTT ccatcatcac ctgctgtctg cttagaagaa 550
cggcttttctg ctgcaatgga gagaaatcat aacagacggt ggcacaagga ggccatcttt 610
tcctcatcgg ttattgtccc tagaagcgtc ttctgaggat ctagttgggc tttcttttctg 670
ggtttgggcc atttcagttc tcatgtgtgt actattctat cattattgta taacgggtttt 730
caaaccagtg ggcacacaga gaacctcact ctgtaataac aatgaggaat agccacggcg 790

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 agataactgc ctggaagcct ttcattttac acgccctgaa gcagtcttct ttgctagttg 970
 aattatgtgg tgtgtttttc cgtaataagc aaaataaatt taaaaaatg aaaagtt 1027

<210> 104
 <211> 58
 <212> PRT
 <213> Homo sapiens

<400> 104

Met Gln Met Phe Pro Pro Ser Pro Leu Phe Phe Phe Leu Gln Leu Leu
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Lys Gln Ser Ser Arg Arg Leu Glu His Thr Phe Val Phe Leu Arg Asn
 20 25 30

Phe Ser Leu Met Leu Leu Arg Tyr Ile Gly Lys Lys Arg Arg Ala Thr
 35 40 45

Arg Phe Trp Asp Pro Arg Arg Gly Thr Pro
 50 55

<210> 105
 <211> 1027
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (247)..(582)

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 gataaacaac ttgatgcaga tgtttccccc aagcccacta tttttcttcc ttcaattgct 120
 gaaacaaagc tccagaaggc tggaacatac ctttgtcttc ttgagaaatt tttccctgat 180
 gttattaaga tacattggca agaaaagaag agcaacacga ttctgggatc ccaggagggg 240
 aacacc atg aag act aac gac aca tac atg aaa ttt agc tgg tta acg 288
 Met Lys Thr Asn Asp Thr Tyr Met Lys Phe Ser Trp Leu Thr
 1 5 10
 gtg cca gaa aag tca ctg gac aaa gaa cac aga tgt atc gtc aga cat 336
 Val Pro Glu Lys Ser Leu Asp Lys Glu His Arg Cys Ile Val Arg His
 15 20 25 30
 gag aat aat aaa aac gga gtt gat caa gaa att atc ttt cct cca ata 384
 Glu Asn Asn Lys Asn Gly Val Asp Gln Glu Ile Ile Phe Pro Pro Ile
 35 40 45

aag aca gat gtc atc aca atg gat ccc aaa gac aat tgt tca aaa gat 432
Lys Thr Asp Val Ile Thr Met Asp Pro Lys Asp Asn Cys Ser Lys Asp
50 55 60

gca aat gat aca cta ctg ctg cag ctc aca aac acc tct gca tat tac 480
Ala Asn Asp Thr Leu Leu Leu Gln Leu Thr Asn Thr Ser Ala Tyr Tyr
65 70 75

atg tac ctc ctc ctg ctc ctc aag agt gtg gtc tat ttt gcc atc atc 528
Met Tyr Leu Leu Leu Leu Leu Lys Ser Val Val Tyr Phe Ala Ile Ile
80 85 90

acc tgc tgt ctg ctt aga aga acg gct ttc tgc tgc aat gga gag aaa 576
Thr Cys Cys Leu Leu Arg Arg Thr Ala Phe Cys Cys Asn Gly Glu Lys
95 100 105 110

tca taa cagacggtgg cacaaggagg ccatcttttc ctcatogggtt attgtcccta 632
Ser

gaagcgtctt ctgaggatct agttgggctt tctttctggg tttgggccat ttcagttctc 692

atgtgtgtac tattctatca ttattgtata acggttttca aaccagtggg cacacagaga 752

acctcactct gtaataacaa tgaggaatag ccacggcgat ctccagcacc aatctctcca 812

tgttttccac agctcctcca gccaacccaa atagecgctg ctatagtgtg gacatcctgc 872

ggcttctagc cttgtccctc tcttagtggt ctttaatcag ataactgcct ggaagccttt 932

cattttacac gccctgaagc agtcttcttt gctagttgaa ttatgtggtg tgtttttccg 992

taataagcaa aataaatTTTA aaaaaatgaa aagtt 1027

<210> 106

 $\langle 211 \rangle$ 111

<212> PRT

<213> Homo sapiens

<400> 106

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Glu Lys Ser Leu Asp Lys Glu His Arg Cys Ile Val Arg His Glu Asn
20 25 30

Asn Lys Asn Gly Val Asp Gln Glu Ile Ile Phe Pro Pro Ile Lys Thr
35 40 45

Asp Val Ile Thr Met Asp Pro Lys Asp Asn Cys Ser Lys Asp Ala Asn
50 55 60

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

Leu Leu Leu Leu Leu Lys Ser Val Val Tyr Phe Ala Ile Ile Thr Cys
 85 90 95

Cys Leu Leu Arg Arg Thr Ala Phe Cys Cys Asn Gly Glu Lys Ser
 100 105 110

<210> 107
 <211> 3283
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (197)..(1351)

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 gcgggcgag cgcacc atg ccg cag ctg gac tcc ggc ggc ggc ggc ggc ggc 232
 Met Pro Gln Leu Asp Ser Gly Gly Gly Gly Gly Ala Gly
 1 5 10
 ggc ggc gac gac ctg ggc ggc ccg gac gag ctg ctg gcc ttc cag gat 280
 Gly Gly Asp Asp Leu Gly Ala Pro Asp Glu Leu Leu Ala Phe Gln Asp
 15 20 25
 gaa ggc gag gag cag gac gac aag agc cgc gac agc gcc gcc ggt ccc 328
 Glu Gly Glu Glu Gln Asp Asp Lys Ser Arg Asp Ser Ala Ala Gly Pro
 30 35 40
 gag cgc gac ctg gcc gag ctg aag tcg tcg ctg gtg aac gag tcc gag 376
 Glu Arg Asp Leu Ala Glu Leu Lys Ser Ser Leu Val Asn Glu Ser Glu
 45 50 55 60
 ggc ggc gcc gcc gcc ggc gca ggc atc ccg ggc gtc ccg ggc gcc gcc gcc 424
 Gly Ala Ala Gly Gly Ala Gly Ile Pro Gly Val Pro Gly Ala Gly Ala
 65 70 75
 ggg gcc cgc gcc gag gcc gag gct ctg ggc cgc gaa cac gct gcg cag 472
 Gly Ala Arg Gly Glu Ala Glu Ala Leu Gly Arg Glu His Ala Ala Gln
 80 85 90
 aga ctg ttc ccg gac aaa ctt cca gag ccc ctg gag gac gcc ctg aag 520
 Arg Leu Phe Pro Asp Lys Leu Pro Glu Pro Leu Glu Asp Gly Leu Lys
 95 100 105
 gcc ccg gag tgc acc agc ggc atg tac aaa gag acc gtc tac tcc gcc 568
 Ala Pro Glu Cys Thr Ser Gly Met Tyr Lys Glu Thr Val Tyr Ser Ala
 110 115 120
 ttc aat ctg ctg atg cat tac cca ccc ccc tcg gga gca ggc cag cac 616
 Phe Asn Leu Leu Met His Tyr Pro Pro Pro Ser Gly Ala Gly Gln His
 125 130 135 140
 ccc cag ccg cag ccc ccg ctg cac aag gcc aat cag ccc ccc cac ggt 664
 Pro Gln Pro Gln Pro Pro Leu His Lys Ala Asn Gln Pro Pro His Gly

				145				150				155												
gtc	ccc	caa	ctc	tct	ctc	tac	gaa	cat	ttc	aac	agc	cca	cat	ccc	acc	712								
Val	Pro	Gln	Leu	Ser	Leu	Tyr	Glu	His	Phe	Asn	Ser	Pro	His	Pro	Thr									
				160				165				170												
cct	gca	cct	gcg	gac	atc	agc	cag	aag	caa	gtt	cac	agg	cct	ctg	cag	760								
Pro	Ala	Pro	Ala	Asp	Ile	Ser	Gln	Lys	Gln	Val	His	Arg	Pro	Leu	Gln									
				175				180				185												
acc	cct	gac	ctc	tct	ggc	ttc	tac	tcc	ctg	acc	tca	ggc	agc	atg	ggg	808								
Thr	Pro	Asp	Leu	Ser	Gly	Phe	Tyr	Ser	Leu	Thr	Ser	Gly	Ser	Met	Gly									
				190				195				200												
cag	ctc	ccc	cac	act	gtg	agc	tgg	ttc	acc	cac	cca	tcc	ttg	atg	cta	856								
Gln	Leu	Pro	His	Thr	Val	Ser	Trp	Phe	Thr	His	Pro	Ser	Leu	Met	Leu									
				210				215				220												
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Gly	Ser	Gly	Val	Pro	Gly	His	Pro	Ala	Ala	Ile	Pro	His	Pro	Ala	Ile									
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Val	Pro	Pro	Ser	Gly	Lys	Gln	Glu	Leu	Gln	Pro	Phe	Asp	Arg	Asn	Leu									
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Lys	Thr	Gln	Ala	Glu	Ser	Lys	Ala	Glu	Lys	Glu	Ala	Lys	Lys	Pro	Thr									
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atc	aag	aag	ccc	ctc	aat	gcc	ttc	atg	ctg	tac	atg	aag	gag	atg	aga	1048								
Ile	Lys	Lys	Pro	Leu	Asn	Ala	Phe	Met	Leu	Tyr	Met	Lys	Glu	Met	Arg									
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gcc	aag	gtc	att	gca	gag	tgc	aca	ctt	aag	gag	agc	gct	gcc	atc	aac	1096								
Ala	Lys	Val	Ile	Ala	Glu	Cys	Thr	Leu	Lys	Glu	Ser	Ala	Ala	Ile	Asn									
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cag	atc	ctg	ggc	cgc	agg	tgg	cac	gcg	ctg	tcg	cga	gaa	gag	cag	gcc	1144								
Gln	Ile	Leu	Gly	Arg	Arg	Trp	His	Ala	Leu	Ser	Arg	Glu	Glu	Gln	Ala									
				305				310				315												
aag	tac	tat	gag	ctg	gcc	cgc	aag	gag	agg	cag	ctg	cac	atg	cag	cta	1192								
Lys	Tyr	Tyr	Glu	Leu	Ala	Arg	Lys	Glu	Arg	Gln	Leu	His	Met	Gln	Leu									
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tac	cca	ggc	tgg	tca	gcg	cgg	gac	aac	tac	ggg	aag	aag	aag	agg	cgg	1240								
Tyr	Pro	Gly	Trp	Ser	Ala	Arg	Asp	Asn	Tyr	Gly	Lys	Lys	Lys	Arg	Arg									
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Ser	Arg	Glu	Lys	His	Gln	Glu	Ser	Thr	Thr	Gly	Gly	Lys	Arg	Asn	Ala									
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ttc	ggc	act	tac	ccg	gag	aag	gcc	gct	gcc	cca	gcc	ccg	ttc	ctt	ccg	1336								
Phe	Gly	Thr	Tyr	Pro	Glu	Lys	Ala	Ala	Ala	Pro	Ala	Pro	Phe	Leu	Pro									
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Met	Thr	Val	Leu																					
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<400> 108

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

Ala Glu Leu Lys Ser Ser Leu Val Asn Glu Ser Glu Gly Ala Ala Gly
 50 55 60

Gly Ala Gly Ile Pro Gly Val Pro Gly Ala Gly Ala Gly Ala Arg Gly
 65 70 75 80

Glu Ala Glu Ala Leu Gly Arg Glu His Ala Ala Gln Arg Leu Phe Pro
 85 90 95

Asp Lys Leu Pro Glu Pro Leu Glu Asp Gly Leu Lys Ala Pro Glu Cys
 100 105 110

Thr Ser Gly Met Tyr Lys Glu Thr Val Tyr Ser Ala Phe Asn Leu Leu
 115 120 125

Met His Tyr Pro Pro Pro Ser Gly Ala Gly Gln His Pro Gln Pro Gln
 130 135 140

Pro Pro Leu His Lys Ala Asn Gln Pro Pro His Gly Val Pro Gln Leu
 145 150 155 160

Ser Leu Tyr Glu His Phe Asn Ser Pro His Pro Thr Pro Ala Pro Ala
 165 170 175

Asp Ile Ser Gln Lys Gln Val His Arg Pro Leu Gln Thr Pro Asp Leu
 180 185 190

Ser Gly Phe Tyr Ser Leu Thr Ser Gly Ser Met Gly Gln Leu Pro His
 195 200 205

Thr Val Ser Trp Phe Thr His Pro Ser Leu Met Leu Gly Ser Gly Val
 210 215 220

Pro Gly His Pro Ala Ala Ile Pro His Pro Ala Ile Val Pro Pro Ser
225 230 235 240

Gly Lys Gln Glu Leu Gln Pro Phe Asp Arg Asn Leu Lys Thr Gln Ala
245 250 255

Glu Ser Lys Ala Glu Lys Glu Ala Lys Lys Pro Thr Ile Lys Lys Pro
260 265 270

Leu Asn Ala Phe Met Leu Tyr Met Lys Glu Met Arg Ala Lys Val Ile
275 280 285

Ala Glu Cys Thr Leu Lys Glu Ser Ala Ala Ile Asn Gln Ile Leu Gly
290 295 300

Arg Arg Trp His Ala Leu Ser Arg Glu Glu Gln Ala Lys Tyr Tyr Glu
305 310 315 320

Leu Ala Arg Lys Glu Arg Gln Leu His Met Gln Leu Tyr Pro Gly Trp
325 330 335

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

His Gln Glu Ser Thr Thr Gly Gly Lys Arg Asn Ala Phe Gly Thr Tyr
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Pro Glu Lys Ala Ala Ala Pro Ala Pro Phe Leu Pro Met Thr Val Leu
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Met Tyr Lys Glu Thr Val Tyr Ser Ala Phe Asn
1 5 10

ctg ctc atg cat tac cca ccc ccc tcg gga gca ggg cag cac ccc cag 160
Leu Leu Met His Tyr Pro Pro Pro Ser Gly Ala Gly Gln His Pro Gln
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Pro	Gln	Pro	Pro	Leu	His	Lys	Ala	Asn	Gln	Pro	Pro	His	Gly	Val	Pro	
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Gln	Leu	Ser	Leu	Tyr	Glu	His	Phe	Asn	Ser	Pro	His	Pro	Thr	Pro	Ala	
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cct	gcg	gac	atc	agc	cag	aag	caa	gtt	cac	agg	cct	ctg	cag	acc	cct	304
Pro	Ala	Asp	Ile	Ser	Gln	Lys	Gln	Val	His	Arg	Pro	Leu	Gln	Thr	Pro	
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Asp	Leu	Ser	Gly	Phe	Tyr	Ser	Leu	Thr	Ser	Gly	Ser	Met	Gly	Gln	Leu	
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ccc	cac	act	gtg	agc	tgg	ttc	acc	cac	cca	tcc	ttg	atg	cta	ggc	tct	400
Pro	His	Thr	Val	Ser	Trp	Phe	Thr	His	Pro	Ser	Leu	Met	Leu	Gly	Ser	
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ggc	gta	cct	ggc	cac	cca	gca	gcc	atc	ccc	cac	ccg	gcc	att	gtg	ccc	448
Gly	Val	Pro	Gly	His	Pro	Ala	Ala	Ile	Pro	His	Pro	Ala	Ile	Val	Pro	
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Pro	Ser	Gly	Lys	Gln	Glu	Leu	Gln	Pro	Phe	Asp	Arg	Asn	Leu	Lys	Thr	
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caa	gca	gag	tcc	aag	gca	gag	aag	gag	gcc	aag	aag	cca	acc	atc	aag	544
Gln	Ala	Glu	Ser	Lys	Ala	Glu	Lys	Glu	Ala	Lys	Lys	Pro	Thr	Ile	Lys	
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Lys	Pro	Leu	Asn	Ala	Phe	Met	Leu	Tyr	Met	Lys	Glu	Met	Arg	Ala	Lys	
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Val	Ile	Ala	Glu	Cys	Thr	Leu	Lys	Glu	Ser	Ala	Ala	Ile	Asn	Gln	Ile	
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Leu	Gly	Arg	Arg	Trp	His	Ala	Leu	Ser	Arg	Glu	Glu	Gln	Ala	Lys	Tyr	
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tat	gag	ctg	gcc	cgc	aag	gag	agg	cag	ctg	cac	atg	cag	cta	tac	cca	736
Tyr	Glu	Leu	Ala	Arg	Lys	Glu	Arg	Gln	Leu	His	Met	Gln	Leu	Tyr	Pro	
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Gly	Trp	Ser	Ala	Arg	Asp	Asn	Tyr	Gly	Lys	Lys	Lys	Arg	Arg	Ser	Arg	
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2821

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<400> 110

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Pro Pro Pro Ser Gly Ala Gly Gln His Pro Gln Pro Gln Pro Pro Leu
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His Lys Ala Asn Gln Pro Pro His Gly Val Pro Gln Leu Ser Leu Tyr
 35 40 45

Glu His Phe Asn Ser Pro His Pro Thr Pro Ala Pro Ala Asp Ile Ser
 50 55 60

Gln Lys Gln Val His Arg Pro Leu Gln Thr Pro Asp Leu Ser Gly Phe
 65 70 75 80

Tyr Ser Leu Thr Ser Gly Ser Met Gly Gln Leu Pro His Thr Val Ser
 85 90 95

Trp Phe Thr His Pro Ser Leu Met Leu Gly Ser Gly Val Pro Gly His
 100 105 110

Pro Ala Ala Ile Pro His Pro Ala Ile Val Pro Pro Ser Gly Lys Gln
 115 120 125

Glu Leu Gln Pro Phe Asp Arg Asn Leu Lys Thr Gln Ala Glu Ser Lys
 130 135 140

Ala Glu Lys Glu Ala Lys Lys Pro Thr Ile Lys Lys Pro Leu Asn Ala
 145 150 155 160

Phe Met Leu Tyr Met Lys Glu Met Arg Ala Lys Val Ile Ala Glu Cys
 165 170 175

Thr Leu Lys Glu Ser Ala Ala Ile Asn Gln Ile Leu Gly Arg Arg Trp
 180 185 190

His Ala Leu Ser Arg Glu Glu Gln Ala Lys Tyr Tyr Glu Leu Ala Arg
 195 200 205

Lys Glu Arg Gln Leu His Met Gln Leu Tyr Pro Gly Trp Ser Ala Arg

210	215	220	
Asp Asn Tyr Gly Lys Lys Lys Arg Arg Ser Arg Glu Lys His Gln Glu			
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Ala Ala Ala Pro Ala Pro Phe Leu Pro Met Thr Val Leu			
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	Met Tyr Lys Glu Thr Val Tyr Ser Ala Phe Asn		
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Leu Leu Met His Tyr Pro Pro Pro Ser Gly Ala Gly Gln His Pro Gln			
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ccg cag ccc ccg ctg cac aag gcc aat cag ccc ccc cac ggt gtc ccc			208
Pro Gln Pro Pro Leu His Lys Ala Asn Gln Pro Pro His Gly Val Pro			
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caa ctc tct ctc tac gaa cat ttc aac agc cca cat ccc acc cct gca			256
Gln Leu Ser Leu Tyr Glu His Phe Asn Ser Pro His Pro Thr Pro Ala			
	45 50 55		
cct gcg gac atc agc cag aag caa gtt cac agg cct ctg cag acc cct			304
Pro Ala Asp Ile Ser Gln Lys Gln Val His Arg Pro Leu Gln Thr Pro			
60 65 70 75			
gac ctc tct ggc ttc tac tcc ctg acc tca ggc agc atg ggg cag ctc			352
Asp Leu Ser Gly Phe Tyr Ser Leu Thr Ser Gly Ser Met Gly Gln Leu			
	80 85 90		
ccc cac act gtg agc tgg ttc acc cac cca tcc ttg atg cta ggt tct			400
Pro His Thr Val Ser Trp Phe Thr His Pro Ser Leu Met Leu Gly Ser			
	95 100 105		
ggt gta cct ggt cac cca gca gcc atc ccc cac ccg gcc att gtg ccc			448
Gly Val Pro Gly His Pro Ala Ala Ile Pro His Pro Ala Ile Val Pro			
	110 115 120		
ccc tca ggg aag cag gag ctg cag ccc ttc gac cgc aac ctg aag aca			496
Pro Ser Gly Lys Gln Glu Leu Gln Pro Phe Asp Arg Asn Leu Lys Thr			
	125 130 135		

caa gca gag tcc aag gca gag aag gag gcc aag aag cca acc atc aag 544
 Gln Ala Glu Ser Lys Ala Glu Lys Glu Ala Lys Lys Pro Thr Ile Lys
 140 145 150 155

aag ccc ctc aat gcc ttc atg ctg tac atg aag gag atg aga gcc aag 592
 Lys Pro Leu Asn Ala Phe Met Leu Tyr Met Lys Glu Met Arg Ala Lys
 160 165 170

gtc att gca gag tgc aca ctt aag gag agc gct gcc atc aac cag atc 640
 Val Ile Ala Glu Cys Thr Leu Lys Glu Ser Ala Ala Ile Asn Gln Ile
 175 180 185

ctg ggc cgc agg tgg cac gcg ctg tcg cga gaa gag cag gcc aag tac 688
 Leu Gly Arg Arg Trp His Ala Leu Ser Arg Glu Glu Gln Ala Lys Tyr
 190 195 200

tat gag ctg gcc cgc aag gag agg cag ctg cac atg cag cta tac cca 736
 Tyr Glu Leu Ala Arg Lys Glu Arg Gln Leu His Met Gln Leu Tyr Pro
 205 210 215

ggc tgg tca gcg cgg gac aac tac ggg aag aag aag agg cgg tcg agg 784
 Gly Trp Ser Ala Arg Asp Asn Tyr Gly Lys Lys Lys Arg Arg Ser Arg
 220 225 230 235

gaa aag cac caa gaa tcc acc aca gag aca aac tgg ccc aga gaa ctc 832
 Glu Lys His Gln Glu Ser Thr Thr Glu Thr Asn Trp Pro Arg Glu Leu
 240 245 250

aag gat ggt aat gga caa gag tca ctg tcc atg tct tct tcc tct agc 880
 Lys Asp Gly Asn Gly Gln Glu Ser Leu Ser Met Ser Ser Ser Ser Ser
 255 260 265

cca gct tga ggactgggat ggctgggcaa ggaagccata ggcattgcgg 929
 Pro Ala

ccccttgccct tgggtgcagat gtgagtccca caaacacatc tggagaagct caaaggccgg 989

gactgggaga tgactccctt ggaagacagg agagatgact cccttggaag acagatgaca 1049

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<211> 269

<212> PRT

<213> Homo sapiens

<400> 112

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

Glu His Phe Asn Ser Pro His Pro Thr Pro Ala Pro Ala Asp Ile Ser
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Gln Lys Gln Val His Arg Pro Leu Gln Thr Pro Asp Leu Ser Gly Phe
 65 70 75 80

Tyr Ser Leu Thr Ser Gly Ser Met Gly Gln Leu Pro His Thr Val Ser
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Trp Phe Thr His Pro Ser Leu Met Leu Gly Ser Gly Val Pro Gly His
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Pro Ala Ala Ile Pro His Pro Ala Ile Val Pro Pro Ser Gly Lys Gln
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Glu Leu Gln Pro Phe Asp Arg Asn Leu Lys Thr Gln Ala Glu Ser Lys
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Ala Glu Lys Glu Ala Lys Lys Pro Thr Ile Lys Lys Pro Leu Asn Ala
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Phe Met Leu Tyr Met Lys Glu Met Arg Ala Lys Val Ile Ala Glu Cys
 165 170 175

Thr Leu Lys Glu Ser Ala Ala Ile Asn Gln Ile Leu Gly Arg Arg Trp
 180 185 190

His Ala Leu Ser Arg Glu Glu Gln Ala Lys Tyr Tyr Glu Leu Ala Arg
 195 200 205

Lys Glu Arg Gln Leu His Met Gln Leu Tyr Pro Gly Trp Ser Ala Arg
 210 215 220

Asp Asn Tyr Gly Lys Lys Lys Arg Arg Ser Arg Glu Lys His Gln Glu
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Thr	Val	Cys 75	Asp	Ser	Cys	Glu	Asp 80	Ser	Thr	Tyr	Thr	Gln 85	Leu	Trp	Asn	
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Cys	Ala	Pro	Leu 140	Arg	Lys	Cys	Arg	Pro 145	Gly	Phe	Gly	Val	Ala 150	Arg	Pro	
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Cys Val Ile Met Thr Gln Val Lys Lys Lys Pro Leu Cys Leu Gln Arg				
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Glu Ala Lys Val Pro His Leu Pro Ala Asp Lys Ala Arg Gly Thr Gln				
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Gly Pro Glu Gln Gln His Leu Leu Ile Thr Ala Pro Ser Ser Ser Ser				
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acc cag gtc aat gtc acc tgc atc gtg aac gtc tgt agc agc tct gac				1265
Thr Gln Val Asn Val Thr Cys Ile Val Asn Val Cys Ser Ser Ser Asp				
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Asp Ser Ser Pro Ser Glu Ser Pro Lys Asp Glu Gln Val Pro Phe Ser				
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Lys Glu Glu Cys Ala Phe Arg Ser Gln Leu Glu Thr Pro Glu Thr Leu				
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ctg ggg agc acc gaa gag aag ccc ctg ccc ctt gga gtg cct gat gct				1457
Leu Gly Ser Thr Glu Glu Lys Pro Leu Pro Leu Gly Val Pro Asp Ala				
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Gly Met Lys Pro Ser				
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Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys
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Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp
 65 70 75 80

Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys
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Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg
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Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu
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Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg
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Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val
 145 150 155 160

Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr
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Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly
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Asn Ala Ser Met Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser
 195 200 205

Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser
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Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser
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Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly
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Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly
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Leu Leu Ile Ile Gly Val Val Asn Cys Val Ile Met Thr Gln Val Lys
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Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro
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Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu
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Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser
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Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly
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Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile
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Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln
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Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser
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Gly Ser Pro Ser Pro Asp Ser Gly Ser Ala Ser Pro Val Glu Glu Glu
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gac gtg ggc tcc tcg gag aag ctt ggc agg gag acg gag gaa cag gac      734
Asp Val Gly Ser Ser Glu Lys Leu Gly Arg Glu Thr Glu Glu Gln Asp
                45                50                55

agc gac tct gca gag cag ggg gat cct gct ggt gag ggg aaa gag gtc      782
Ser Asp Ser Ala Glu Gln Gly Asp Pro Ala Gly Glu Gly Lys Glu Val
        60                65                70                75

ctg tgt gac ttc tgc ctt gat gac acc aga aga gtg aag gca gtg aag      830
Leu Cys Asp Phe Cys Leu Asp Asp Thr Arg Arg Val Lys Ala Val Lys
                80                85                90

tcc tgt cta acc tgc atg gtg aat tac tgt gaa gag cac ttg cag ccg      878
Ser Cys Leu Thr Cys Met Val Asn Tyr Cys Glu Glu His Leu Gln Pro
                95                100                105

cat cag gtg aac atc aaa ctg caa agc cac ctg ctg acc gag cca gtg      926
His Gln Val Asn Ile Lys Leu Gln Ser His Leu Leu Thr Glu Pro Val
                110                115                120

aag gac cac aac tgg cga tac tgc cct gcc cac cac agc cca ctg tct      974
Lys Asp His Asn Trp Arg Tyr Cys Pro Ala His His Ser Pro Leu Ser
                125                130                135

gcc ttc tgc tgc cct gat cag cag tgc atc tgc cag gac tgt tgc cag      1022

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Ala 140	Phe	Cys	Cys	Pro	Asp 145	Gln	Gln	Cys	Ile	Cys 150	Gln	Asp	Cys	Cys	Gln 155		
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Glu	His	Ser	Gly	His	Thr	Ile	Val	Ser	Leu	Asp	Ala	Ala	Arg	Arg	Asp		
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aag	gag	gct	gaa	ctc	cag	tgc	acc	cag	tta	gac	ttg	gag	cgg	aaa	ctc	1118	
Lys	Glu	Ala	Glu	Leu	Gln	Cys	Thr	Gln	Leu	Asp	Leu	Glu	Arg	Lys	Leu		
			175					180					185				
aag	ttg	aat	gaa	aat	gcc	atc	tcc	agg	ctc	cag	gct	aac	caa	aag	tct	1166	
Lys	Leu	Asn	Glu	Asn	Ala	Ile	Ser	Arg	Leu	Gln	Ala	Asn	Gln	Lys	Ser		
		190					195					200					
gtt	ctg	gtg	tcg	gtg	tca	gag	gtc	aaa	gcg	gtg	gct	gaa	atg	cag	ttt	1214	
Val	Leu	Val	Ser	Val	Ser	Glu	Val	Lys	Ala	Val	Ala	Glu	Met	Gln	Phe		
	205					210					215						
ggg	gaa	ctc	ctt	gct	gct	gtg	agg	aag	gcc	cag	gcc	aat	gtg	atg	ctc	1262	
Gly	Glu	Leu	Leu	Ala	Ala	Val	Arg	Lys	Ala	Gln	Ala	Asn	Val	Met	Leu		
220				225					230						235		
ttc	tta	gag	gag	aag	gag	caa	gct	gcg	ctg	agc	cag	gcc	aac	ggt	atc	1310	
Phe	Leu	Glu	Glu	Lys	Glu	Gln	Ala	Ala	Leu	Ser	Gln	Ala	Asn	Gly	Ile		
				240					245					250			
aag	gcc	cac	ctg	gag	tac	agg	agt	gcc	gag	atg	gag	aag	agc	aag	cag	1358	
Lys	Ala	His	Leu	Glu	Tyr	Arg	Ser	Ala	Glu	Met	Glu	Lys	Ser	Lys	Gln		
			255					260					265				
gag	ctg	gag	agg	atg	gcg	gcc	atc	agc	aac	act	gtc	cag	ttc	ttg	gag	1406	
Glu	Leu	Glu	Arg	Met	Ala	Ala	Ile	Ser	Asn	Thr	Val	Gln	Phe	Leu	Glu		
		270					275					280					
gag	tac	tgc	aag	ttt	aag	aac	act	gaa	gac	atc	acc	ttc	cct	agt	gtt	1454	
Glu	Tyr	Cys	Lys	Phe	Lys	Asn	Thr	Glu	Asp	Ile	Thr	Phe	Pro	Ser	Val		
	285					290					295						
tac	gta	ggg	ctg	aag	gat	aaa	ctc	tcg	ggc	atc	cgc	aaa	gtt	atc	acg	1502	
Tyr	Val	Gly	Leu	Lys	Asp	Lys	Leu	Ser	Gly	Ile	Arg	Lys	Val	Ile	Thr		
300					305				310					315			
gaa	tcc	act	gta	cac	tta	atc	cag	ttg	ctg	gag	aac	tat	aag	aaa	aag	1550	
Glu	Ser	Thr	Val	His	Leu	Ile	Gln	Leu	Leu	Glu	Asn	Tyr	Lys	Lys	Lys		
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ctc	cag	gag	ttt	tcc	aag	gaa	gag	gag	tat	gac	atc	aga	act	caa	gtg	1598	
Leu	Gln	Glu	Phe	Ser	Lys	Glu	Glu	Glu	Tyr	Asp	Ile	Arg	Thr	Gln	Val		
			335					340					345				
tct	gcc	gtt	gtt	cag	cgc	aaa	tat	tgg	act	tcc	aaa	cct	gag	ccc	agc	1646	
Ser	Ala	Val	Val	Gln	Arg	Lys	Tyr	Trp	Thr	Ser	Lys	Pro	Glu	Pro	Ser		
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acc	agg	gaa	cag	ttc	ctc	caa	tat	gcg	tat	gac	atc	acg	ttt	gac	ccg	1694	
Thr	Arg	Glu	Gln	Phe	Leu	Gln	Tyr	Ala	Tyr	Asp	Ile	Thr	Phe	Asp	Pro		
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gac	aca	gca	cac	aag	tat	ctc	cgg	ctg	cag	gag	gag	aac	cgc	aag	gtc	1742	
Asp	Thr	Ala	His	Lys	Tyr	Leu	Arg	Leu	Gln	Glu	Glu	Asn	Arg	Lys	Val		
380					385					390					395		

acc aac acc acg ccc tgg gag cat ccc tac ccg gac ctc ccc agc agg	1790
Thr Asn Thr Thr Pro Trp Glu His Pro Tyr Pro Asp Leu Pro Ser Arg	
400 405 410	
ttc ctg cac tgg cgg cag gtg ctg tcc cag cag agt ctg tac ctg cac	1838
Phe Leu His Trp Arg Gln Val Leu Ser Gln Gln Ser Leu Tyr Leu His	
415 420 425	
agg tac tat ttt gag gtg gag atc ttc ggg gca ggc acc tat gtt ggc	1886
Arg Tyr Tyr Phe Glu Val Glu Ile Phe Gly Ala Gly Thr Tyr Val Gly	
430 435 440	
ctg acc tgc aaa ggc atc gac cgg aaa ggg gag gag cgc aac agt tgc	1934
Leu Thr Cys Lys Gly Ile Asp Arg Lys Gly Glu Glu Arg Asn Ser Cys	
445 450 455	
att tcc gga aac aac ttc tcc tgg agc ctc caa tgg aac ggg aag gag	1982
Ile Ser Gly Asn Asn Phe Ser Trp Ser Leu Gln Trp Asn Gly Lys Glu	
460 465 470 475	
ttc acg gcc tgg tac agt gac atg gag acc cca ctc aaa gct ggc cct	2030
Phe Thr Ala Trp Tyr Ser Asp Met Glu Thr Pro Leu Lys Ala Gly Pro	
480 485 490	
ttc cgg agg ctc ggg gtc tat atc gac ttc ccg gga ggg atc ctt tcc	2078
Phe Arg Arg Leu Gly Val Tyr Ile Asp Phe Pro Gly Gly Ile Leu Ser	
495 500 505	
ttc tat ggc gta gag tat gat acc atg act ctg gtt cac aag ttt gcc	2126
Phe Tyr Gly Val Glu Tyr Asp Thr Met Thr Leu Val His Lys Phe Ala	
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Cys Lys Phe Ser Glu Pro Val Tyr Ala Ala Phe Trp Leu Ser Lys Lys	
525 530 535	
gaa aac gcc atc cgg att gta gat ctg gga gag gaa ccc gag aag cca	2222
Glu Asn Ala Ile Arg Ile Val Asp Leu Gly Glu Glu Pro Glu Lys Pro	
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Ala Pro Ser Leu Val Gly Thr Ala Pro	
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2920

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 <211> 564
 <212> PRT
 <213> Homo sapiens

<400> 118

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Asp Ser Gly Ser Ala Ser Pro Val Glu Glu Glu Asp Val Gly Ser Ser
 35 40 45

Glu Lys Leu Gly Arg Glu Thr Glu Glu Gln Asp Ser Asp Ser Ala Glu
 50 55 60

Gln Gly Asp Pro Ala Gly Glu Gly Lys Glu Val Leu Cys Asp Phe Cys
 65 70 75 80

Leu Asp Asp Thr Arg Arg Val Lys Ala Val Lys Ser Cys Leu Thr Cys
 85 90 95

Met Val Asn Tyr Cys Glu Glu His Leu Gln Pro His Gln Val Asn Ile
 100 105 110

Lys Leu Gln Ser His Leu Leu Thr Glu Pro Val Lys Asp His Asn Trp
 115 120 125

Arg Tyr Cys Pro Ala His His Ser Pro Leu Ser Ala Phe Cys Cys Pro
 130 135 140

Asp Gln Gln Cys Ile Cys Gln Asp Cys Cys Gln Glu His Ser Gly His
 145 150 155 160

Thr Ile Val Ser Leu Asp Ala Ala Arg Arg Asp Lys Glu Ala Glu Leu
 165 170 175

Gln Cys Thr Gln Leu Asp Leu Glu Arg Lys Leu Lys Leu Asn Glu Asn
 180 185 190

Ala Ile Ser Arg Leu Gln Ala Asn Gln Lys Ser Val Leu Val Ser Val
 195 200 205

Ser Glu Val Lys Ala Val Ala Glu Met Gln Phe Gly Glu Leu Leu Ala
 210 215 220

Ala Val Arg Lys Ala Gln Ala Asn Val Met Leu Phe Leu Glu Glu Lys
 225 230 235 240

Glu Gln Ala Ala Leu Ser Gln Ala Asn Gly Ile Lys Ala His Leu Glu
 245 250 255

Tyr Arg Ser Ala Glu Met Glu Lys Ser Lys Gln Glu Leu Glu Arg Met
 260 265 270

Ala Ala Ile Ser Asn Thr Val Gln Phe Leu Glu Glu Tyr Cys Lys Phe
 275 280 285

Lys Asn Thr Glu Asp Ile Thr Phe Pro Ser Val Tyr Val Gly Leu Lys
 290 295 300

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

Leu Ile Gln Leu Leu Glu Asn Tyr Lys Lys Lys Leu Gln Glu Phe Ser
 325 330 335

Lys Glu Glu Glu Tyr Asp Ile Arg Thr Gln Val Ser Ala Val Val Gln
 340 345 350

Arg Lys Tyr Trp Thr Ser Lys Pro Glu Pro Ser Thr Arg Glu Gln Phe
 355 360 365

Leu Gln Tyr Ala Tyr Asp Ile Thr Phe Asp Pro Asp Thr Ala His Lys
 370 375 380

Tyr Leu Arg Leu Gln Glu Glu Asn Arg Lys Val Thr Asn Thr Thr Pro
 385 390 395 400

Trp Glu His Pro Tyr Pro Asp Leu Pro Ser Arg Phe Leu His Trp Arg
 405 410 415

Gln Val Leu Ser Gln Gln Ser Leu Tyr Leu His Arg Tyr Tyr Phe Glu
 420 425 430

Val Glu Ile Phe Gly Ala Gly Thr Tyr Val Gly Leu Thr Cys Lys Gly
 435 440 445

Ile Asp Arg Lys Gly Glu Glu Arg Asn Ser Cys Ile Ser Gly Asn Asn
 450 455 460

Phe Ser Trp Ser Leu Gln Trp Asn Gly Lys Glu Phe Thr Ala Trp Tyr
 465 470 475 480

Ser Asp Met Glu Thr Pro Leu Lys Ala Gly Pro Phe Arg Arg Leu Gly
 485 490 495

Val Tyr Ile Asp Phe Pro Gly Gly Ile Leu Ser Phe Tyr Gly Val Glu
 500 505 510

Tyr Asp Thr Met Thr Leu Val His Lys Phe Ala Cys Lys Phe Ser Glu
 515 520 525

Pro Val Tyr Ala Ala Phe Trp Leu Ser Lys Lys Glu Asn Ala Ile Arg
 530 535 540

Ile Val Asp Leu Gly Glu Glu Pro Glu Lys Pro Ala Pro Ser Leu Val
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Gly Thr Ala Pro

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 <213> Homo sapiens

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 Met Glu Thr Asn Val Phe His Leu Met Leu
 1 5 10
 tgc gtc act tct gct cgg act cat aaa tcc acg tct ctt tgc ttt ggc 159
 Cys Val Thr Ser Ala Arg Thr His Lys Ser Thr Ser Leu Cys Phe Gly
 15 20 25
 cac ttc aac tca tat cca agc ctt cct tta att cat gat tta ttg ctg 207
 His Phe Asn Ser Tyr Pro Ser Leu Pro Leu Ile His Asp Leu Leu Leu
 30 35 40
 gaa ata tcc ttt caa ctc tca gca cct cat gaa gac gcg cgc tta act 255
 Glu Ile Ser Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr
 45 50 55
 ccg gag gag cta gaa aga gct tcc ctt cta cag ata ctg cca gag atg 303
 Pro Glu Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met
 60 65 70
 ctg ggt gca gaa aga ggg gat att ctc agg aaa gca gac tca agt acc 351


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Leu Gly Ala Glu Arg Gly Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr
75                      80                      85                      90

aac att ttt aac cca aga gga aat ttg aga aag ttt cag gat ttc tct      399
Asn Ile Phe Asn Pro Arg Gly Asn Leu Arg Lys Phe Gln Asp Phe Ser
                      95                      100                      105

gga caa gat cct aac att tta ctg agt cat ctt ttg gcc aga atc tgg      447
Gly Gln Asp Pro Asn Ile Leu Leu Ser His Leu Leu Ala Arg Ile Trp
                      110                      115                      120

aaa cca tac aag aaa cgt gag act cct gat tgc ttc tgg aaa tac tgt      495
Lys Pro Tyr Lys Lys Arg Glu Thr Pro Asp Cys Phe Trp Lys Tyr Cys
                      125                      130                      135

gtc tga agtgaaataa gcatctgtta gtcagctcag aaacacccat cttagaatat      551
Val

gaaaaataac acaatgcttg atttgaaaac agtgtggaga aaaactaggc aaactacacc      611

ctgttcattg ttacctggaa aataaatcct ctatgttttg c                        652

<210> 120
<211> 139
<212> PRT
<213> Homo sapiens

<400> 120

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

Ser Leu Pro Leu Ile His Asp Leu Leu Leu Glu Ile Ser Phe Gln Leu
35                      40                      45

Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu Glu Leu Glu Arg
50                      55                      60

Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu Gly Ala Glu Arg Gly
65                      70                      75                      80

Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr Asn Ile Phe Asn Pro Arg
85                      90                      95

Gly Asn Leu Arg Lys Phe Gln Asp Phe Ser Gly Gln Asp Pro Asn Ile
100                      105                      110

Leu Leu Ser His Leu Leu Ala Arg Ile Trp Lys Pro Tyr Lys Lys Arg
115                      120                      125

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Glu Thr Pro Asp Cys Phe Trp Lys Tyr Cys Val
 130 135

<210> 121
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 Met Glu Thr Asn Val Phe His Leu Met Leu
 1 5 10
 tgc gtc act tct gct cgg act cat aaa tcc acg tct ctt tgc ttt ggc 159
 Cys Val Thr Ser Ala Arg Thr His Lys Ser Thr Ser Leu Cys Phe Gly
 15 20 25
 cac ttc aac tca tat cca agc ctt cct tta att cat gat tta ttg ctg 207
 His Phe Asn Ser Tyr Pro Ser Leu Pro Leu Ile His Asp Leu Leu Leu
 30 35 40
 gaa ata tcc ttt caa ctc tca gca cct cat gaa gac gcg cgc tta act 255
 Glu Ile Ser Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr
 45 50 55
 ccg gag gag cta gaa aga gct tcc ctt cta cag ata ctg cca gag atg 303
 Pro Glu Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met
 60 65 70
 ctg ggt gca gaa aga ggg gat att ctc agg aaa gca gac tca agt acc 351
 Leu Gly Ala Glu Arg Gly Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr
 75 80 85 90
 aac att ttt aac cca aga gga aat ttg aga aag ttt cag gat ttc tct 399
 Asn Ile Phe Asn Pro Arg Gly Asn Leu Arg Lys Phe Gln Asp Phe Ser
 95 100 105
 gga caa gat cct aac att tta ctg agt cat ctt ttg gcc aga atc tgg 447
 Gly Gln Asp Pro Asn Ile Leu Leu Ser His Leu Leu Ala Arg Ile Trp
 110 115 120
 aaa cca tac aag aaa cgt gag act cct gat tgc ttc tgg aaa tac tgt 495
 Lys Pro Tyr Lys Lys Arg Glu Thr Pro Asp Cys Phe Trp Lys Tyr Cys
 125 130 135
 gtc tga agtgaaataa gcatctgtta gtcagctcag aaacacccat cttagaatat 551
 Val
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<210> 122
 <211> 139
 <212> PRT
 <213> Homo sapiens

<400> 122

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Thr His Lys Ser Thr Ser Leu Cys Phe Gly His Phe Asn Ser Tyr Pro
 20 25 30

Ser Leu Pro Leu Ile His Asp Leu Leu Leu Glu Ile Ser Phe Gln Leu
 35 40 45

Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu Glu Leu Glu Arg
 50 55 60

Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu Gly Ala Glu Arg Gly
 65 70 75 80

Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr Asn Ile Phe Asn Pro Arg
 85 90 95

Gly Asn Leu Arg Lys Phe Gln Asp Phe Ser Gly Gln Asp Pro Asn Ile
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Leu Leu Ser His Leu Leu Ala Arg Ile Trp Lys Pro Tyr Lys Lys Arg
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Glu Thr Pro Asp Cys Phe Trp Lys Tyr Cys Val
 130 135

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 <212> DNA
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<220>

<223> vector pTrcHis FANK1stop

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 ggtagtgttg ggtctcccca tgcgagagta gggaactgcc aggcacaaa taaaacgaaa 240
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 Leu Pro Arg Val Leu Glu Ile Gln Ala Gly Ile Tyr Leu Glu Gly Ser
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 Ile Tyr Glu Met Phe Gly Asn Glu Cys Cys Phe Ser Thr Gly Glu Val
 35 40 45
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 Ile Lys Ile Thr Gly Leu Lys Val Lys Lys Ile Ile Ala Glu Ile Cys
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 gag cag att gaa ggt tgt gag tct cta cag cca ttt gaa ctg cct atg 240
 Glu Gln Ile Glu Gly Cys Glu Ser Leu Gln Pro Phe Glu Leu Pro Met
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Asn Phe Pro Gly Leu Phe Lys Ile Val Ala Asp Lys Thr Pro Tyr Leu	
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Thr Met Glu Glu Ile Thr Arg Thr Ile His Ile Gly Pro Ser Arg Leu	
100 105 110	
ggg cat cct tgc ttc tat cat cag aag gat ata aaa cta gag aac ctc	384
Gly His Pro Cys Phe Tyr His Gln Lys Asp Ile Lys Leu Glu Asn Leu	
115 120 125	
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Ile Ile Lys Gln Gly Glu Gln Ile Met Leu Asn Ser Val Glu Glu Ile	
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Glu Asp Glu Arg Ile Tyr Thr Leu Lys Glu Ile Val Glu Trp Lys Ile	
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Pro Lys Asn Arg Thr Arg Thr Val Asn Leu Thr Asp Phe Ser Asn Lys	
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Lys Thr Ile Val Ile His Lys Lys Tyr Gln Ala Ser Arg Ile Leu Ala	
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ccc Pro	tca Ser	gta Val	gag Glu 565	gaa Glu	aca Thr	aag Lys	tta Leu	acc Thr 570	ctg Leu	cta Leu	acc Thr	tta Leu	gca Ala	gaa Glu 575	gaa Glu	1728		
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Lys																

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Tyr	Asp	Leu	Glu	Ile	Ala	Lys	Ser	Glu	Lys	Glu	Pro	Leu	His	Val	Val
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Pro Ser Val Glu Glu Thr Lys Leu Thr Leu Leu Thr Leu Ala Glu Glu
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Thr Lys Lys Leu His Pro Asn Gln Ala Gly Leu Asp Ser Lys Val Leu
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Ile Gly Ser Gln Asn Asp Leu Val Asp Glu Glu Lys Glu Arg Ser Asn
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Arg Gly Ala Thr Ala Ile Ala Glu Thr Phe Lys Asn Glu Lys His Gln
 625 630 635 640

Lys