

SEQUENCE LISTING

<110> Hardiman, Gerard T.
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Ho, Stephen W.K.
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<120> HUMAN DNAX TOLL-LIKE RECEPTOR 4 PROTEINS, RELATED REAGENTS AND METHODS

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ctc tta ccc atg tta cta gta ttg aaa atc agt agg aat gca ata act Leu Leu Pro Met Leu Val Leu Lys Ile Ser Arg Asn Ala Ile Thr 475	480	485	1536
acg ttt tct aag gag caa ctt gac tca ttt cac aca ctg aag act ttg Thr Phe Ser Lys Glu Gln Leu Asp Ser Phe His Thr Leu Lys Thr Leu 495	500	505	1584
gaa gct ggt ggc aat aac ttc att tgc tcc tgt gaa ttc ctc tcc ttc Glu Ala Gly Gly Asn Asn Phe Ile Cys Ser Cys Glu Phe Leu Ser Phe 510	515	520	1632
act cag gag cag caa gca ctg gcc aaa gtc ttg att gat tgg cca gca Thr Gln Glu Gln Ala Leu Ala Lys Val Leu Ile Asp Trp Pro Ala 525	530	535	1680
aat tac ctg tgt gac tct cca tcc cat gtg cgt ggc cag cag gtt cag Asn Tyr Leu Cys Asp Ser Pro Ser His Val Arg Gly Gln Gln Val Gln 540	545	550	1728
gat gtc cgc ctc tcg gtg tcg gaa tgt cac agg aca gca ctg gtg tct Asp Val Arg Leu Ser Val Ser Glu Cys His Arg Thr Ala Leu Val Ser 555	560	565	1776
ggc atg tgc tgt gct ctg ttc ctg ctg atc ctg ctc acg ggg gtc ctg Gly Met Cys Cys Ala Leu Phe Leu Leu Ile Leu Leu Thr Gly Val Leu 575	580	585	1824
tgc cac cgt ttc cat ggc ctg tgg tat atg aaa atg atg tgg gcc tgg Cys His Arg Phe His Gly Leu Trp Tyr Met Lys Met Met Trp Ala Trp 590	595	600	1872
ctc cag gcc aaa agg aag ccc agg aaa gct ccc agc agg aac atc tgc Leu Gln Ala Lys Arg Lys Pro Arg Lys Ala Pro Ser Arg Asn Ile Cys 605	610	615	1920
tat gat gca ttt gtt tct tac agt gag cggt gat gcc tac tgg gtg gag Tyr Asp Ala Phe Val Ser Tyr Ser Glu Arg Asp Ala Tyr Trp Val Glu 620	625	630	1968

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Asn Leu Met Val Gln Glu Leu Glu Asn Phe Asn Pro Pro Phe Lys Leu		
635 640 645 650		
tgt ctt cat aag cg ^g gac ttc att cct ggc aag tgg atc att gac aat		2064
Cys Leu His Lys Arg Asp Phe Ile Pro Gly Lys Trp Ile Ile Asp Asn		
655 660 665		
atc att gac tcc att gaa aag agc cac aaa act gtc ttt gtg ctt tct		2112
Ile Ile Asp Ser Ile Glu Lys Ser His Lys Thr Val Phe Val Leu Ser		
670 675 680		
gaa aac ttt gtg aag agt gag tgg tgc aag tat gaa ctg gac ttc tcc		2160
Glu Asn Phe Val Lys Ser Glu Trp Cys Lys Tyr Glu Leu Asp Phe Ser		
685 690 695		
cat ttc cgt ctt ttt gaa gag aac aat gat gct gcc att ctc att ctt		2208
His Phe Arg Leu Phe Glu Glu Asn Asn Asp Ala Ala Ile Leu Ile Leu		
700 705 710		
ctg gag ccc att gag aaa aaa gcc att ccc cag cgc ttc tgc aag ctg		2256
Leu Glu Pro Ile Glu Lys Lys Ala Ile Pro Gln Arg Phe Cys Lys Leu		
715 720 725 730		
cg ^g aag ata atg aac acc aag acc tac ctg gag tgg ccc atg gac gag		2304
Arg Lys Ile Met Asn Thr Lys Thr Tyr Leu Glu Trp Pro Met Asp Glu		
735 740 745		
gct cag cg ^g gaa gga ttt tgg gta aat ctg aga gct gcg ata aag tcc		2352
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750 755 760		
tag		2355

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Asn Gly Ile Cys Lys Gly Ser Ser Gly Ser Leu Asn Ser Ile Pro Ser		
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Gly Leu Thr Glu Ala Val Lys Ser Leu Asp Leu Ser Asn Asn Arg Ile
30 35 40

Thr Tyr Ile Ser Asn Ser Asp Leu Gln Arg Cys Val Asn Leu Gln Ala
45 50 55

Leu Val Leu Thr Ser Asn Gly Ile Asn Thr Ile Glu Glu Asp Ser Phe
60 65 70

Ser Ser Leu Gly Ser Leu Glu His Leu Asp Leu Ser Tyr Asn Tyr Leu
75 80 85 90

Ser Asn Leu Ser Ser Trp Phe Lys Pro Leu Ser Ser Leu Thr Phe
95 100 105

Leu Asn Leu Leu Gly Asn Pro Tyr Lys Thr Leu Gly Glu Thr Ser Leu
110 115 120

Phe Ser His Leu Thr Lys Leu Gln Ile Leu Arg Val Gly Asn Met Asp
125 130 135

Thr Phe Thr Lys Ile Gln Arg Lys Asp Phe Ala Gly Leu Thr Phe Leu
140 145 150

Glu Glu Leu Glu Ile Asp Ala Ser Asp Leu Gln Ser Tyr Glu Pro Lys
155 160 165 170

Ser Leu Lys Ser Ile Gln Asn Val Ser His Leu Ile Leu His Met Lys
175 180 185

Gln His Ile Leu Leu Glu Ile Phe Val Asp Val Thr Ser Ser Val
190 195 200

Glu Cys Leu Glu Leu Arg Asp Thr Asp Leu Asp Thr Phe His Phe Ser
205 210 215

Glu Leu Ser Thr Gly Glu Thr Asn Ser Leu Ile Lys Lys Phe Thr Phe
220 225 230

Arg Asn Val Lys Ile Thr Asp Glu Ser Leu Phe Gln Val Met Lys Leu

235 240 245 250

Leu Asn Gln Ile Ser Gly Leu Leu Glu Leu Glu Phe Asp Asp Cys Thr
255 260 265

Leu Asn Gly Val Gly Asn Phe Arg Ala Ser Asp Asn Asp Arg Val Ile
270 275 280

Asp Pro Gly Lys Val Glu Thr Leu Thr Ile Arg Arg Leu His Ile Pro
285 290 295

Arg Phe Tyr Leu Phe Tyr Asp Leu Ser Thr Leu Tyr Ser Leu Thr Glu
300 305 310

Arg Val Lys Arg Ile Thr Val Glu Asn Ser Lys Val Phe Leu Val Pro
315 320 325 330

Cys Leu Leu Ser Gln His Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser
335 340 345

Glu Asn Leu Met Val Glu Glu Tyr Leu Lys Asn Ser Ala Cys Glu Asp
350 355 360

Ala Trp Pro Ser Leu Gln Thr Leu Ile Leu Arg Gln Asn His Leu Ala
365 370 375

Ser Leu Glu Lys Thr Gly Glu Thr Leu Leu Thr Leu Lys Asn Leu Thr
380 385 390

Asn Ile Asp Ile Ser Lys Asn Ser Phe His Ser Met Pro Glu Thr Cys
395 400 405 410

Gln Trp Pro Glu Lys Met Lys Tyr Leu Asn Leu Ser Ser Thr Arg Ile
415 420 425

His Ser Val Thr Gly Cys Ile Pro Lys Thr Leu Glu Ile Leu Asp Val
430 435 440

Ser Asn Asn Asn Leu Asn Leu Phe Ser Leu Asn Leu Pro Gln Leu Lys
445 450 455

Glu Leu Tyr Ile Ser Arg Asn Lys Leu Met Thr Leu Pro Asp Ala Ser
460 465 470

Leu Leu Pro Met Leu Leu Val Leu Lys Ile Ser Arg Asn Ala Ile Thr
475 480 485 490

Thr Phe Ser Lys Glu Gln Leu Asp Ser Phe His Thr Leu Lys Thr Leu
495 500 505

Glu Ala Gly Gly Asn Asn Phe Ile Cys Ser Cys Glu Phe Leu Ser Phe
510 515 520

Thr Gln Glu Gln Gln Ala Leu Ala Lys Val Leu Ile Asp Trp Pro Ala
525 530 535

Asn Tyr Leu Cys Asp Ser Pro Ser His Val Arg Gly Gln Gln Val Gln
540 545 550

Asp Val Arg Leu Ser Val Ser Glu Cys His Arg Thr Ala Leu Val Ser
555 560 565 570

Gly Met Cys Cys Ala Leu Phe Leu Leu Ile Leu Leu Thr Gly Val Leu
575 580 585

Cys His Arg Phe His Gly Leu Trp Tyr Met Lys Met Met Trp Ala Trp
590 595 600

Leu Gln Ala Lys Arg Lys Pro Arg Lys Ala Pro Ser Arg Asn Ile Cys
605 610 615

Tyr Asp Ala Phe Val Ser Tyr Ser Glu Arg Asp Ala Tyr Trp Val Glu
620 625 630

Asn Leu Met Val Gln Glu Leu Glu Asn Phe Asn Pro Pro Phe Lys Leu
635 640 645 650

Cys Leu His Lys Arg Asp Phe Ile Pro Gly Lys Trp Ile Ile Asp Asn
655 660 665

Ile Ile Asp Ser Ile Glu Lys Ser His Lys Thr Val Phe Val Leu Ser

670

675

680

Glu Asn Phe Val Lys Ser Glu Trp Cys Lys Tyr Glu Leu Asp Phe Ser
685 690 695

His Phe Arg Leu Phe Glu Glu Asn Asn Asp Ala Ala Ile Leu Ile Leu
700 705 710

Leu Glu Pro Ile Glu Lys Lys Ala Ile Pro Gln Arg Phe Cys Lys Leu
715 720 725 730

Arg Lys Ile Met Asn Thr Lys Thr Tyr Leu Glu Trp Pro Met Asp Glu
735 740 745

Ala Gln Arg Glu Gly Phe Trp Val Asn Leu Arg Ala Ala Ile Lys Ser
750 755 760

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ttt ggg atg ctg tgt gca tcc tcc acc acc aag tgc act gtt agc cat 96
Phe Gly Met Leu Cys Ala Ser Ser Thr Thr Lys Cys Thr Val Ser His
-5 -1 1 5 10

gaa gtt gct gac tgc agc cac ctg aag ttg act cag gta ccc gat gat 144
Glu Val Ala Asp Cys Ser His Leu Lys Leu Thr Gln Val Pro Asp Asp
15 20 25

cta ccc aca aac ata aca gtg ttg aac ctt acc cat aat caa ctc aga 192
Leu Pro Thr Asn Ile Thr Val Leu Asn Leu Thr His Asn Gln Leu Arg
30 35 40

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

255	260	265	
gtt ggt aac gat tcc ttt gct tgg ctt cca caa cta gaa tat ttc ttc Val Gly Asn Asp Ser Phe Ala Trp Leu Pro Gln Leu Glu Tyr Phe Phe			912
270	275	280	
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285	290	295	
ctt ttc aat gtg agg tac ctg aat ttg aaa cgg tct ttt act aaa caa Leu Phe Asn Val Arg Tyr Leu Asn Leu Lys Arg Ser Phe Thr Lys Gln			1008
300	305	310	315
agt att tcc ctt gcc tca ctc ccc aag att gat gat ttt tct ttt cag Ser Ile Ser Leu Ala Ser Leu Pro Lys Ile Asp Asp Phe Ser Phe Gln			1056
320	325	330	
tgg cta aaa tgt ttg gag cac ctt aac atg gaa gat aat gat att cca Trp Leu Lys Cys Leu Glu His Leu Asn Met Glu Asp Asn Asp Ile Pro			1104
335	340	345	
ggc ata aaa agc aat atg ttc aca gga ttg ata aac ctg aaa tac tta Gly Ile Lys Ser Asn Met Phe Thr Gly Leu Ile Asn Leu Lys Tyr Leu			1152
350	355	360	
agt cta tcc aac tcc ttt aca agt ttg cga act ttg aca aat gaa aca Ser Leu Ser Asn Ser Phe Thr Ser Leu Arg Thr Leu Thr Asn Glu Thr			1200
365	370	375	
ttt gta tca ctt gct cat tct ccc tta cac ata ctc aac cta acc aag Phe Val Ser Leu Ala His Ser Pro Leu His Ile Leu Asn Leu Thr Lys			1248
380	385	390	395
aat aaa atc tca aaa ata gag agt gat gct ttc tct tgg ttg ggc cac Asn Lys Ile Ser Lys Ile Glu Ser Asp Ala Phe Ser Trp Leu Gly His			1296
400	405	410	
cta gaa gta ctt gac ctg ggc ctt aat gaa att ggg caa gaa ctc aca Leu Glu Val Leu Asp Leu Gly Leu Asn Glu Ile Gly Gln Glu Leu Thr			1344
415	420	425	
ggc cag gaa tgg aga ggt cta gaa aat att ttc gaa atc tat ctt tcc Gly Gln Glu Trp Arg Gly Leu Glu Asn Ile Phe Glu Ile Tyr Leu Ser			1392
430	435	440	
tac aac aag tac ctg cag ctg act agg aac tcc ttt gcc ttg gtc cca Tyr Asn Lys Tyr Leu Gln Leu Thr Arg Asn Ser Phe Ala Leu Val Pro			1440
445	450	455	
agc ctt caa cga ctg atg ctc cga agg gtg gcc ctt aaa aat gtg gat Ser Leu Gln Arg Leu Met Leu Arg Arg Val Ala Leu Lys Asn Val Asp			1488
460	465	470	475

agc tct cct tca cca ttc cag cct ctt cgt aac ttg acc att ctg gat Ser Ser Pro Ser Pro Phe Gln Pro Leu Arg Asn Leu Thr Ile Leu Asp 480 485 490	1536
cta agc aac aac ata gcc aac ata aat gat gac atg ttg gag ggt Leu Ser Asn Asn Ile Ala Asn Ile Asn Asp Asp Met Leu Glu Gly 495 500 505	1584
ctt gag aaa cta gaa att ctc gat ttg cag cat aac aac tta gca cgg Leu Glu Lys Leu Glu Ile Leu Asp Leu Gln His Asn Asn Leu Ala Arg 510 515 520	1632
ctc tgg aaa cac gca aac cct ggt ggt ccc att tat ttc cta aag ggt Leu Trp Lys His Ala Asn Pro Gly Gly Pro Ile Tyr Phe Leu Lys Gly 525 530 535	1680
ctg tct cac ctc cac atc ctt aac ttg gag tcc aac ggc ttt gac gag Leu Ser His Leu His Ile Leu Asn Leu Glu Ser Asn Gly Phe Asp Glu 540 545 550 555	1728
atc cca gtt gag gtc ttc aag gat tta ttt gaa cta aag atc atc gat Ile Pro Val Glu Val Phe Lys Asp Leu Phe Glu Leu Lys Ile Ile Asp 560 565 570	1776
tta gga ttg aat aat tta aac aca ctt cca gca tct gtc ttt aat aat Leu Gly Leu Asn Asn Leu Asn Thr Leu Pro Ala Ser Val Phe Asn Asn 575 580 585	1824
cag gtg tct cta aag tca ttg aac ctt cag aag aat ctc ata aca tcc Gln Val Ser Leu Lys Ser Leu Asn Leu Gln Lys Asn Leu Ile Thr Ser 590 595 600	1872
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aga ctt ttt gat aca tca tct tgc aaa gac agt gcc ccc ttt gaa ctc Arg Leu Phe Asp Thr Ser Ser Cys Lys Asp Ser Ala Pro Phe Glu Leu 670 675 680	2112
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685	690	695	
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tca gta cat cga gtt ctt ggt ttc aaa gaa ata gac aga cag aca gaa Ser Val His Arg Val Leu Gly Phe Lys Glu Ile Asp Arg Gln Thr Glu 720 725 730			2256
cag ttt gaa tat gca gca tat ata att cat gcc tat aaa gat aag gat Gln Phe Glu Tyr Ala Ala Tyr Ile Ile His Ala Tyr Lys Asp Lys Asp 735 740 745			2304
tgg gtc tgg gaa cat ttc tct tca atg gaa aag gaa gac caa tct ctc Trp Val Trp Glu His Phe Ser Ser Met Glu Lys Glu Asp Gln Ser Leu 750 755 760			2352
aaa ttt tgt ctg gaa gaa agg gac ttt gag gcg ggt gtt ttt gaa cta Lys Phe Cys Leu Glu Glu Arg Asp Phe Glu Ala Gly Val Phe Glu Leu 765 770 775			2400
gaa gca att gtt aac agc atc aaa aga agc aga aaa att att ttt gtt Glu Ala Ile Val Asn Ser Ile Lys Arg Ser Arg Lys Ile Ile Phe Val 780 785 790 795			2448
ata aca cac cat cta tta aaa gac cca tta tgc aaa aga ttc aag gta Ile Thr His His Leu Leu Lys Asp Pro Leu Cys Lys Arg Phe Lys Val 800 805 810			2496
cat cat gca gtt caa caa gct att gaa caa aat ctg gat tcc att ata His His Ala Val Gln Gln Ala Ile Glu Gln Asn Leu Asp Ser Ile Ile 815 820 825			2544
ttg gtt ttc ctt gag gag att cca gat tat aaa ctg aac cat gca ctc Leu Val Phe Leu Glu Glu Ile Pro Asp Tyr Lys Leu Asn His Ala Leu 830 835 840			2592
tgt ttg cga aga gga atg ttt aaa tct cac tgc atc ttg aac tgg cca Cys Leu Arg Arg Gly Met Phe Lys Ser His Cys Ile Leu Asn Trp Pro 845 850 855			2640
gtt cag aaa gaa cgg ata ggt gcc ttt cgt cat aaa ttg caa gta gca Val Gln Lys Glu Arg Ile Gly Ala Phe Arg His Lys Leu Gln Val Ala 860 865 870 875			2688
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-5 -1 1 5 10

Glu Val Ala Asp Cys Ser His Leu Lys Leu Thr Gln Val Pro Asp Asp
15 20 25

Leu Pro Thr Asn Ile Thr Val Leu Asn Leu Thr His Asn Gln Leu Arg
30 35 40

Arg Leu Pro Ala Ala Asn Phe Thr Arg Tyr Ser Gln Leu Thr Ser Leu
45 50 55

Asp Val Gly Phe Asn Thr Ile Ser Lys Leu Glu Pro Glu Leu Cys Gln
60 65 70 75

Lys Leu Pro Met Leu Lys Val Leu Asn Leu Gln His Asn Glu Leu Ser
80 85 90

Gln Leu Ser Asp Lys Thr Phe Ala Phe Cys Thr Asn Leu Thr Glu Leu
95 100 105

His Leu Met Ser Asn Ser Ile Gln Lys Ile Lys Asn Asn Pro Phe Val
110 115 120

Lys Gln Lys Asn Leu Ile Thr Leu Asp Leu Ser His Asn Gly Leu Ser
125 130 135

Ser Thr Lys Leu Gly Thr Gln Val Gln Leu Glu Asn Leu Gln Glu Leu
140 145 150 155

Leu Leu Ser Asn Asn Lys Ile Gln Ala Leu Lys Ser Glu Glu Leu Asp
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Ile Phe Ala Asn Ser Ser Leu Lys Lys Leu Glu Leu Ser Ser Asn Gln
175 180 185

Ile Lys Glu Phe Ser Pro Gly Cys Phe His Ala Ile Gly Arg Leu Phe
190 195 200

Gly Leu Phe Leu Asn Asn Val Gln Leu Gly Pro Ser Leu Thr Glu Lys
205 210 215

Leu Cys Leu Glu Leu Ala Asn Thr Ser Ile Arg Asn Leu Ser Leu Ser
220 225 230 235

Asn Ser Gln Leu Ser Thr Thr Ser Asn Thr Thr Phe Leu Gly Leu Lys
240 245 250

Trp Thr Asn Leu Thr Met Leu Asp Leu Ser Tyr Asn Asn Leu Asn Val
255 260 265

Val Gly Asn Asp Ser Phe Ala Trp Leu Pro Gln Leu Glu Tyr Phe Phe
270 275 280

Leu Glu Tyr Asn Asn Ile Gln His Leu Phe Ser His Ser Leu His Gly
285 290 295

Leu Phe Asn Val Arg Tyr Leu Asn Leu Lys Arg Ser Phe Thr Lys Gln
300 305 310 315

Ser Ile Ser Leu Ala Ser Leu Pro Lys Ile Asp Asp Phe Ser Phe Gln
320 325 330

Trp Leu Lys Cys Leu Glu His Leu Asn Met Glu Asp Asn Asp Ile Pro
335 340 345

Gly Ile Lys Ser Asn Met Phe Thr Gly Leu Ile Asn Leu Lys Tyr Leu
350 355 360

Ser Leu Ser Asn Ser Phe Thr Ser Leu Arg Thr Leu Thr Asn Glu Thr
365 370 375

Phe Val Ser Leu Ala His Ser Pro Leu His Ile Leu Asn Leu Thr Lys
380 385 390 395

Asn Lys Ile Ser Lys Ile Glu Ser Asp Ala Phe Ser Trp Leu Gly His
400 405 410

Leu Glu Val Leu Asp Leu Gly Leu Asn Glu Ile Gly Gln Glu Leu Thr
415 420 425

Gly Gln Glu Trp Arg Gly Leu Glu Asn Ile Phe Glu Ile Tyr Leu Ser
430 435 440

Tyr Asn Lys Tyr Leu Gln Leu Thr Arg Asn Ser Phe Ala Leu Val Pro
445 450 455

Ser Leu Gln Arg Leu Met Leu Arg Arg Val Ala Leu Lys Asn Val Asp
460 465 470 475

Ser Ser Pro Ser Pro Phe Gln Pro Leu Arg Asn Leu Thr Ile Leu Asp
480 485 490

Leu Ser Asn Asn Ile Ala Asn Ile Asn Asp Asp Met Leu Glu Gly
495 500 505

Leu Glu Lys Leu Glu Ile Leu Asp Leu Gln His Asn Asn Leu Ala Arg
510 515 520

Leu Trp Lys His Ala Asn Pro Gly Gly Pro Ile Tyr Phe Leu Lys Gly
525 530 535

Leu Ser His Leu His Ile Leu Asn Leu Glu Ser Asn Gly Phe Asp Glu
540 545 550 555

Ile Pro Val Glu Val Phe Lys Asp Leu Phe Glu Leu Lys Ile Ile Asp
560 565 570

Leu Gly Leu Asn Asn Leu Asn Thr Leu Pro Ala Ser Val Phe Asn Asn
575 580 585

Gln Val Ser Leu Lys Ser Leu Asn Leu Gln Lys Asn Leu Ile Thr Ser
590 595 600

Val Glu Lys Lys Val Phe Gly Pro Ala Phe Arg Asn Leu Thr Glu Leu
605 610 615

Asp Met Arg Phe Asn Pro Phe Asp Cys Thr Cys Glu Ser Ile Ala Trp
620 625 630 635

Phe Val Asn Trp Ile Asn Glu Thr His Thr Asn Ile Pro Glu Leu Ser
640 645 650

Ser His Tyr Leu Cys Asn Thr Pro Pro His Tyr His Gly Phe Pro Val
655 660 665

Arg Leu Phe Asp Thr Ser Ser Cys Lys Asp Ser Ala Pro Phe Glu Leu
670 675 680

Phe Phe Met Ile Asn Thr Ser Ile Leu Leu Ile Phe Ile Phe Ile Val
685 690 695

Leu Leu Ile His Phe Glu Gly Trp Arg Ile Ser Phe Tyr Trp Asn Val
700 705 710 715

Ser Val His Arg Val Leu Gly Phe Lys Glu Ile Asp Arg Gln Thr Glu
720 725 730

Gln Phe Glu Tyr Ala Ala Tyr Ile Ile His Ala Tyr Lys Asp Lys Asp
735 740 745

Trp Val Trp Glu His Phe Ser Ser Met Glu Lys Glu Asp Gln Ser Leu
750 755 760

Lys Phe Cys Leu Glu Glu Arg Asp Phe Glu Ala Gly Val Phe Glu Leu
765 770 775

Glu Ala Ile Val Asn Ser Ile Lys Arg Ser Arg Lys Ile Ile Phe Val
780 785 790 795

Ile Thr His His Leu Leu Lys Asp Pro Leu Cys Lys Arg Phe Lys Val
800 805 810

His His Ala Val Gln Gln Ala Ile Glu Gln Asn Leu Asp Ser Ile Ile
815 820 825

Leu Val Phe Leu Glu Glu Ile Pro Asp Tyr Lys Leu Asn His Ala Leu
830 835 840

Cys Leu Arg Arg Gly Met Phe Lys Ser His Cys Ile Leu Asn Trp Pro
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aag aac ctg gac ctg agc ttt aat ccc ctg agg cat tta ggc agc tat 96
Lys Asn Leu Asp Leu Ser Phe Asn Pro Leu Arg His Leu Gly Ser Tyr
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agc ttc ttc agt ttc cca gaa ctg cag gtg ctg gat tta tcc agg tgt 144
Ser Phe Phe Ser Phe Pro Glu Leu Gln Val Leu Asp Leu Ser Arg Cys
35 40 45

gaa atc cag aca att gaa gat ggg gca tat cag agc cta agc cac ctc 192
Glu Ile Gln Thr Ile Glu Asp Gly Ala Tyr Gln Ser Leu Ser His Leu
50 55 60

tct acc tta ata ttg aca gga aac ccc atc cag agt tta gcc ctg gga 240
Ser Thr Leu Ile Leu Thr Gly Asn Pro Ile Gln Ser Leu Ala Leu Gly
65 70 75 80

gcc ttt tct gga cta tca agt tta cag aag ctg gtg gct gtg gag aca 288
Ala Phe Ser Gly Leu Ser Ser Leu Gln Lys Leu Val Ala Val Glu Thr
85 90 95

aat cta gca tct cta gag aac ttc ccc att gga cat ctc aaa act ttg 336
Asn Leu Ala Ser Leu Glu Asn Phe Pro Ile Gly His Leu Lys Thr Leu
100 105 110

aaa gaa ctt aat gtg gct cac aat ctt atc caa tct ttc aaa tta cct			384
Lys Glu Leu Asn Val Ala His Asn Leu Ile Gln Ser Phe Lys Leu Pro			
115	120	125	
gag tat ttt tct aat ctg acc aat cta gag cac ttg gac ctt tcc agc			432
Glu Tyr Phe Ser Asn Leu Thr Asn Leu Glu His Leu Asp Leu Ser Ser			
130	135	140	
aac aag att caa agt att tat tgc aca gac ttg cggtt cta cat caa			480
Asn Lys Ile Gln Ser Ile Tyr Cys Thr Asp Leu Arg Val Leu His Gln			
145	150	155	160
atg ccc cta ctc aat ctc tct tta gac ctg tcc ctg aac cct atg aac			528
Met Pro Leu Leu Asn Leu Ser Leu Asp Leu Ser Leu Asn Pro Met Asn			
165	170	175	
ttt atc caa cca ggt gca ttt aaa gaa att agg ctt cat aag ctg act			576
Phe Ile Gln Pro Gly Ala Phe Lys Glu Ile Arg Leu His Lys Leu Thr			
180	185	190	
tta aga aat aat ttt gat agt tta aat gta atg aaa act tgt att caa			624
Leu Arg Asn Asn Phe Asp Ser Leu Asn Val Met Lys Thr Cys Ile Gln			
195	200	205	
ggg ctg gct ggt tta gaa gtc cat cgt ttg gtt ctg gga gaa ttt aga			672
Gly Leu Ala Gly Leu Glu Val His Arg Leu Val Leu Gly Glu Phe Arg			
210	215	220	
aat gaa gga aac ttg gaa aag ttt gac aaa tct gct cta gag ggc ctg			720
Asn Glu Gly Asn Leu Glu Lys Phe Asp Lys Ser Ala Leu Glu Gly Leu			
225	230	235	240
tgc aat ttg acc att gaa gaa ttc cga tta gca tac tta gac tac tac			768
Cys Asn Leu Thr Ile Glu Glu Phe Arg Leu Ala Tyr Leu Asp Tyr Tyr			
245	250	255	
ctc gat gat att att gac tta ttt aat tgt ttg aca aat gtt tct tca			816
Leu Asp Asp Ile Ile Asp Leu Phe Asn Cys Leu Thr Asn Val Ser Ser			
260	265	270	
ttt tcc ctg gtg agt gtg act att gaa agg gta aaa gac ttt tct tat			864
Phe Ser Leu Val Ser Val Thr Ile Glu Arg Val Lys Asp Phe Ser Tyr			
275	280	285	
aat ttc gga tgg caa cat tta gaa tta gtt aac tgt aaa ttt gga cag			912
Asn Phe Gly Trp Gln His Leu Glu Leu Val Asn Cys Lys Phe Gly Gln			
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Phe Pro Thr Leu Lys Leu Lys Ser Leu Lys Arg Leu Thr Phe Thr Ser			
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aac aaa ggt ggg aat gct ttt tca gaa gtt gat cta cca agc ctt gag		1008	
Asn Lys Gly Gly Asn Ala Phe Ser Glu Val Asp Leu Pro Ser Leu Glu			
325	330	335	
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340	345	350	
caa agt gat ttt ggg aca acc agc cta aag tat tta gat ctg agc ttc		1104	
Gln Ser Asp Phe Gly Thr Thr Ser Leu Lys Tyr Leu Asp Leu Ser Phe			
355	360	365	
aat ggt gtt att acc atg agt tca aac ttc ttg ggc tta gaa caa cta		1152	
Asn Gly Val Ile Thr Met Ser Ser Asn Phe Leu Gly Leu Glu Gln Leu			
370	375	380	
gaa cat ctg gat ttc cag cat tcc aat ttg aaa caa atg agt gag ttt		1200	
Glu His Leu Asp Phe Gln His Ser Asn Leu Lys Gln Met Ser Glu Phe			
385	390	395	400
tca gta ttc cta tca ctc aga aac ctc att tac ctt gac att tct cat		1248	
Ser Val Phe Leu Ser Leu Arg Asn Leu Ile Tyr Leu Asp Ile Ser His			
405	410	415	
act cac acc aga gtt gct ttc aat ggc atc ttc aat ggc ttg tcc agt		1296	
Thr His Thr Arg Val Ala Phe Asn Gly Ile Phe Asn Gly Leu Ser Ser			
420	425	430	
ctc gaa gtc ttg aaa atg gct ggc aat tct ttc cag gaa aac ttc ctt		1344	
Leu Glu Val Leu Lys Met Ala Gly Asn Ser Phe Gln Glu Asn Phe Leu			
435	440	445	
cca gat atc ttc aca gag ctg aga aac ttg acc ttc ctg gac ctc tct		1392	
Pro Asp Ile Phe Thr Glu Leu Arg Asn Leu Thr Phe Leu Asp Leu Ser			
450	455	460	
cag tgt caa ctg gag cag ttg tct cca aca gca ttt aac tca ctc tcc		1440	
Gln Cys Gln Leu Glu Gln Leu Ser Pro Thr Ala Phe Asn Ser Leu Ser			
465	470	475	480
agt ctt cag gta cta aat atg agc cac aac aac ttc ttt tca ttg gat		1488	
Ser Leu Gln Val Leu Asn Met Ser His Asn Asn Phe Phe Ser Leu Asp			
485	490	495	
acg ttt cct tat aag tgt ctg aac tcc ctc cag gtt ctt gat tac agt		1536	
Thr Phe Pro Tyr Lys Cys Leu Asn Ser Leu Gln Val Leu Asp Tyr Ser			
500	505	510	
ctc aat cac ata atg act tcc aaa aaa cag gaa cta cag cat ttt cca		1584	
Leu Asn His Ile Met Thr Ser Lys Lys Gln Glu Leu Gln His Phe Pro			
515	520	525	
agt agt cta gct ttc tta aat ctt act cag aat gac ttt gct tgt act		1632	

Ser	Ser	Leu	Ala	Phe	Leu	Asn	Leu	Thr	Gln	Asn	Asp	Phe	Ala	Cys	Thr		
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tgt	gaa	cac	cag	agt	ttc	ctg	caa	tgg	atc	aag	gac	cag	agg	cag	cag	ctc	1680
Cys	Glu	His	Gln	Ser	Phe	Leu	Gln	Trp	Ile	Lys	Asp	Gln	Arg	Gln	Leu		
545					550				555					560			
ttg	gtg	gaa	gtt	gaa	cga	atg	gaa	tgt	gca	aca	cct	tca	gat	aag	cag		1728
Leu	Val	Glu	Val	Glu	Arg	Met	Glu	Cys	Ala	Thr	Pro	Ser	Asp	Lys	Gln		
					565				570					575			
ggc	atg	cct	gtg	ctg	agt	ttg	aat	atc	acc	tgt	cag	atg	aat	aag	acc		1776
Gly	Met	Pro	Val	Leu	Ser	Leu	Asn	Ile	Thr	Cys	Gln	Met	Asn	Lys	Thr		
				580				585				590					
atc	att	ggt	gtg	tcg	gtc	ctc	agt	gtg	ctt	gta	gta	tct	gtt	gta	gca		1824
Ile	Ile	Gly	Val	Ser	Val	Leu	Ser	Val	Leu	Val	Val	Ser	Val	Val	Ala		
				595				600				605					
gtt	ctg	gtc	tat	aag	ttc	tat	ttt	cac	ctg	atg	ctt	ctt	gct	ggc	tgc		1872
Val	Leu	Val	Tyr	Lys	Phe	Tyr	Phe	His	Leu	Met	Leu	Leu	Ala	Gly	Cys		
				610				615				620					
ata	aag	tat	ggt	aga	ggt	gaa	aac	atc	tat	gat	gcc	ttt	gtt	atc	tac		1920
Ile	Lys	Tyr	Gly	Arg	Gly	Glu	Asn	Ile	Tyr	Asp	Ala	Phe	Val	Ile	Tyr		
				625				630			635			640			
tca	agc	cag	gat	gag	gac	tgg	gta	agg	aat	gag	cta	gta	aag	aat	tta		1968
Ser	Ser	Gln	Asp	Glu	Asp	Trp	Val	Arg	Asn	Glu	Leu	Val	Lys	Asn	Leu		
				645				650				655					
gaa	gaa	ggg	gtg	cct	cca	ttt	cag	ctc	tgc	ctt	cac	tac	aga	gac	ttt		2016
Glu	Glu	Gly	Val	Pro	Pro	Phe	Gln	Leu	Cys	Leu	His	Tyr	Arg	Asp	Phe		
				660				665				670					
att	ccc	ggt	gtg	gcc	att	gct	gcc	aac	atc	atc	cat	gaa	ggt	ttc	cat		2064
Ile	Pro	Gly	Val	Ala	Ile	Ala	Ala	Asn	Ile	Ile	His	Glu	Gly	Phe	His		
				675				680			685						
aaa	agc	cga	aag	gtg	att	gtt	gtg	gtg	tcc	cag	cac	ttc	atc	cag	agc		2112
Lys	Ser	Arg	Lys	Val	Ile	Val	Val	Val	Ser	Gln	His	Phe	Ile	Gln	Ser		
				690				695			700						
cgc	tgg	tgt	atc	ttt	gaa	tat	gag	att	gct	cag	acc	tgg	cag	ttt	ctg		2160
Arg	Trp	Cys	Ile	Phe	Glu	Tyr	Glu	Ile	Ala	Gln	Thr	Trp	Gln	Phe	Leu		
				705				710			715			720			
agc	agt	cgt	ggt	atc	atc	ttc	att	gtc	ctg	cag	aag	gtg	gag	aag			2208
Ser	Ser	Arg	Ala	Gly	Ile	Ile	Phe	Ile	Val	Leu	Gln	Lys	Val	Glu	Lys		
				725				730				735					
acc	ctg	ctc	agg	cag	cag	gtg	gag	ctg	tac	cgc	ctt	ctc	agc	agg	aac		2256
Thr	Leu	Leu	Arg	Gln	Gln	Val	Glu	Leu	Tyr	Arg	Leu	Leu	Ser	Arg	Asn		

740	745	750	
act tac ctg gag tgg gag gac agt gtc ctg ggg cg ^g cac atc ttc tgg Thr Tyr Leu Glu Trp Glu Asp Ser Val Leu Gly Arg His Ile Phe Trp			2304
755	760	765	
aga cga ctc aga aaa gcc ctg ctg gat ggt aaa tca tgg aat cca gaa Arg Arg Leu Arg Lys Ala Leu Leu Asp Gly Lys Ser Trp Asn Pro Glu			2352
770	775	780	
gga aca gtg ggt aca gga tgc aat tgg cag gaa gca aca tct atc tga Gly Thr Val Gly Thr Gly Cys Asn Trp Gln Glu Ala Thr Ser Ile			2400
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Ser Phe Phe Ser Phe Pro Glu Leu Gln Val Leu Asp Leu Ser Arg Cys			
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Glu Ile Gln Thr Ile Glu Asp Gly Ala Tyr Gln Ser Leu Ser His Leu			
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Ser Thr Leu Ile Leu Thr Gly Asn Pro Ile Gln Ser Leu Ala Leu Gly			
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Ala Phe Ser Gly Leu Ser Ser Leu Gln Lys Leu Val Ala Val Glu Thr			
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Glu Tyr Phe Ser Asn Leu Thr Asn Leu Glu His Leu Asp Leu Ser Ser
130 135 140

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

Met Pro Leu Leu Asn Leu Ser Leu Asp Leu Ser Leu Asn Pro Met Asn
165 170 175

Phe Ile Gln Pro Gly Ala Phe Lys Glu Ile Arg Leu His Lys Leu Thr
180 185 190

Leu Arg Asn Asn Phe Asp Ser Leu Asn Val Met Lys Thr Cys Ile Gln
195 200 205

Gly Leu Ala Gly Leu Glu Val His Arg Leu Val Leu Gly Glu Phe Arg
210 215 220

Asn Glu Gly Asn Leu Glu Lys Phe Asp Lys Ser Ala Leu Glu Gly Leu
225 230 235 240

Cys Asn Leu Thr Ile Glu Glu Phe Arg Leu Ala Tyr Leu Asp Tyr Tyr
245 250 255

Leu Asp Asp Ile Ile Asp Leu Phe Asn Cys Leu Thr Asn Val Ser Ser
260 265 270

Phe Ser Leu Val Ser Val Thr Ile Glu Arg Val Lys Asp Phe Ser Tyr
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Phe Pro Thr Leu Lys Leu Lys Ser Leu Lys Arg Leu Thr Phe Thr Ser
305 310 315 320

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325 330 335

Phe Leu Asp Leu Ser Arg Asn Gly Leu Ser Phe Lys Gly Cys Cys Ser
340 345 350

Gln Ser Asp Phe Gly Thr Thr Ser Leu Lys Tyr Leu Asp Leu Ser Phe
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370 375 380

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

Ser Val Phe Leu Ser Leu Arg Asn Leu Ile Tyr Leu Asp Ile Ser His
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Thr His Thr Arg Val Ala Phe Asn Gly Ile Phe Asn Gly Leu Ser Ser
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Leu Glu Val Leu Lys Met Ala Gly Asn Ser Phe Gln Glu Asn Phe Leu
435 440 445

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

Thr Phe Pro Tyr Lys Cys Leu Asn Ser Leu Gln Val Leu Asp Tyr Ser
500 505 510

Leu Asn His Ile Met Thr Ser Lys Lys Gln Glu Leu Gln His Phe Pro
515 520 525

Ser Ser Leu Ala Phe Leu Asn Leu Thr Gln Asn Asp Phe Ala Cys Thr
530 535 540

Cys Glu His Gln Ser Phe Leu Gln Trp Ile Lys Asp Gln Arg Gln Leu
545 550 555 560

Leu Val Glu Val Glu Arg Met Glu Cys Ala Thr Pro Ser Asp Lys Gln
565 570 575

Gly Met Pro Val Leu Ser Leu Asn Ile Thr Cys Gln Met Asn Lys Thr
580 585 590

Ile Ile Gly Val Ser Val Leu Ser Val Leu Val Val Ser Val Val Ala
595 600 605

Val Leu Val Tyr Lys Phe Tyr Phe His Leu Met Leu Leu Ala Gly Cys
610 615 620

Ile Lys Tyr Gly Arg Gly Glu Asn Ile Tyr Asp Ala Phe Val Ile Tyr
625 630 635 640

Ser Ser Gln Asp Glu Asp Trp Val Arg Asn Glu Leu Val Lys Asn Leu
645 650 655

Glu Glu Gly Val Pro Pro Phe Gln Leu Cys Leu His Tyr Arg Asp Phe
660 665 670

Ile Pro Gly Val Ala Ile Ala Ala Asn Ile Ile His Glu Gly Phe His
675 680 685

Lys Ser Arg Lys Val Ile Val Val Val Ser Gln His Phe Ile Gln Ser
690 695 700

Arg Trp Cys Ile Phe Glu Tyr Glu Ile Ala Gln Thr Trp Gln Phe Leu
705 710 715 720

Ser Ser Arg Ala Gly Ile Ile Phe Ile Val Leu Gln Lys Val Glu Lys
725 730 735

Thr Leu Leu Arg Gln Gln Val Glu Leu Tyr Arg Leu Leu Ser Arg Asn
740 745 750

Thr Tyr Leu Glu Trp Glu Asp Ser Val Leu Gly Arg His Ile Phe Trp
755 760 765

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Asn His Asn Tyr Leu Asn Ser Leu Pro Pro Gly Val Phe Ser His Leu
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Thr Ala Leu Arg Gly Leu Ser Leu Asn Ser Asn Arg Leu Thr Val Leu
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tct cac aat gat tta cct gct aat tta gag atc ctg gac ata tcc agg 192
Ser His Asn Asp Leu Pro Ala Asn Leu Glu Ile Leu Asp Ile Ser Arg
50 55 60

aac cag ctc cta gct cct aat cct gat gta ttt gta tca ctt agt gtc 240
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65 70 75 80

ttg gat ata act cat aac aag ttc att tgt gaa tgt gaa ctt agc act 288
Leu Asp Ile Thr His Asn Lys Phe Ile Cys Glu Cys Glu Leu Ser Thr
85 90 95

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Phe Ile Asn Trp Leu Asn His Thr Asn Val Thr Ile Ala Gly Pro Pro
100 105 110

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Ala Asp Ile Tyr Cys Val Tyr Pro Asp Ser Phe Ser Gly Val Ser Leu
115 120 125

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Phe Ser Leu Ser Thr Glu Gly Cys Asp Glu Glu Val Leu Lys Ser
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Leu Met Thr Ile Leu Thr Val Thr Lys Phe Arg Gly Phe Cys Phe Ile		
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Cys Tyr Lys Thr Ala Gln Arg Leu Val Phe Lys Asp His Pro Gln Gly		
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aca gaa cct gat atg tac aaa tat gat gcc tat ttg tgc ttc agc agc		624
Thr Glu Pro Asp Met Tyr Lys Tyr Asp Ala Tyr Leu Cys Phe Ser Ser		
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Lys Asp Phe Thr Trp Val Gln Asn Ala Leu Leu Lys His Leu Asp Thr		
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Gln Tyr Ser Asp Gln Asn Arg Phe Asn Leu Cys Phe Glu Glu Arg Asp		
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Phe Val Pro Gly Glu Asn Arg Ile Ala Asn Ile Gln Asp Ala Ile Trp		
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aac agt aga aag atc gtt tgt ctt gtg agc aga cac ttc ctt aga gat		816
Asn Ser Arg Lys Ile Val Cys Leu Val Ser Arg His Phe Leu Arg Asp		
260 265 270		
ggc tgg tgc ctt gaa gcc ttc agt tat gcc cag ggc agg tgc tta tct		864
Gly Trp Cys Leu Glu Ala Phe Ser Tyr Ala Gln Gly Arg Cys Leu Ser		
275 280 285		
gac ctt aac agt gct ctc atc atg gtg gtg gtt ggg tcc ttg tcc cag		912
Asp Leu Asn Ser Ala Leu Ile Met Val Val Val Gly Ser Leu Ser Gln		
290 295 300		
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Tyr Gln Leu Met Lys His Gln Ser Ile Arg Gly Phe Val Gln Lys Gln		
305 310 315 320		
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Gln Tyr Leu Arg Trp Pro Glu Asp Leu Gln Asp Val Gly Trp Phe Leu		
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Asp Asn Asn Ile Pro Leu Gln Thr Val Ala Thr Ile Ser
355 360 365

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Thr Ala Leu Arg Gly Leu Ser Leu Asn Ser Asn Arg Leu Thr Val Leu
35 40 45

Ser His Asn Asp Leu Pro Ala Asn Leu Glu Ile Leu Asp Ile Ser Arg
50 55 60

Asn Gln Leu Leu Ala Pro Asn Pro Asp Val Phe Val Ser Leu Ser Val
65 70 75 80

Leu Asp Ile Thr His Asn Lys Phe Ile Cys Glu Cys Glu Leu Ser Thr
85 90 95

Phe Ile Asn Trp Leu Asn His Thr Asn Val Thr Ile Ala Gly Pro Pro
100 105 110

Ala Asp Ile Tyr Cys Val Tyr Pro Asp Ser Phe Ser Gly Val Ser Leu
115 120 125

Phe Ser Leu Ser Thr Glu Gly Cys Asp Glu Glu Val Leu Lys Ser
130 135 140

Leu Lys Phe Ser Leu Phe Ile Val Cys Thr Val Thr Leu Thr Leu Phe

145 150 155 160
Leu Met Thr Ile Leu Thr Val Thr Lys Phe Arg Gly Phe Cys Phe Ile
165 170 175

Cys Tyr Lys Thr Ala Gln Arg Leu Val Phe Lys Asp His Pro Gln Gly
180 185 190

Thr Glu Pro Asp Met Tyr Lys Tyr Asp Ala Tyr Leu Cys Phe Ser Ser
195 200 205

Lys Asp Phe Thr Trp Val Gln Asn Ala Leu Leu Lys His Leu Asp Thr
210 215 220

Gln Tyr Ser Asp Gln Asn Arg Phe Asn Leu Cys Phe Glu Glu Arg Asp
225 230 235 240

Phe Val Pro Gly Glu Asn Arg Ile Ala Asn Ile Gln Asp Ala Ile Trp
245 250 255

Asn Ser Arg Lys Ile Val Cys Leu Val Ser Arg His Phe Leu Arg Asp
260 265 270

Gly Trp Cys Leu Glu Ala Phe Ser Tyr Ala Gln Gly Arg Cys Leu Ser
275 280 285

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

Tyr Gln Leu Met Lys His Gln Ser Ile Arg Gly Phe Val Gln Lys Gln
305 310 315 320

Gln Tyr Leu Arg Trp Pro Glu Asp Leu Gln Asp Val Gly Trp Phe Leu
325 330 335

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340 345 350

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

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

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

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

aag ggc caa agt gtg atc tcc ctg gat ctg tac acc tgt gag tta gat Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr Thr Cys Glu Leu Asp 820 825 830	2496
ctg act aac ctg att ctg ttc tca ctt tcc ata tct gta tct ctc ttt Leu Thr Asn Leu Ile Leu Phe Ser Leu Ser Ile Ser Val Ser Leu Phe 835 840 845	2544
ctc atg gtg atg atg aca gca agt cac ctc tat ttc tgg gat gtg tgg Leu Met Val Met Met Thr Ala Ser His Leu Tyr Phe Trp Asp Val Trp 850 855 860	2592
tat att tac cat ttc tgt aag gcc aag ata aag ggg tat cag cgt cta Tyr Ile Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu 865 870 875 880	2640
ata tca cca gac tgt tgc tat gat gct ttt att gtg tat gac act aaa Ile Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys 885 890 895	2688
gac cca gct gtg acc gag tgg gtt ttg gct gag ctg gtg gcc aaa ctg Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys Leu 900 905 910	2736
gaa gac cca aga gag aaa cat ttt aat tta tgt ctc gag gaa agg gac Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu Arg Asp 915 920 925	2784
tgg tta cca ggg cag cca gtt ctg gaa aac ctt tcc cag agc ata cag Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln Ser Ile Gln 930 935 940	2832
ctt agc aaa aag aca gtg ttt gtg atg aca gac aag tat gca aag act Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys Tyr Ala Lys Thr 945 950 955 960	2880
gaa aat ttt aag ata gca ttt tac ttg tcc cat cag agg ctc atg gat Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His Gln Arg Leu Met Asp 965 970 975	2928
gaa aaa gtt gat gtg att atc ttg ata ttt ctt gag aag ccc ttt cag Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu Glu Lys Pro Phe Gln 980 985 990	2976
aag tcc aag ttc ctc cag ctc cgg aaa agg ctc tgt ggg agt tct gtc Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu Cys Gly Ser Ser Val 995 1000 1005	3024
ctt gag tgg cca aca aac ccg caa gct cac cca tac ttc tgg cag Leu Glu Trp Pro Thr Asn Pro Gln Ala His Pro Tyr Phe Trp Gln 1010 1015 1020	3069
tgt cta aag aac gcc ctg gcc aca gac aat cat gtg gcc tat agt Cys Leu Lys Asn Ala Leu Ala Thr Asp Asn His Val Ala Tyr Ser	3114

1025

1030

1035

cag gtg ttc aag gaa acg gtc tag
Gln Val Phe Lys Glu Thr Val
1040 1045

3138

<210> 12
<211> 1045
<212> PRT
<213> Homo sapiens

<400> 12

Met Trp Thr Leu Lys Arg Leu Ile Leu Ile Leu Phe Asn Ile Ile Leu
1 5 10 15

Ile Ser Lys Leu Leu Gly Ala Arg Trp Phe Pro Lys Thr Leu Pro Cys
20 25 30

Asp Val Thr Leu Asp Val Pro Lys Asn His Val Ile Val Asp Cys Thr
35 40 45

Asp Lys His Leu Thr Glu Ile Pro Gly Gly Ile Pro Thr Asn Thr Thr
50 55 60

Asn Leu Thr Leu Thr Ile Asn His Ile Pro Asp Ile Ser Pro Ala Ser
65 70 75 80

Phe His Arg Leu Asp His Leu Val Glu Ile Asp Phe Arg Cys Asn Cys
85 90 95

Val Pro Ile Pro Leu Gly Ser Lys Asn Asn Met Cys Ile Lys Arg Leu
100 105 110

Gln Ile Lys Pro Arg Ser Phe Ser Gly Leu Thr Tyr Leu Lys Ser Leu
115 120 125

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

Ser Leu Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile Phe Ser Ile Arg
145 150 155 160

Lys Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile Leu Tyr Leu Gly
165 170 175

Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser Tyr Ser Ile Glu
180 185 190

Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val Leu Ser Leu Lys
195 200 205

Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro Ser Thr Leu Thr
210 215 220

Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile Gln Glu Asp Asp
225 230 235 240

Phe Asn Asn Leu Asn Gln Leu Gln Ile Leu Asp Leu Ser Gly Asn Cys
245 250 255

Pro Arg Cys Tyr Asn Ala Pro Phe Pro Cys Ala Pro Cys Lys Asn Asn
260 265 270

Ser Pro Leu Gln Ile Pro Val Asn Ala Phe Asp Ala Leu Thr Glu Leu
275 280 285

Lys Val Leu Arg Leu His Ser Asn Ser Leu Gln His Val Pro Pro Arg
290 295 300

Trp Phe Lys Asn Ile Asn Lys Leu Gln Glu Leu Asp Leu Ser Gln Asn
305 310 315 320

Phe Leu Ala Lys Glu Ile Gly Asp Ala Lys Phe Leu His Phe Leu Pro
325 330 335

Ser Leu Ile Gln Leu Asp Leu Ser Phe Asn Phe Glu Leu Gln Val Tyr
340 345 350

Arg Ala Ser Met Asn Leu Ser Gln Ala Phe Ser Ser Leu Lys Ser Leu
355 360 365

Lys Ile Leu Arg Ile Arg Gly Tyr Val Phe Lys Glu Leu Lys Ser Phe
370 375 380

Asn Leu Ser Pro Leu His Asn Leu Gln Asn Leu Glu Val Leu Asp Leu
385 390 395 400

Gly Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met Phe Lys Gln Phe
405 410 415

Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys Ile Ser Pro Ser
420 425 430

Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala Arg Thr Ser Val
435 440 445

Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His Tyr Phe Arg Tyr
450 455 460

Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys Glu Ala Ser Phe
465 470 475 480

Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly Gln Thr Leu Asp Leu
485 490 495

Ser Lys Asn Ser Ile Phe Phe Val Lys Ser Ser Asp Phe Gln His Leu
500 505 510

Ser Phe Leu Lys Cys Leu Asn Leu Ser Gly Asn Leu Ile Ser Gln Thr
515 520 525

Leu Asn Gly Ser Glu Phe Gln Pro Leu Ala Glu Leu Arg Tyr Leu Asp
530 535 540

Phe Ser Asn Asn Arg Leu Asp Leu Leu His Ser Thr Ala Phe Glu Glu
545 550 555 560

Leu His Lys Leu Glu Val Leu Asp Ile Ser Ser Asn Ser His Tyr Phe
565 570 575

Gln Ser Glu Gly Ile Thr His Met Leu Asn Phe Thr Lys Asn Leu Lys
580 585 590

Val Leu Gln Lys Leu Met Met Asn Asp Asn Asp Ile Ser Ser Ser Thr
595 600 605

Ser Arg Thr Met Glu Ser Glu Ser Leu Arg Thr Leu Glu Phe Arg Gly
610 615 620

Asn His Leu Asp Val Leu Trp Arg Glu Gly Asp Asn Arg Tyr Leu Gln
625 630 635 640

Leu Phe Lys Asn Leu Leu Lys Leu Glu Glu Leu Asp Ile Ser Lys Asn
645 650 655

Ser Leu Ser Phe Leu Pro Ser Gly Val Phe Asp Gly Met Pro Pro Asn
660 665 670

Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys Ser Phe Ser Trp
675 680 685

Lys Lys Leu Gln Cys Leu Lys Asn Leu Glu Thr Leu Asp Leu Ser His
690 695 700

Asn Gln Leu Thr Thr Val Pro Glu Arg Leu Ser Asn Cys Ser Arg Ser
705 710 715 720

Leu Lys Asn Leu Ile Leu Lys Asn Asn Gln Ile Arg Ser Leu Thr Lys
725 730 735

Tyr Phe Leu Gln Asp Ala Phe Gln Leu Arg Tyr Leu Asp Leu Ser Ser
740 745 750

Asn Lys Ile Gln Met Ile Gln Lys Thr Ser Phe Pro Glu Asn Val Leu
755 760 765

Asn Asn Leu Lys Met Leu Leu His His Asn Arg Phe Leu Cys Thr
770 775 780

Cys Asp Ala Val Trp Phe Val Trp Trp Val Asn His Thr Glu Val Thr
785 790 795 800

Ile Pro Tyr Leu Ala Thr Asp Val Thr Cys Val Gly Pro Gly Ala His

805

810

815

Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr Thr Cys Glu Leu Asp
820 825 830

Leu Thr Asn Leu Ile Leu Phe Ser Leu Ser Ile Ser Val Ser Leu Phe
835 840 845

Leu Met Val Met Met Thr Ala Ser His Leu Tyr Phe Trp Asp Val Trp
850 855 860

Tyr Ile Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu
865 870 875 880

Ile Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys
885 890 895

Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys Leu
900 905 910

Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu Arg Asp
915 920 925

Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln Ser Ile Gln
930 935 940

Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys Tyr Ala Lys Thr
945 950 955 960

Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His Gln Arg Leu Met Asp
965 970 975

Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu Glu Lys Pro Phe Gln
980 985 990 995

Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu Cys Gly Ser Ser Val
995 1000 1005

Leu Glu Trp Pro Thr Asn Pro Gln Ala His Pro Tyr Phe Trp Gln
1010 1015 1020

Cys Leu Lys Asn Ala Leu Ala Thr Asp Asn His Val Ala Tyr Ser
1025 1030 1035

Gln Val Phe Lys Glu Thr Val
1040 1045

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<211> 180
<212> DNA
<213> Mus musculus

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<221> CDS
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Leu Gly Lys Pro Leu Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg
1 5 10 15

ctc tgc agg agc tct gtc ctt gag tgg cct gca aat cca cag gct cac 96
Leu Cys Arg Ser Ser Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His
20 25 30

cca tac ttc tgg cag tgc ctg aaa aat gcc ctg acc aca gac aat cat 144
Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His
35 40 45

gtg gct tat agt caa atg ttc aag gaa aca gtc tag 180
Val Ala Tyr Ser Gln Met Phe Lys Glu Thr Val
50 55

<210> 14
<211> 59
<212> PRT
<213> Mus musculus

<400> 14

Leu Gly Lys Pro Leu Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg
1 5 10 15

Leu Cys Arg Ser Ser Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His
20 25 30

Pro Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His
35 40 45

Val Ala Tyr Ser Gln Met Phe Lys Glu Thr Val
50 55

<210> 15
<211> 990
<212> DNA
<213> Homo sapiens

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g aat tcc aga ctt ata aac ttg aaa aat ctc tat ttg gcc tgg aac tgc 49
Asn Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr Leu Ala Trp Asn Cys
1 5 10 15

tat ttt aac aaa gtt tgc gag aaa act aac ata gaa gat gga gta ttt 97
Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile Glu Asp Gly Val Phe
20 25 30

gaa acg ctg aca aat ttg gag ttg cta tca cta tct ttc aat tct ctt 145
Glu Thr Leu Thr Asn Leu Glu Leu Ser Leu Ser Phe Asn Ser Leu
35 40 45

tca cat gtg cca ccc aaa ctg cca agc tcc cta cgc aaa ctt ttt ctg 193
Ser His Val Pro Pro Lys Leu Pro Ser Ser Leu Arg Lys Leu Phe Leu
50 55 60

agc aac acc cag atc aaa tac att agt gaa gaa gat ttc aag gga ttg 241
Ser Asn Thr Gln Ile Lys Tyr Ile Ser Glu Glu Asp Phe Lys Gly Leu
65 70 75 80

ata aat tta aca tta cta gat tta agc ggg aac tgt ccg agg tgc ttc 289
Ile Asn Leu Thr Leu Leu Asp Leu Ser Gly Asn Cys Pro Arg Cys Phe
85 90 95

aat gcc cca ttt cca tgc gtg cct tgt gat ggt ggt gct tca att aat 337
Asn Ala Pro Phe Pro Cys Val Pro Cys Asp Gly Gly Ala Ser Ile Asn
100 105 110

ata gat cgt ttt gct ttt caa aac ttg acc caa ctt cga tac cta aac 385
Ile Asp Arg Phe Ala Phe Gln Asn Leu Thr Gln Leu Arg Tyr Leu Asn
115 120 125

ctc tct agc act tcc ctc agg aag att aat gct gcc tgg ttt aaa aat 433
Leu Ser Ser Thr Ser Leu Arg Lys Ile Asn Ala Ala Trp Phe Lys Asn
130 135 140

atg cct cat ctg aag gtg ctg gat ctt gaa ttc aac tat tta gtg gga 481

<210> 16
<211> 329
<212> PRT
<213> *Homo sapiens*

400V 16

Asn Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr Leu Ala Trp Asn Cys
1 5 10 15

Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile Glu Asp Gly Val Phe
20 25 30

Glu Thr Leu Thr Asn Leu Glu Leu Leu Ser Leu Ser Phe Asn Ser Leu
35 40 45

Ser His Val Pro Pro Lys Leu Pro Ser Ser Leu Arg Lys Leu Phe Leu
50 55 60

Ser Asn Thr Gln Ile Lys Tyr Ile Ser Glu Glu Asp Phe Lys Gly Leu
65 70 75 80

Ile Asn Leu Thr Leu Leu Asp Leu Ser Gly Asn Cys Pro Arg Cys Phe
85 90 95

Asn Ala Pro Phe Pro Cys Val Pro Cys Asp Gly Gly Ala Ser Ile Asn
100 105 110

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

Leu Ser Ser Thr Ser Leu Arg Lys Ile Asn Ala Ala Trp Phe Lys Asn
130 135 140

Met Pro His Leu Lys Val Leu Asp Leu Glu Phe Asn Tyr Leu Val Gly
145 150 155 160

Glu Ile Ala Ser Gly Ala Phe Leu Thr Met Leu Pro Arg Leu Glu Ile
165 170 175

Leu Asp Leu Ser Phe Asn Tyr Ile Lys Gly Ser Tyr Pro Gln His Ile
180 185 190

Asn Ile Ser Arg Asn Phe Ser Lys Leu Leu Ser Leu Arg Ala Leu His
195 200 205

Leu Arg Gly Tyr Val Phe Gln Glu Leu Arg Glu Asp Asp Phe Gln Pro

210	215	220	
Leu Met Gln Leu Pro Asn Leu Ser Thr Ile Asn Leu Gly Ile Asn Phe			
225	230	235	240
Ile Lys Gln Ile Asp Phe Lys Leu Phe Gln Asn Phe Ser Asn Leu Glu			
245	250	255	
Ile Ile Tyr Leu Ser Glu Asn Arg Ile Ser Pro Leu Val Lys Asp Thr			
260	265	270	
Arg Gln Ser Tyr Ala Asn Ser Ser Ser Phe Gln Arg His Ile Arg Lys			
275	280	285	
Arg Arg Ser Thr Asp Phe Glu Phe Asp Pro His Ser Asn Phe Tyr His			
290	295	300	
Phe Thr Arg Pro Leu Ile Lys Pro Gln Cys Ala Ala Tyr Gly Lys Ala			
305	310	315	320
Leu Asp Leu Ser Leu Asn Ser Ile Phe			
325			
<210> 17			
<211> 1543			
<212> DNA			
<213> Homo sapiens			
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<222> (1)..(513)			
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Gln Ser Leu Ser Thr Ser Gln Thr Phe Tyr Asp Ala Tyr Ile Ser Tyr			
1	5	10	15
gac acc aaa gat gcc tct gtt act gac tgg gtg ata aat gag ctg cgc			96
Asp Thr Lys Asp Ala Ser Val Thr Asp Trp Val Ile Asn Glu Leu Arg			
20	25	30	
tac cac ctt gaa gag agc cga gac aaa aac gtt ctc ctt tgt cta gag			144
Tyr His Leu Glu Glu Ser Arg Asp Lys Asn Val Leu Leu Cys Leu Glu			
35	40	45	

gag agg gat tgg gac ccg gga ttg gcc atc atc gac aac ctc atg cag		192
Glu Arg Asp Trp Asp Pro Gly Leu Ala Ile Ile Asp Asn Leu Met Gln		
50 55 60		
agc atc aac caa agc aag aaa aca gta ttt gtt tta acc aaa aaa tat		240
Ser Ile Asn Gln Ser Lys Lys Thr Val Phe Val Leu Thr Lys Lys Tyr		
65 70 75 80		
gca aaa agc tgg aac ttt aaa aca gct ttt tac ttg gsc ttg cag agg		288
Ala Lys Ser Trp Asn Phe Lys Thr Ala Phe Tyr Leu Xaa Leu Gln Arg		
85 90 95		
cta atg ggt gag aac atg gat gtg att ata ttt atc ctg ctg gag cca		336
Leu Met Gly Glu Asn Met Asp Val Ile Ile Phe Ile Leu Leu Glu Pro		
100 105 110		
gtg tta cag cat tct ccg tat ttg agg cta cg ^g cag cg ^g atc tgt aag		384
Val Leu Gln His Ser Pro Tyr Leu Arg Leu Arg Gln Arg Ile Cys Lys		
115 120 125		
agc tcc atc ctc cag tgg cct gac aac ccg aag gca gaa agg ttg ttt		432
Ser Ser Ile Leu Gln Trp Pro Asp Asn Pro Lys Ala Glu Arg Leu Phe		
130 135 140		
tgg caa act ctg wga aat gtg gtc ttg act gaa aat gat tca cg ^g tat		480
Trp Gln Thr Leu Xaa Asn Val Val Leu Thr Glu Asn Asp Ser Arg Tyr		
145 150 155 160		
aac aat atg tat gtc gat tcc att aag caa tac taactgacgt taagtcatga		533
Asn Asn Met Tyr Val Asp Ser Ile Lys Gln Tyr		
165 170		
tttcgcgccca taataaagat gcaaaggaaat gacatttcgt attagttatc tattgctagg		593
taacaaaatta tccccaaaaac tttagtggttt aaaacaacac atttgctggc ccacagttt		653
tgagggtcag gagtccaggc ccagcataac tgggtcttct gcttcagggt gtctcagagg		713
ctgcaatgta ggtgttcacc agagacatag gcatcactgg ggtcacactc atgtggttgt		773
tttctggatt caattcctcc tgggctattg gccaaaggct atactcatgt aagccatgcg		833
agcctatccc acaaggcagc ttgcttcattc agagctagca aaaaagagag gttgctagca		893
agatgaagtc acaatctttt gtaatcgaat caaaaaagtg atatctcattc actttggcca		953
tattctattt gttagaagta aaccacaggt cccaccagct ccatgggagt gaccacctca		1013
gtccaggaa aacagctgaa gaccaagatg gtgagctctg attgcttcag ttggcatca		1073
actatttcc cttgactgct gtcctggat ggccggctat cttgatggat agattgtgaa		1133
tatcaggagg ccagggatca ctgtggacca tcttagcagt tgacctaaca catcttctt		1193

tcaatatcta	agaacttttg	ccactgtgac	taatggcct	aatattaagc	tgttgttat	1253
atttatcata	tatctatggc	tacatggta	tattatgctg	tggttgcgtt	cggttttatt	1313
tacagttgct	tttacaaata	tttgctgtaa	catttactt	ctaaggttta	gatgccattt	1373
aagaactgag	atggatagct	tttaaagcat	cttttacttc	ttaccatttt	ttaaaagtat	1433
gcagctaaat	tcgaagcttt	tggcttat	tgttaattgc	cattgctgta	aatctaaaaa	1493
tgaatgaata	aaaatgttcc	atttaaaaaa	aaaaaaaaaa	aaaaaaaaaa		1543

<210> 18
<211> 171
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (93)..(93)
<223> The 'Xaa' at location 93 stands for Gly, or Ala.

<220>
<221> misc_feature
<222> (149)..(149)
<223> The 'Xaa' at location 149 stands for Arg.

<400> 18

Gln	Ser	Leu	Ser	Thr	Ser	Gln	Thr	Phe	Tyr	Asp	Ala	Tyr	Ile	Ser	Tyr
1						5			10				15		

Asp	Thr	Lys	Asp	Ala	Ser	Val	Thr	Asp	Trp	Val	Ile	Asn	Glu	Leu	Arg
			20					25					30		

Tyr	His	Leu	Glu	Glu	Ser	Arg	Asp	Lys	Asn	Val	Leu	Leu	Cys	Leu	Glu
					35			40				45			

Glu	Arg	Asp	Trp	Asp	Pro	Gly	Leu	Ala	Ile	Ile	Asp	Asn	Leu	Met	Gln
				50				55			60				

Ser	Ile	Asn	Gln	Ser	Lys	Lys	Thr	Val	Phe	Val	Leu	Thr	Lys	Tyr
					65			70			75		80	

Ala	Lys	Ser	Trp	Asn	Phe	Lys	Thr	Ala	Phe	Tyr	Leu	Xaa	Leu	Gln	Arg
					85				90				95		

Leu Met Gly Glu Asn Met Asp Val Ile Ile Phe Ile Leu Leu Glu Pro
100 105 110

Val Leu Gln His Ser Pro Tyr Leu Arg Leu Arg Gln Arg Ile Cys Lys
115 120 125

Ser Ser Ile Leu Gln Trp Pro Asp Asn Pro Lys Ala Glu Arg Leu Phe
130 135 140

Trp Gln Thr Leu Xaa Asn Val Val Leu Thr Glu Asn Asp Ser Arg Tyr
145 150 155 160

Asn Asn Met Tyr Val Asp Ser Ile Lys Gln Tyr
165 170

<210> 19
<211> 629
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(486)

<400> 19
aat gaa ttg atc ccc aat cta gag aag gaa gat ggt tct atc ttg att 48
Asn Glu Leu Ile Pro Asn Leu Glu Lys Glu Asp Gly Ser Ile Leu Ile
1 5 10 15

tgc ctt tat gaa agc tac ttt gac cct ggc aaa agc att agt gaa aat 96
Cys Leu Tyr Glu Ser Tyr Phe Asp Pro Gly Lys Ser Ile Ser Glu Asn
20 25 30

att gta agc ttc att gag aaa agc tat aag tcc atc ttt gtt ttg tcy 144
Ile Val Ser Phe Ile Glu Lys Ser Tyr Lys Ser Ile Phe Val Leu Xaa
35 40 45

ccc aac ttt gtc cag aat gag tgg tgc cat tat gaa ttc tac ttt gcc 192
Pro Asn Phe Val Gln Asn Glu Trp Cys His Tyr Glu Phe Tyr Phe Ala
50 55 60

cac cac aat ctc ttc cat gaa aat tct gat cay ata att ctt atc tta 240
His His Asn Leu Phe His Glu Asn Ser Asp His Ile Ile Leu Ile Leu
65 70 75 80

ctg gaa ccc att cca ttc tat tgc att ccc acc agg tat cat aaa ctg 288
Leu Glu Pro Ile Pro Phe Tyr Cys Ile Pro Thr Arg Tyr His Lys Leu
85 90 95

gaa gct ctc ctg gaa aaa aaa gca tac ttg gaa tgg ccc aag gat agg		336	
Glu Ala Leu Leu Glu Lys Lys Ala Tyr Leu Glu Trp Pro Lys Asp Arg			
100	105	110	
cgt aaa tgt ggg ctt ttc tgg gca aac ctt cga gct gct gtt aat gtt		384	
Arg Lys Cys Gly Leu Phe Trp Ala Asn Leu Arg Ala Ala Val Asn Val			
115	120	125	
aat gta tta gcc acc aga gaa atg tat gaa ctg cag aca ttc aca gag		432	
Asn Val Leu Ala Thr Arg Glu Met Tyr Glu Leu Gln Thr Phe Thr Glu			
130	135	140	
tta aat gaa gag tct cga ggt tct aca atc tct ctg atg aga aca gac		480	
Leu Asn Glu Glu Ser Arg Gly Ser Thr Ile Ser Leu Met Arg Thr Asp			
145	150	155	160
tgt cta taaaatccca cagtccttgg gaagttgggg accacataca ctgttggat		536	
Cys Leu			
gtacatttat acaaccttta tgatggcaat ttgacaatat ttattaaaat aaaaaatgg		596	
tattcccttc aaaaaaaaaa aaaaaaaaaa aaa		629	

<210> 20
<211> 162
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (48)..(48)
<223> The 'Xaa' at location 48 stands for Ser.

<400> 20

Asn Glu Leu Ile Pro Asn Leu Glu Lys Glu Asp Gly Ser Ile Leu Ile			
1	5	10	15

Cys Leu Tyr Glu Ser Tyr Phe Asp Pro Gly Lys Ser Ile Ser Glu Asn		
20	25	30

Ile Val Ser Phe Ile Glu Lys Ser Tyr Lys Ser Ile Phe Val Leu Xaa		
35	40	45

Pro Asn Phe Val Gln Asn Glu Trp Cys His Tyr Glu Phe Tyr Phe Ala		
50	55	60

His His Asn Leu Phe His Glu Asn Ser Asp His Ile Ile Leu Ile Leu
65 70 75 80

Leu Glu Pro Ile Pro Phe Tyr Cys Ile Pro Thr Arg Tyr His Lys Leu
85 90 95

Glu Ala Leu Leu Glu Lys Lys Ala Tyr Leu Glu Trp Pro Lys Asp Arg
100 105 110

Arg Lys Cys Gly Leu Phe Trp Ala Asn Leu Arg Ala Ala Val Asn Val
115 120 125

Asn Val Leu Ala Thr Arg Glu Met Tyr Glu Leu Gln Thr Phe Thr Glu
130 135 140

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

Cys Leu

<210> 21
<211> 427
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(426)

<400> 21
aag aac tcc aaa gaa aac ctc cag ttt cat gct ttt att tca tat agt 48
Lys Asn Ser Lys Glu Asn Leu Gln Phe His Ala Phe Ile Ser Tyr Ser
1 5 10 15

gaa cat gat tct gcc tgg gtg aaa agt gaa ttg gta cct tac cta gaa 96
Glu His Asp Ser Ala Trp Val Lys Ser Glu Leu Val Pro Tyr Leu Glu
20 25 30

aaa gaa gat ata cag att tgt ctt cat gag aga aac ttt gtc cct ggc 144
Lys Glu Asp Ile Gln Ile Cys Leu His Glu Arg Asn Phe Val Pro Gly
35 40 45

aag agc att gtg gaa aat atc atc aac tgc att gag aag agt tac aag 192
Lys Ser Ile Val Glu Asn Ile Ile Asn Cys Ile Glu Lys Ser Tyr Lys
50 55 60

tcc atc ttt gtt ttg tct ccc aac ttt gtc cag agt gag tgg tgc cat 240
Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Ser Glu Trp Cys His
65 70 75 80

tac gaa ctc tat ttt gcc cat cac aat ctc ttt cat gaa gga tct aat 288
Tyr Glu Leu Tyr Phe Ala His His Asn Leu Phe His Glu Gly Ser Asn
85 90 95

aac tta atc ctc atc tta ctg gaa ccc att cca cag aac agc att ccc 336
Asn Leu Ile Leu Ile Leu Glu Pro Ile Pro Gln Asn Ser Ile Pro
100 105 110

aac aag tac cac aag ctg aag gct ctc atg acg cag cg^g act tat ttg 384
Asn Lys Tyr His Lys Leu Lys Ala Leu Met Thr Gln Arg Thr Tyr Leu
115 120 125

cag tgg ccc aag gag aaa agc aaa cgt ggg ctc ttt tgg gct a 427
Gln Trp Pro Lys Glu Lys Ser Lys Arg Gly Leu Phe Trp Ala
130 135 140

<210> 22
<211> 142
<212> PRT
<213> Homo sapiens

<400> 22

Lys Asn Ser Lys Glu Asn Leu Gln Phe His Ala Phe Ile Ser Tyr Ser
1 5 10 15

Glu His Asp Ser Ala Trp Val Lys Ser Glu Leu Val Pro Tyr Leu Glu
20 25 30

Lys Glu Asp Ile Gln Ile Cys Leu His Glu Arg Asn Phe Val Pro Gly
35 40 45

Lys Ser Ile Val Glu Asn Ile Ile Asn Cys Ile Glu Lys Ser Tyr Lys
50 55 60

Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Ser Glu Trp Cys His
65 70 75 80

Tyr Glu Leu Tyr Phe Ala His His Asn Leu Phe His Glu Gly Ser Asn
85 90 95

Asn Leu Ile Leu Ile Leu Glu Pro Ile Pro Gln Asn Ser Ile Pro

100 105 110

Asn Lys Tyr His Lys Leu Lys Ala Leu Met Thr Gln Arg Thr Tyr Leu
115 120 125

Gln Trp Pro Lys Glu Lys Ser Lys Arg Gly Leu Phe Trp Ala
130 135 140

<210> 23
<211> 662
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(627)

<220>
<221> misc_feature
<222> (316)..(316)
<223> unknown nucleotide

<220>
<221> misc_feature
<222> (380)..(380)
<223> unknown nucleotide

<220>
<221> misc_feature
<222> (407)..(407)
<223> unknown nucleotide

<220>
<221> misc_feature
<222> (408)..(408)
<223> unknown nucleotide

<400> 23
gct tcc acc tgt gcc tgg cct ggc ttc cct ggc ggg ggc ggc aaa gtg 48
Ala Ser Thr Cys Ala Trp Pro Gly Phe Pro Gly Gly Gly Lys Val
1 5 10 15

ggc gar atg agg atg ccc tgc cct acg atg cct tcg tgg tct tcg aca 96
Gly Glu Met Arg Met Pro Cys Pro Thr Met Pro Ser Trp Ser Ser Thr
20 25 30

aaa cgc rga gcg cag tgg cag act ggg tgt aca acg agc ttc ggg ggc 144
Lys Arg Xaa Ala Gln Trp Gln Thr Gly Cys Thr Ser Phe Gly Gly
35 40 45

agc tgg agg agt gcc gtg ggc gct ggg cac tcc gcc tgt gcc tgg agg	192
Ser Trp Arg Ser Ala Val Gly Ala Gly His Ser Ala Cys Ala Trp Arg	
50 55 60	
aac gcg act ggc tgc ctg gca aaa ccc tct ttg aga acc tgt ggg cct	240
Asn Ala Thr Gly Cys Leu Ala Lys Pro Ser Leu Arg Thr Cys Gly Pro	
65 70 75 80	
cgg tct atg gca gcc gca aga cgc tgt ttg tgc tgg ccc aca cgg acc	288
Arg Ser Met Ala Ala Arg Arg Cys Leu Cys Trp Pro Thr Arg Thr	
85 90 95	
ggg tca gtg gtc tct tgc gcg cca ktt ntc ctg ctg gcc cag cag cgc	336
Gly Ser Val Val Ser Cys Ala Pro Xaa Xaa Leu Leu Ala Gln Gln Arg	
100 105 110	
ctg ctg gar gac cgc aag gac gtc gtg gtg ctg gtg atc cta ang cct	384
Leu Leu Glu Asp Arg Lys Asp Val Val Val Leu Val Ile Leu Xaa Pro	
115 120 125	
gac ggc caa gcc tcc cga cta cnn gat gcg ctg acc agc gcc tct gcc	432
Asp Gly Gln Ala Ser Arg Leu Xaa Asp Ala Leu Thr Ser Ala Ser Ala	
130 135 140	
gcc aga gtg tcc tcc tct ggc ccc acc agc cca gtg gtc gcg cag ctt	480
Ala Arg Val Ser Ser Gly Pro Thr Ser Pro Val Val Ala Gln Leu	
145 150 155 160	
ctg agg cca gca tgc atg gcc ctg acc agg gac aac cac cac ttc tat	528
Leu Arg Pro Ala Cys Met Ala Leu Thr Arg Asp Asn His His Phe Tyr	
165 170 175	
aac cgg aac ttc tgc cag gga acc cac ggc cga ata gcc gtg agc cgg	576
Asn Arg Asn Phe Cys Gln Gly Thr His Gly Arg Ile Ala Val Ser Arg	
180 185 190	
aat cct gca cgg tgc cac ctc cac aca cac cta aca tat gcc tgc ctg	624
Asn Pro Ala Arg Cys His Leu His Thr His Leu Thr Tyr Ala Cys Leu	
195 200 205	
atc tgaccaaacac atgctcgcca ccctcaccac acacc	662
Ile	

<210> 24
<211> 209
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (35)..(35)

<223> The 'Xaa' at location 35 stands for Gly, or Arg.

<220>

<221> misc_feature
<222> (105)..(105)

<223> The 'Xaa' at location 105 stands for Val, or Phe.

<220>

<221> misc_feature
<222> (106)..(106)

<223> The 'Xaa' at location 106 stands for Ile, Val, Leu, or Phe.

<220>

<221> misc_feature
<222> (127)..(127)

<223> The 'Xaa' at location 127 stands for Lys, Arg, Thr, or Met.

<220>

<221> misc_feature
<222> (136)..(136)

<223> The 'Xaa' at location 136 stands for Gln, His, Arg, Pro, or Leu.

<400> 24

Ala Ser Thr Cys Ala Trp Pro Gly Phe Pro Gly Gly Gly Lys Val
1 5 10 15

Gly Glu Met Arg Met Pro Cys Pro Thr Met Pro Ser Trp Ser Ser Thr
20 25 30

Lys Arg Xaa Ala Gln Trp Gln Thr Gly Cys Thr Thr Ser Phe Gly Gly
35 40 45

Ser Trp Arg Ser Ala Val Gly Ala Gly His Ser Ala Cys Ala Trp Arg
50 55 60

Asn Ala Thr Gly Cys Leu Ala Lys Pro Ser Leu Arg Thr Cys Gly Pro
65 70 75 80

Arg Ser Met Ala Ala Ala Arg Arg Cys Leu Cys Trp Pro Thr Arg Thr
85 90 95

Gly Ser Val Val Ser Cys Ala Pro Xaa Xaa Leu Leu Ala Gln Gln Arg
100 105 110

Leu Leu Glu Asp Arg Lys Asp Val Val Val Leu Val Ile Leu Xaa Pro
115 120 125

Asp Gly Gln Ala Ser Arg Leu Xaa Asp Ala Leu Thr Ser Ala Ser Ala
130 135 140

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

Leu Arg Pro Ala Cys Met Ala Leu Thr Arg Asp Asn His His Phe Tyr
165 170 175

Asn Arg Asn Phe Cys Gln Gly Thr His Gly Arg Ile Ala Val Ser Arg
180 185 190

Asn Pro Ala Arg Cys His Leu His Thr His Leu Thr Tyr Ala Cys Leu
195 200 205

Ile

<210> 25
<211> 4865
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (107)..(2617)

<220>
<221> mat_peptide
<222> (173)..()

<400> 25
aaaatactcc cttgcctcaa aaactgctcg gtcaaacgggt gatagcaaac cacgcattca 60
cagggccact gctgctcaca aaaccagtga ggatgatgcc aggatg atg tct gcc 115
Met Ser Ala
-20

tcg cgc ctg gct ggg act ctg atc cca gcc atg gcc ttc ctc tcc tgc 163
Ser Arg Leu Ala Gly Thr Leu Ile Pro Ala Met Ala Phe Leu Ser Cys
-15 -10 -5

gtg aga cca gaa agc tgg gag ccc tgc gtg gag gtt cct aat att act 211
Val Arg Pro Glu Ser Trp Glu Pro Cys Val Glu Val Pro Asn Ile Thr
-1 1 5 10

tat caa tgc atg gag ctg aat ttc tac aaa atc ccc gac aac ctc ccc Tyr Gln Cys Met Glu Leu Asn Phe Tyr Lys Ile Pro Asp Asn Leu Pro	15	20	25	259
ttc tca acc aag aac ctg gac ctg agc ttt aat ccc ctg agg cat tta Phe Ser Thr Lys Asn Leu Asp Leu Ser Phe Asn Pro Leu Arg His Leu	30	35	40	307
ggc agc tat agc ttc ttc agt ttc cca gaa ctg cag gtg ctg gat tta Gly Ser Tyr Ser Phe Phe Ser Phe Pro Glu Leu Gln Val Leu Asp Leu	50	55	60	355
tcc agg tgt gaa atc cag aca att gaa gat ggg gca tat cag agc cta Ser Arg Cys Glu Ile Gln Thr Ile Glu Asp Gly Ala Tyr Gln Ser Leu	65	70	75	403
agc cac ctc tct acc tta ata ttg aca gga aac ccc atc cag agt tta Ser His Leu Ser Thr Leu Ile Leu Thr Gly Asn Pro Ile Gln Ser Leu	80	85	90	451
gcc ctg gga gcc ttt tct gga cta tca agt tta cag aag ctg gtg gct Ala Leu Gly Ala Phe Ser Gly Leu Ser Ser Leu Gln Lys Leu Val Ala	95	100	105	499
gtg gag aca aat cta gca tct cta gag aac ttc ccc att gga cat ctc Val Glu Thr Asn Leu Ala Ser Leu Glu Asn Phe Pro Ile Gly His Leu	110	115	120	547
aaa act ttg aaa gaa ctt aat gtg gct cac aat ctt atc caa tct ttc Lys Thr Leu Lys Glu Leu Asn Val Ala His Asn Leu Ile Gln Ser Phe	130	135	140	595
aaa tta cct gag tat ttt tct aat ctg acc aat cta gag cac ttg gac Lys Leu Pro Glu Tyr Phe Ser Asn Leu Thr Asn Leu Glu His Leu Asp	145	150	155	643
ctt tcc agc aac aag att caa agt att tat tgc aca gac ttg cgg gtt Leu Ser Ser Asn Lys Ile Gln Ser Ile Tyr Cys Thr Asp Leu Arg Val	160	165	170	691
cta cat caa atg ccc cta ctc aat ctc tct tta gac ctg tcc ctg aac Leu His Gln Met Pro Leu Leu Asn Leu Ser Leu Asp Leu Ser Leu Asn	175	180	185	739
cct atg aac ttt atc caa cca ggt gca ttt aaa gaa att agg ctt cat Pro Met Asn Phe Ile Gln Pro Gly Ala Phe Lys Glu Ile Arg Leu His	190	195	200	787
aag ctg act tta aga aat aat ttt gat agt tta aat gta atg aaa act Lys Leu Thr Leu Arg Asn Asn Phe Asp Ser Leu Asn Val Met Lys Thr	210	215	220	835
tgt att caa ggt ctg gct ggt tta gaa gtc cat cgt ttg gtt ctg gga				883

Cys	Ile	Gln	Gly	Leu	Ala	Gly	Leu	Glu	Val	His	Arg	Leu	Val	Leu	Gly	
225							230						235			
gaa	ttt	aga	aat	gaa	gga	aac	ttg	gaa	aag	ttt	gac	aaa	tct	gct	cta	931
Glu	Phe	Arg	Asn	Glu	Gly	Asn	Leu	Glu	Lys	Phe	Asp	Lys	Ser	Ala	Leu	
240				245								250				
gag	ggc	ctg	tgc	aat	ttg	acc	att	gaa	gaa	ttc	cga	tta	gca	tac	tta	979
Glu	Gly	Leu	Cys	Asn	Leu	Thr	Ile	Glu	Glu	Phe	Arg	Leu	Ala	Tyr	Leu	
255				260								265				
gac	tac	tac	ctc	gat	gat	att	att	gac	tta	ttt	aat	tgt	ttg	aca	aat	1027
Asp	Tyr	Tyr	Leu	Asp	Asp	Ile	Ile	Asp	Leu	Phe	Asn	Cys	Leu	Thr	Asn	
270				275					280				285			
gtt	tct	tca	ttt	tcc	ctg	gtg	agt	gtg	act	att	gaa	agg	gta	aaa	gac	1075
Val	Ser	Ser	Phe	Ser	Leu	Val	Ser	Val	Thr	Ile	Glu	Arg	Val	Lys	Asp	
290				295									300			
ttt	tct	tat	aat	ttc	gga	tgg	caa	cat	tta	gaa	tta	gtt	aac	tgt	aaa	1123
Phe	Ser	Tyr	Asn	Phe	Gly	Trp	Gln	His	Leu	Glu	Leu	Val	Asn	Cys	Lys	
305				310								315				
ttt	gga	cag	ttt	ccc	aca	ttg	aaa	ctc	aaa	tct	ctc	aaa	agg	ctt	act	1171
Phe	Gly	Gln	Phe	Pro	Thr	Leu	Lys	Leu	Lys	Ser	Leu	Lys	Arg	Leu	Thr	
320				325								330				
ttc	act	tcc	aac	aaa	ggt	ggg	aat	gct	ttt	tca	gaa	gtt	gat	cta	cca	1219
Phe	Thr	Ser	Asn	Lys	Gly	Gly	Asn	Ala	Phe	Ser	Glu	Val	Asp	Leu	Pro	
335				340								345				
agc	ctt	gag	ttt	cta	gat	ctc	agt	aga	aat	ggc	ttg	agt	ttc	aaa	ggt	1267
Ser	Leu	Glu	Phe	Leu	Asp	Leu	Ser	Arg	Asn	Gly	Leu	Ser	Phe	Lys	Gly	
350				355						360				365		
tgc	tgt	tct	caa	agt	gat	ttt	ggg	aca	acc	agc	cta	aag	tat	tta	gat	1315
Cys	Cys	Ser	Gln	Ser	Asp	Phe	Gly	Thr	Thr	Ser	Leu	Lys	Tyr	Leu	Asp	
370				375								380				
ctg	agc	tcc	aat	ggt	gtt	att	acc	atg	agt	tca	aac	ttc	ttg	ggc	tta	1363
Leu	Ser	Phe	Asn	Gly	Val	Ile	Thr	Met	Ser	Ser	Asn	Phe	Leu	Gly	Leu	
385				390								395				
gaa	caa	cta	gaa	cat	ctg	gat	ttc	cag	cat	tcc	aat	ttg	aaa	caa	atg	1411
Glu	Gln	Leu	Glu	His	Leu	Asp	Phe	Gln	His	Ser	Asn	Leu	Lys	Gln	Met	
400				405								410				
agt	gag	ttt	tca	gta	ttc	cta	tca	ctc	aga	aac	ctc	att	tac	ctt	gac	1459
Ser	Glu	Phe	Ser	Val	Phe	Leu	Ser	Leu	Arg	Asn	Leu	Ile	Tyr	Leu	Asp	
415				420								425				
att	tct	cat	act	cac	acc	aga	gtt	gct	ttc	aat	ggc	atc	ttc	aat	ggo	1507
Ile	Ser	His	Thr	His	Thr	Arg	Val	Ala	Phe	Asn	Gly	Ile	Phe	Asn	Gly	
430				435								440			445	

ttg tcc agt ctc gaa gtc ttg aaa atg gct ggc aat tct ttc cag gaa Leu Ser Ser Leu Glu Val Leu Lys Met Ala Gly Asn Ser Phe Gln Glu 450 455 460	1555
aac ttc ctt cca gat atc ttc aca gag ctg aga aac ttg acc ttc ctg Asn Phe Leu Pro Asp Ile Phe Thr Glu Leu Arg Asn Leu Thr Phe Leu 465 470 475	1603
gac ctc tct cag tgtcaa ctg gag cag ttg tct cca aca gca ttt aac Asp Leu Ser Gln Cys Gln Leu Glu Gln Leu Ser Pro Thr Ala Phe Asn 480 485 490	1651
tca ctc tcc agt ctt cag gta cta aat atg agc cac aac aac ttc ttt Ser Leu Ser Ser Leu Gln Val Leu Asn Met Ser His Asn Asn Phe Phe 495 500 505	1699
tca ttg gat acg ttt cct tat aag tgt ctg aac tcc ctc cag gtt ctt Ser Leu Asp Thr Phe Pro Tyr Lys Cys Leu Asn Ser Leu Gln Val Leu 510 515 520 525	1747
gat tac agt ctc aat cac ata atg act tcc aaa aaa cag gaa cta cag Asp Tyr Ser Leu Asn His Ile Met Thr Ser Lys Lys Gln Glu Leu Gln 530 535 540	1795
cat ttt cca agt agt cta gct ttc tta aat ctt act cag aat gac ttt His Phe Pro Ser Ser Leu Ala Phe Leu Asn Leu Thr Gln Asn Asp Phe 545 550 555	1843
gct tgt act tgt gaa cac cag agt ttc ctg caa tgg atc aag gac cag Ala Cys Thr Cys Glu His Gln Ser Phe Leu Gln Trp Ile Lys Asp Gln 560 565 570	1891
agg cag ctc ttg gtg gaa gtt gaa cga atg gaa tgt gca aca cct tca Arg Gln Leu Leu Val Glu Val Glu Arg Met Glu Cys Ala Thr Pro Ser 575 580 585	1939
gat aag cag ggc atg cct gtg ctg agt ttg aat atc acc tgt cag atg Asp Lys Gln Gly Met Pro Val Leu Ser Leu Asn Ile Thr Cys Gln Met 590 595 600 605	1987
aat aag acc atc att ggt gtg tcg gtc ctc agt gtg ctt gta gta tct Asn Lys Thr Ile Ile Gly Val Ser Val Leu Ser Val Leu Val Val Ser 610 615 620	2035
gtt gta gca gtt ctg gtc tat aag ttc tat ttt cac ctg atg ctt ctt Val Val Ala Val Leu Val Tyr Lys Phe Tyr Phe His Leu Met Leu Leu 625 630 635	2083
gct ggc tgc ata aag tat ggt aga ggt gaa aac atc tat gat gcc ttt Ala Gly Cys Ile Lys Tyr Gly Arg Gly Glu Asn Ile Tyr Asp Ala Phe 640 645 650	2131
gtt atc tac tca agc cag gat gag gac tgg gta agg aat gag cta gta	2179

Val Ile Tyr Ser Ser Gln Asp Glu Asp Trp Val Arg Asn Glu Leu Val			
655	660	665	
aag aat tta gaa gaa ggg gtg cct cca ttt cag ctc tgc ctt cac tac			2227
Lys Asn Leu Glu Glu Gly Val Pro Pro Phe Gln Leu Cys Leu His Tyr			
670	675	680	685
aga gac ttt att ccc ggt gtg gcc att gct gcc aac atc atc cat gaa			2275
Arg Asp Phe Ile Pro Gly Val Ala Ile Ala Ala Asn Ile Ile His Glu			
690	695	700	
ggc ttc cat aaa agc cga aag gtg att gtt gtg gtg tcc cag cac ttc			2323
Gly Phe His Lys Ser Arg Lys Val Ile Val Val Val Ser Gln His Phe			
705	710	715	
atc cag agc cgc tgg tgt atc ttt gaa tat gag att gct cag acc tgg			2371
Ile Gln Ser Arg Trp Cys Ile Phe Glu Tyr Glu Ile Ala Gln Thr Trp			
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cag ttt ctg agc agt cgt gct ggt atc atc ttc att gtc ctg cag aag			2419
Gln Phe Leu Ser Ser Arg Ala Gly Ile Ile Phe Ile Val Leu Gln Lys			
735	740	745	
gtg gag aag acc ctg ctc agg cag cag gtg gag ctg tac cgc ctt ctc			2467
Val Glu Lys Thr Leu Leu Arg Gln Gln Val Glu Leu Tyr Arg Leu Leu			
750	755	760	765
agc agg aac act tac ctg gag tgg gag gac agt gtc ctg ggg cggt cac			2515
Ser Arg Asn Thr Tyr Leu Glu Trp Glu Asp Ser Val Leu Gly Arg His			
770	775	780	
atc ttc tgg aga cga ctc aga aaa gcc ctg ctg gat ggt aaa tca tgg			2563
Ile Phe Trp Arg Arg Leu Arg Lys Ala Leu Leu Asp Gly Lys Ser Trp			
785	790	795	
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Asn Pro Glu Gly Thr Val Gly Thr Gly Cys Asn Trp Gln Glu Ala Thr			
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tct atc tgaaggagaa aaataaaaaac ctccctgagggc atttttttgcc cagctgggtc			2667
Ser Ile			
815			
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gtatgcaaga tgaattagct ctaaagatca gctgtatagc agagttcgta taatgaacaa	4647
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catatacata tacacaagga agctttgga ggtgatggat atatttatta ccttgattgt	4767
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<210> 26
<211> 837
<212> PRT
<213> Homo sapiens

<400> 26

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Leu Ser Cys Val Arg Pro Glu Ser Trp Glu Pro Cys Val Glu Val Pro
-5 -1 1 5 10

Asn Ile Thr Tyr Gln Cys Met Glu Leu Asn Phe Tyr Lys Ile Pro Asp
15 20 25

Asn Leu Pro Phe Ser Thr Lys Asn Leu Asp Leu Ser Phe Asn Pro Leu
30 35 40

Arg His Leu Gly Ser Tyr Ser Phe Phe Ser Phe Pro Glu Leu Gln Val
45 50 55

Leu Asp Leu Ser Arg Cys Glu Ile Gln Thr Ile Glu Asp Gly Ala Tyr
60 65 70

Gln Ser Leu Ser His Leu Ser Thr Leu Ile Leu Thr Gly Asn Pro Ile
75 80 85 90

Gln Ser Leu Ala Leu Gly Ala Phe Ser Gly Leu Ser Ser Leu Gln Lys
95 100 105

Leu Val Ala Val Glu Thr Asn Leu Ala Ser Leu Glu Asn Phe Pro Ile
110 115 120

Gly His Leu Lys Thr Leu Lys Glu Leu Asn Val Ala His Asn Leu Ile
125 130 135

Gln Ser Phe Lys Leu Pro Glu Tyr Phe Ser Asn Leu Thr Asn Leu Glu
140 145 150

His Leu Asp Leu Ser Ser Asn Lys Ile Gln Ser Ile Tyr Cys Thr Asp
155 160 165 170

Leu Arg Val Leu His Gln Met Pro Leu Leu Asn Leu Ser Leu Asp Leu
175 180 185

Ser Leu Asn Pro Met Asn Phe Ile Gln Pro Gly Ala Phe Lys Glu Ile
190 195 200

Arg Leu His Lys Leu Thr Leu Arg Asn Asn Phe Asp Ser Leu Asn Val
205 210 215

Met Lys Thr Cys Ile Gln Gly Leu Ala Gly Leu Glu Val His Arg Leu
220 225 230

Val Leu Gly Glu Phe Arg Asn Glu Gly Asn Leu Glu Lys Phe Asp Lys
235 240 245 250

Ser Ala Leu Glu Gly Leu Cys Asn Leu Thr Ile Glu Glu Phe Arg Leu
255 260 265

Ala Tyr Leu Asp Tyr Tyr Leu Asp Asp Ile Ile Asp Leu Phe Asn Cys
270 275 280

Leu Thr Asn Val Ser Ser Phe Ser Leu Val Ser Val Thr Ile Glu Arg
285 290 295

Val Lys Asp Phe Ser Tyr Asn Phe Gly Trp Gln His Leu Glu Leu Val
300 305 310

Asn Cys Lys Phe Gly Gln Phe Pro Thr Leu Lys Leu Lys Ser Leu Lys
315 320 325 330

Arg Leu Thr Phe Thr Ser Asn Lys Gly Gly Asn Ala Phe Ser Glu Val
335 340 345

Asp Leu Pro Ser Leu Glu Phe Leu Asp Leu Ser Arg Asn Gly Leu Ser
350 355 360

Phe Lys Gly Cys Cys Ser Gln Ser Asp Phe Gly Thr Thr Ser Leu Lys
365 370 375

Tyr Leu Asp Leu Ser Phe Asn Gly Val Ile Thr Met Ser Ser Asn Phe
380 385 390

Leu Gly Leu Glu Gln Leu Glu His Leu Asp Phe Gln His Ser Asn Leu
395 400 405 410

Lys Gln Met Ser Glu Phe Ser Val Phe Leu Ser Leu Arg Asn Leu Ile
415 420 425

Tyr Leu Asp Ile Ser His Thr His Thr Arg Val Ala Phe Asn Gly Ile
430 435 440

Phe Asn Gly Leu Ser Ser Leu Glu Val Leu Lys Met Ala Gly Asn Ser
445 450 455

Phe Gln Glu Asn Phe Leu Pro Asp Ile Phe Thr Glu Leu Arg Asn Leu
460 465 470

Thr Phe Leu Asp Leu Ser Gln Cys Gln Leu Glu Gln Leu Ser Pro Thr
475 480 485 490

Ala Phe Asn Ser Leu Ser Ser Leu Gln Val Leu Asn Met Ser His Asn
495 500 505

Asn Phe Phe Ser Leu Asp Thr Phe Pro Tyr Lys Cys Leu Asn Ser Leu
510 515 520

Gln Val Leu Asp Tyr Ser Leu Asn His Ile Met Thr Ser Lys Lys Gln
525 530 535

Glu Leu Gln His Phe Pro Ser Ser Leu Ala Phe Leu Asn Leu Thr Gln
540 545 550

Asn Asp Phe Ala Cys Thr Cys Glu His Gln Ser Phe Leu Gln Trp Ile
555 560 565 570

Lys Asp Gln Arg Gln Leu Leu Val Glu Val Glu Arg Met Glu Cys Ala
575 580 585

Thr Pro Ser Asp Lys Gln Gly Met Pro Val Leu Ser Leu Asn Ile Thr
590 595 600

Cys Gln Met Asn Lys Thr Ile Ile Gly Val Ser Val Leu Ser Val Leu
605 610 615

Val Val Ser Val Val Ala Val Leu Val Tyr Lys Phe Tyr Phe His Leu
620 625 630

Met Leu Leu Ala Gly Cys Ile Lys Tyr Gly Arg Gly Glu Asn Ile Tyr
635 640 645 650

Asp Ala Phe Val Ile Tyr Ser Ser Gln Asp Glu Asp Trp Val Arg Asn
655 660 665

Glu Leu Val Lys Asn Leu Glu Glu Gly Val Pro Pro Phe Gln Leu Cys
670 675 680

Leu His Tyr Arg Asp Phe Ile Pro Gly Val Ala Ile Ala Ala Asn Ile
685 690 695

Ile His Glu Gly Phe His Lys Ser Arg Lys Val Ile Val Val Val Ser
700 705 710

Gln His Phe Ile Gln Ser Arg Trp Cys Ile Phe Glu Tyr Glu Ile Ala
715 720 725 730

Gln Thr Trp Gln Phe Leu Ser Ser Arg Ala Gly Ile Ile Phe Ile Val
735 740 745

Leu Gln Lys Val Glu Lys Thr Leu Leu Arg Gln Gln Val Glu Leu Tyr
750 755 760

Arg Leu Leu Ser Arg Asn Thr Tyr Leu Glu Trp Glu Asp Ser Val Leu
765 770 775

Gly Arg His Ile Phe Trp Arg Arg Leu Arg Lys Ala Leu Leu Asp Gly
780 785 790

Lys Ser Trp Asn Pro Glu Gly Thr Val Gly Thr Gly Cys Asn Trp Gln
795 800 805 810

Glu Ala Thr Ser Ile
815

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<211> 300
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(300)

<400> 27
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Ser Tyr Ser Met Glu Lys Asp Ala Phe Leu Phe Met Arg Asn Leu Lys
1 5 10 15

gtt ctc tca cta aaa gat aac aat gtc aca gct gtc ccc acc act ttg 96
Val Leu Ser Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Thr Leu
20 25 30

cca cct aat tta cta gag ctc tat ctt tat aac aat atc att aag aaa 144
Pro Pro Asn Leu Leu Glu Leu Tyr Leu Tyr Asn Asn Ile Ile Lys Lys
35 40 45

atc caa gaa aat gat ttc aat aac ctc aat gag ttg caa gtc ctt gac 192
Ile Gln Glu Asn Asp Phe Asn Asn Leu Asn Glu Leu Gln Val Leu Asp
50 55 60

cta cgt gga aat tgc cct cga tgt cat aat gtc cca tat ccg tgt aca 240
Leu Arg Gly Asn Cys Pro Arg Cys His Asn Val Pro Tyr Pro Cys Thr
65 70 75 80

ccg tgt gaa aat aat tcc ccc tta cag atc cat gac aat gct ttc aat 288
Pro Cys Glu Asn Asn Ser Pro Leu Gln Ile His Asp Asn Ala Phe Asn
85 90 95

tca tcg aca gac 300
Ser Ser Thr Asp
100

<210> 28
 <211> 100
 <212> PRT
 <213> Mus musculus

<400> 28

Ser	Tyr	Ser	Met	Glu	Lys	Asp	Ala	Phe	Leu	Phe	Met	Arg	Asn	Leu	Lys
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Val	Leu	Ser	Leu	Lys	Asp	Asn	Asn	Val	Thr	Ala	Val	Pro	Thr	Thr	Leu
					20				25					30	

Pro	Pro	Asn	Leu	Leu	Glu	Leu	Tyr	Leu	Tyr	Asn	Asn	Ile	Ile	Lys	Lys
							35		40					45	

Ile	Gln	Glu	Asn	Asp	Phe	Asn	Asn	Leu	Asn	Glu	Leu	Gln	Val	Leu	Asp
						50		55				60			

Leu	Arg	Gly	Asn	Cys	Pro	Arg	Cys	His	Asn	Val	Pro	Tyr	Pro	Cys	Thr
						65		70			75			80	

Pro	Cys	Glu	Asn	Asn	Ser	Pro	Leu	Gln	Ile	His	Asp	Asn	Ala	Phe	Asn
						85			90					95	

Ser	Ser	Thr	Asp												
				100											

<210> 29
 <211> 1756
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(1182)

<400> 29

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Ser	Pro	Glu	Ile	Pro	Trp	Asn	Ser	Leu	Pro	Pro	Glu	Val	Phe	Glu	Gly
1								5					10		15

atg	ccg	cca	aat	cta	aag	aat	ctc	tcc	ttg	gcc	aaa	aat	ggg	ctc	aaa
Met	Pro	Pro	Asn	Leu	Lys	Asn	Leu	Ser	Leu	Ala	Lys	Asn	Gly	Leu	Lys
								20		25			30		

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

	245	250	255	
ctg gtg gca aaa ttg gaa gat cca aga gaa aaa cac ttc aat ttg tgt Leu Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys	260	265	270	816
cta gaa gaa aga gac tgg cta cca gga cag cca gtt cta gaa aac ctt Leu Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu	275	280	285	864
tcc cag agc ata cag ctc agc aaa aag aca gtg ttt gtg atg aca cag Ser Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Gln	290	295	300	912
aaa tat gct aag act gag agt ttt aag atg gca ttt tat ttg tct cat Lys Tyr Ala Lys Thr Glu Ser Phe Lys Met Ala Phe Tyr Leu Ser His	305	310	315	960
cag agg ctc ctg gat gaa aaa gtg gat gtg att atc ttg ata ttc ttg Gln Arg Leu Leu Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu	325	330	335	1008
gaa aga cct ctt cag aag tct aag ttt ctt cag ctc agg aag aga ctc Glu Arg Pro Leu Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu	340	345	350	1056
tgc agg agc tct gtc ctt gag tgg cct gca aat cca cag gct cac cca Cys Arg Ser Ser Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His Pro	355	360	365	1104
tac ttc tgg cag tgc ctg aaa aat gcc ctg acc aca gac aat cat gtg Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His Val	370	375	380	1152
gct tat agt caa atg ttc aag gaa aca gtc tagctctctg aagaatgtca Ala Tyr Ser Gln Met Phe Lys Glu Thr Val	385	390		1202
ccaccttagga catgccttgg tacctgaagt tttcataaaag gtttccataaa atgaaggct gaatttttcc taacagttgt catggctcag attgggtggaa aatcatcaat atatggctaa				1262
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				1502
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tgccatcca tgaa 1756

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<211> 394
<212> PRT
<213> Mus musculus

<400> 30

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Met Pro Pro Asn Leu Lys Asn Leu Ser Leu Ala Lys Asn Gly Leu Lys
20 25 30

Ser Phe Phe Trp Asp Arg Leu Gln Leu Leu Lys His Leu Glu Ile Leu
35 40 45

Asp Leu Ser His Asn Gln Leu Thr Lys Val Pro Glu Arg Leu Ala Asn
50 55 60

Cys Ser Lys Ser Leu Thr Thr Leu Ile Leu Lys His Asn Gln Ile Arg
65 70 75 80

Gln Leu Thr Lys Tyr Phe Leu Glu Asp Ala Leu Gln Leu Arg Tyr Leu
85 90 95

Asp Ile Ser Ser Asn Lys Ile Gln Val Ile Gln Lys Thr Ser Phe Pro
100 105 110

Glu Asn Val Leu Asn Asn Leu Glu Met Leu Val Leu His His Asn Arg
115 120 125

Phe Leu Cys Asn Cys Asp Ala Val Trp Phe Val Trp Trp Val Asn His
130 135 140

Thr Asp Val Thr Ile Pro Tyr Leu Ala Thr Asp Val Thr Cys Val Gly
145 150 155 160

Pro Gly Ala His Lys Gly Gln Ser Val Ile Ser Leu Asp Leu Tyr Thr
165 170 175

Cys Glu Leu Asp Leu Thr Asn Leu Ile Leu Phe Ser Val Ser Ile Ser
180 185 190

Ser Val Leu Phe Leu Met Val Val Met Thr Thr Ser His Leu Phe Phe
195 200 205

Trp Asp Met Trp Tyr Ile Tyr Tyr Phe Trp Lys Ala Lys Ile Lys Gly
210 215 220

Tyr Pro Ala Ser Ala Ile Pro Trp Ser Pro Cys Tyr Asp Ala Phe Ile
225 230 235 240

Val Tyr Asp Thr Lys Asn Ser Ala Val Thr Glu Trp Val Leu Gln Glu
245 250 255

Leu Val Ala Lys Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys
260 265 270

Leu Glu Glu Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu
275 280 285

Ser Gln Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Gln
290 295 300

Lys Tyr Ala Lys Thr Glu Ser Phe Lys Met Ala Phe Tyr Leu Ser His
305 310 315 320

Gln Arg Leu Leu Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe Leu
325 330 335

Glu Arg Pro Leu Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys Arg Leu
340 345 350

Cys Arg Ser Ser Val Leu Glu Trp Pro Ala Asn Pro Gln Ala His Pro
355 360 365

Tyr Phe Trp Gln Cys Leu Lys Asn Ala Leu Thr Thr Asp Asn His Val
370 375 380

Ala Tyr Ser Gln Met Phe Lys Glu Thr Val
385 390

<210> 31
<211> 999
<212> DNA
<213> *Homo sapiens*

<220>
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<222> (2)..(847)

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    Ser Asp Ala Lys Ile Arg His Gln Ala Tyr Ser Glu Val Met Met Val
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gga tgg tca gat tca tac acc tgt gaa tac cct tta aac cta agg gga
 Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr Pro Leu Asn Leu Arg Gly
 20 25 30

act agg tta aaa gac gtt cat ctc cac gaa tta tct tgc aac aca gct 145
 Thr Arg Leu Lys Asp Val His Leu His Glu Leu Ser Cys Asn Thr Ala
 35 40 45

ctg ttg att gtc acc att gtg gtt att atg cta gtt ctg ggg ttg gct
 Leu Leu Ile Val Thr Ile Val Val Ile Met Leu Val Leu Gly Leu Ala
 50 55 60

gtg gcc ttc tgc tgt ctc cac ttt gat ctg ccc tgg tat ctc agg atg
 Val Ala Phe Cys Cys Leu His Phe Asp Leu Pro Trp Tyr Leu Arg Met
 65 70 75 80

cta ggt caa tgc aca caa aca tgg cac agg gtt agg aaa aca acc caa
 Leu Gly Gln Cys Thr Gln Thr Trp His Arg Val Arg Lys Thr Thr Gln
 85 90 95

gaa caa ctc aag aga aat gtc cga ttc cac gca ttt att tca tac agt
 Glu Gln Leu Lys Arg Asn Val Arg Phe His Ala Phe Ile Ser Tyr Ser
 100 105 110

gaa cat gat tct ctg tgg gtg aag aat gaa ttg atc ccc aat cta gag 385
 Glu His Asp Ser Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu Glu
 115 120 125

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aag gaa gat ggt tct atc ttg att tgc ctt tat gaa agc tac ttt gac 433
Lys Glu Asp Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe Asp
    130           135           140

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cct ggc aaa agc att agt gaa aat att gta agc ttc att gag aaa agc
 Pro Gly Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys Ser
 145 150 155 160

tat aag tcc atc ttt gtt ttg tct ccc aac ttt gtc cag aat gag tgg		529	
Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu Trp			
165	170	175	
tgc cat tat gaa ttc tac ttt gcc cac cac aat ctc ttc cat gaa aat		577	
Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu Asn			
180	185	190	
tct gat cac ata att ctt atc tta ctg gaa ccc att cca ttc tat tgc		625	
Ser Asp His Ile Ile Leu Ile Leu Glu Pro Ile Pro Phe Tyr Cys			
195	200	205	
att ccc acc agg tat cat aaa ctg gaa gct ctc ctg gaa aaa aaa gca		673	
Ile Pro Thr Arg Tyr His Lys Leu Glu Ala Leu Leu Glu Lys Lys Ala			
210	215	220	
tac ttg gaa tgg ccc aag gat agg cgt aaa tgt ggg ctt ttc tgg gca		721	
Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly Leu Phe Trp Ala			
225	230	235	240
aac ctt cga gct gct gtt aat gtt aat gta tta gcc acc aga gaa atg		769	
Asn Leu Arg Ala Ala Val Asn Val Asn Val Leu Ala Thr Arg Glu Met			
245	250	255	
tat gaa ctg cag aca ttc aca gag tta aat gaa gag tct cga ggt tct		817	
Tyr Glu Leu Gln Thr Phe Thr Glu Leu Asn Glu Ser Arg Gly Ser			
260	265	270	
aca atc tct ctg atg aga aca gac tgt cta taaaatccca cagtccttgg		867	
Thr Ile Ser Leu Met Arg Thr Asp Cys Leu			
275	280		
gaagttgggg accacataca ctgttggat gtacattgat acaaccttta tgatggcaat		927	
ttgacaatat ttataaaaat aaaaaatggt tattcccttc aaaaaaaaaa aaaaaaaaaa		987	
aaaaaaaaaa aa		999	

<210> 32
<211> 282
<212> PRT
<213> Homo sapiens

<400> 32

Ser Asp Ala Lys Ile Arg His Gln Ala Tyr Ser Glu Val Met Met Val			
1	5	10	15

Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr Pro Leu Asn Leu Arg Gly		
20	25	30

Thr Arg Leu Lys Asp Val His Leu His Glu Leu Ser Cys Asn Thr Ala
35 40 45

Leu Leu Ile Val Thr Ile Val Val Ile Met Leu Val Leu Gly Leu Ala
50 55 60

Val Ala Phe Cys Cys Leu His Phe Asp Leu Pro Trp Tyr Leu Arg Met
65 70 75 80

Leu Gly Gln Cys Thr Gln Thr Trp His Arg Val Arg Lys Thr Thr Gln
85 90 95

Glu Gln Leu Lys Arg Asn Val Arg Phe His Ala Phe Ile Ser Tyr Ser
100 105 110

Glu His Asp Ser Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu Glu
115 120 125

Lys Glu Asp Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe Asp
130 135 140

Pro Gly Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys Ser
145 150 155 160

Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu Trp
165 170 175

Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu Asn
180 185 190

Ser Asp His Ile Ile Leu Ile Leu Leu Glu Pro Ile Pro Phe Tyr Cys
195 200 205

Ile Pro Thr Arg Tyr His Lys Leu Glu Ala Leu Leu Glu Lys Lys Ala
210 215 220

Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly Leu Phe Trp Ala
225 230 235 240

Asn Leu Arg Ala Ala Val Asn Val Asn Val Leu Ala Thr Arg Glu Met

245

250

255

Tyr Glu Leu Gln Thr Phe Thr Glu Leu Asn Glu Glu Ser Arg Gly Ser
260 265 270

Thr Ile Ser Leu Met Arg Thr Asp Cys Leu
275 280

<210> 33
<211> 1173
<212> DNA
<213> *Homo sapiens*

<220>
<221> CDS
<222> (1)...(1008)

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<400> 33 ctg cct gct ggc acc cg5 ctc cg10 agg ctg gat gtc agc tgc aac agc 48
Leu Pro Ala Gly Thr Arg Leu Arg Arg Leu Asp Val Ser Cys Asn Ser
1          5          10          15

```

atc agc ttc gtg gcc ccc ggc ttc ttt tcc aag gcc aag gag ctg cga 96
 Ile Ser Phe Val Ala Pro Gly Phe Phe Ser Lys Ala Lys Glu Leu Arg
 20 25 30

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gag ctc aac ctt agc gcc aac gcc ctc aag aca gtg gac cac tcc tgg      144
Glu Leu Asn Leu Ser Ala Asn Ala Leu Lys Thr Val Asp His Ser Trp
35          40          45

```

ttt ggg ccc ctg gcg agt gcc ctg caa ata cta gat gta agc gcc aac 192
Phe Gly Pro Leu Ala Ser Ala Leu Gln Ile Leu Asp Val Ser Ala Asn
50 55 60

cct ctg cac tgc gcc tgt ggg gcg gcc ttt atg gac ttc ctg ctg gag 240
 Pro Leu His Cys Ala Cys Gly Ala Ala Phe Met Asp Phe Leu Leu Glu
 65 70 75 80

```

gtg cag gct gcc gtg ccc ggt ctg ccc agc cgg gtg aag tgt ggc agt      288
Val Gln Ala Ala Val Pro Gly Leu Pro Ser Arg Val Lys Cys Gly Ser
          85          90          95

```

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ccg ggc cag ctc cag ggc ctc agc atc ttt gca cag gac ctg cgc ctc      336
Pro Gly Gln Leu Gln Gly Leu Ser Ile Phe Ala Gln Asp Leu Arg Leu
          100       105       110

```

tgc ctg gat gag gcc ctc tcc tgg gac tgt ttc gcc ctc tag ctg ctg 384
 Cys Leu Asp Glu Ala Leu Ser Trp Asp Cys Phe Ala Leu Ser Leu Leu
 115 120 125

gct gtg gct ctg ggc ctg ggt gtg ccc atg ctg cat cac ctc tgt ggc Ala Val Ala Leu Gly Leu Gly Val Pro Met Leu His His Leu Cys Gly 130 135 140	432
tgg gac ctc tgg tac tgc ttc cac ctg tgc ctg gcc tgg ctt ccc tgg Trp Asp Leu Trp Tyr Cys Phe His Leu Cys Leu Ala Trp Leu Pro Trp 145 150 155 160	480
cgg ggg cgaa agt ggg cga gat gag gat gcc ctg ccc tac gat gcc Arg Gly Arg Gln Ser Gly Arg Asp Glu Asp Ala Leu Pro Tyr Asp Ala 165 170 175	528
ttc gtg gtc ttc gac aaa acg cag agc gca gtg gca gac tgg gtg tac Phe Val Val Phe Asp Lys Thr Gln Ser Ala Val Ala Asp Trp Val Tyr 180 185 190	576
aac gag ctt cgg ggg cag ctg gag gag tgc cgt ggg cgc tgg gca ctc Asn Glu Leu Arg Gly Gln Leu Glu Glu Cys Arg Gly Arg Trp Ala Leu 195 200 205	624
cgc ctg tgc ctg gag gaa cgc gac tgg ctg cct ggc aaa acc ctc ttt Arg Leu Cys Leu Glu Glu Arg Asp Trp Leu Pro Gly Lys Thr Leu Phe 210 215 220	672
gag aac ctg tgg gcc tcg gtc tat ggc agc cgc aag acg ctg ttt gtg Glu Asn Leu Trp Ala Ser Val Tyr Gly Ser Arg Lys Thr Leu Phe Val 225 230 235 240	720
ctg gcc cac acg gac cgg gtc agt ggt ctc ttg cgc gcc agc ttc ctg Leu Ala His Thr Asp Arg Val Ser Gly Leu Leu Arg Ala Ser Phe Leu 245 250 255	768
ctg gcc cag cag cgc ctg ctg gag gac cgc aag gac gtc gtg gtg ctg Leu Ala Gln Gln Arg Leu Leu Glu Asp Arg Lys Asp Val Val Val Leu 260 265 270	816
gtg atc ctg agc cct gac ggc cgc cgc tcc cgc tac gag cgg ctg cgc Val Ile Leu Ser Pro Asp Gly Arg Arg Ser Arg Tyr Glu Arg Leu Arg 275 280 285	864
cag cgc ctc tgc cgc cag agt gtc ctc tgg ccc cac cag ccc agt Gln Arg Leu Cys Arg Gln Ser Val Leu Leu Trp Pro His Gln Pro Ser 290 295 300	912
ggt cag cgc agc ttc tgg gcc cag ctg ggc atg gcc ctg acc agg gac Gly Gln Arg Ser Phe Trp Ala Gln Leu Gly Met Ala Leu Thr Arg Asp 305 310 315 320	960
aac cac cac ttc tat aac cgg aac ttc tgc cag gga ccc acg gcc gaa Asn His His Phe Tyr Asn Arg Asn Phe Cys Gln Gly Pro Thr Ala Glu 325 330 335	1008
tagccgtgag ccgaaatcct gcacggtgcc acctccacac tcacctoacc tctgcctgcc	1068

tggctgacc ctccctgct cgccctccctc accccacacc tgacacagag caggcactca 1128
ataaatgcta ccgaaggcta aaaaaaaaaa aaaaaaaaaa aacca 1173

<210> 34
<211> 336
<212> PRT
<213> Homo sapiens

<400> 34

Leu Pro Ala Gly Thr Arg Leu Arg Arg Leu Asp Val Ser Cys Asn Ser
1 5 10 15

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

Glu Leu Asn Leu Ser Ala Asn Ala Leu Lys Thr Val Asp His Ser Trp
35 40 45

Phe Gly Pro Leu Ala Ser Ala Leu Gln Ile Leu Asp Val Ser Ala Asn
50 55 60

Pro Leu His Cys Ala Cys Gly Ala Ala Phe Met Asp Phe Leu Leu Glu
65 70 75 80

Val Gln Ala Ala Val Pro Gly Leu Pro Ser Arg Val Lys Cys Gly Ser
85 90 95

Pro Gly Gln Leu Gln Gly Leu Ser Ile Phe Ala Gln Asp Leu Arg Leu
100 105 110

Cys Leu Asp Glu Ala Leu Ser Trp Asp Cys Phe Ala Leu Ser Leu Leu
115 120 125

Ala Val Ala Leu Gly Leu Gly Val Pro Met Leu His His Leu Cys Gly
130 135 140

Trp Asp Leu Trp Tyr Cys Phe His Leu Cys Leu Ala Trp Leu Pro Trp
145 150 155 160

Arg Gly Arg Gln Ser Gly Arg Asp Glu Asp Ala Leu Pro Tyr Asp Ala

165

170

175

Phe Val Val Phe Asp Lys Thr Gln Ser Ala Val Ala Asp Trp Val Tyr
180 185 190

Asn Glu Leu Arg Gly Gln Leu Glu Glu Cys Arg Gly Arg Trp Ala Leu
195 200 205

Arg Leu Cys Leu Glu Glu Arg Asp Trp Leu Pro Gly Lys Thr Leu Phe
210 215 220

Glu Asn Leu Trp Ala Ser Val Tyr Gly Ser Arg Lys Thr Leu Phe Val
225 230 235 240

Leu Ala His Thr Asp Arg Val Ser Gly Leu Leu Arg Ala Ser Phe Leu
245 250 255

Leu Ala Gln Gln Arg Leu Leu Glu Asp Arg Lys Asp Val Val Val Leu
260 265 270

Val Ile Leu Ser Pro Asp Gly Arg Arg Ser Arg Tyr Glu Arg Leu Arg
275 280 285

Gln Arg Leu Cys Arg Gln Ser Val Leu Leu Trp Pro His Gln Pro Ser
290 295 300

Gly Gln Arg Ser Phe Trp Ala Gln Leu Gly Met Ala Leu Thr Arg Asp
305 310 315 320

Asn His His Phe Tyr Asn Arg Asn Phe Cys Gln Gly Pro Thr Ala Glu
325 330 335

<210> 35

<211> 497

<212> DNA

<213> Mus musculus

<400> 35

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cgtcccccta tgtgcgactg cgccagcgtc tctgcccca gagtggtctc ttctggcccc 180

agcgacccaa cgggcagggg ggcttctggg cccagctgag tacagccctg actagggaca	240
accgccactt ctataaccag aacttctgcc ggggacctac agcagaatag ctcagagcaa	300
cagctggaaa cagctgcatt ttcatgtctg gttcccagt tgctctgcct gccttgctct	360
gtcttactac accgctattt ggcaagtgcg caatatatgc taccaagcca ccaggccac	420
ggagcaaagg ttggctgtaa aggtagttt tcttccatg cattttcag gagagtgaag	480
atagacacca aaccac	497

<210> 36
<211> 3099
<212> DNA
<213> Homo sapiens

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<222> (1)..(3096)

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-15 -10 -5

gcc gaa gaa aat ttt tct aga agc tat cct tgt gat gag aaa aag caa 96
Ala Glu Glu Asn Phe Ser Arg Ser Tyr Pro Cys Asp Glu Lys Lys Gln
-1 1 5 10 15

aat gac tca gtt att gca gag tgc agc aat cgt cga cta cag gaa gtt 144
Asn Asp Ser Val Ile Ala Glu Cys Ser Asn Arg Arg Leu Gln Glu Val
20 25 30

ccc caa acg gtg ggc aaa tat gtg aca gaa cta gac ctg tct gat aat 192
Pro Gln Thr Val Gly Lys Tyr Val Thr Glu Leu Asp Leu Ser Asp Asn
35 40 45

ttc atc aca cac ata acg aat gaa tca ttt caa ggg ctg caa aat ctc 240
Phe Ile Thr His Ile Thr Asn Glu Ser Phe Gln Gly Leu Gln Asn Leu
50 55 60

act aaa ata aat cta aac cac aac ccc aat gta cag cac cag aac gga 288
Thr Lys Ile Asn Leu Asn His Asn Pro Asn Val Gln His Gln Asn Gly
65 70 75

aat ccc ggt ata caa tca aat ggc ttg aat atc aca gac ggg gca ttc 336

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

Thr Asn Asn Arg Leu Asp Phe Asp Asn Ala Ser Ala Leu Thr Glu Leu			
515	520	525	
tcc gac ttg gaa gtt cta gat ctc agc tat aat tca cac tat ttc aga			1680
Ser Asp Leu Glu Val Leu Asp Leu Ser Tyr Asn Ser His Tyr Phe Arg			
530	535	540	
ata gca ggc gta aca cat cat cta gaa ttt att caa aat ttc aca aat			1728
Ile Ala Gly Val Thr His His Leu Glu Phe Ile Gln Asn Phe Thr Asn			
545	550	555	
cta aaa gtt tta aac ttg agc cac aac aac att tat act tta aca gat			1776
Leu Lys Val Leu Asn Leu Ser His Asn Asn Ile Tyr Thr Leu Thr Asp			
560	565	570	575
aag tat aac ctg gaa aag tcc ctg gta gaa tta gtt ttc agt ggc			1824
Lys Tyr Asn Leu Glu Ser Lys Ser Leu Val Glu Leu Val Phe Ser Gly			
580	585	590	
aat cgc ctt gac att ttg tgg aat gat gat gac aac agg tat atc tcc			1872
Asn Arg Leu Asp Ile Leu Trp Asn Asp Asp Asn Arg Tyr Ile Ser			
595	600	605	
att ttc aaa ggt ctc aag aat ctg aca cgt ctg gat tta tcc ctt aat			1920
Ile Phe Lys Gly Leu Lys Asn Leu Thr Arg Leu Asp Leu Ser Leu Asn			
610	615	620	
agg ctc aag cac atc cca aat gaa gca ttc ctt aat ttg cca gcg agt			1968
Arg Leu Lys His Ile Pro Asn Glu Ala Phe Leu Asn Leu Pro Ala Ser			
625	630	635	
ctc act gaa cta cat ata aat gat aat atg tta aag ttt ttt aac tgg			2016
Leu Thr Glu Leu His Ile Asn Asp Asn Met Leu Lys Phe Phe Asn Trp			
640	645	650	655
aca tta ctc cag cag ttt cct cgt ctc gag ttg ctt gac tta cgt gga			2064
Thr Leu Leu Gln Gln Phe Pro Arg Leu Glu Leu Leu Asp Leu Arg Gly			
660	665	670	
aac aaa cta ctc ttt tta act gat agc cta tct gac ttt aca tct tcc			2112
Asn Lys Leu Leu Phe Leu Thr Asp Ser Leu Ser Asp Phe Thr Ser Ser			
675	680	685	
ctt cgg aca ctg ctg ctg agt cat aac agg att tcc cac cta ccc tct			2160
Leu Arg Thr Leu Leu Leu Ser His Asn Arg Ile Ser His Leu Pro Ser			
690	695	700	
ggc ttt ctt tct gaa gtc agt agt ctg aag cac ctc gat tta agt tcc			2208
Gly Phe Leu Ser Glu Val Ser Ser Leu Lys His Leu Asp Leu Ser Ser			
705	710	715	
aat ctg cta aaa aca atm aac aaa tcc gca ctt gaa act aag acc acc			2256
Asn Leu Leu Lys Thr Xaa Asn Lys Ser Ala Leu Glu Thr Lys Thr Thr			
720	725	730	735

acc aaa tta tct atg ttg gaa cta cac gga aac ccc ttt gaa tgc acc Thr Lys Leu Ser Met Leu Glu Leu His Gly Asn Pro Phe Glu Cys Thr 740 745 750	2304
tgt gac att gga gat ttc cga aga tgg atg gat gaa cat ctg aat gtc Cys Asp Ile Gly Asp Phe Arg Arg Trp Met Asp Glu His Leu Asn Val 755 760 765	2352
aaa att ccc aga ctg gta gat gtc att tgt gcc agt cct ggg gat caa Lys Ile Pro Arg Leu Val Asp Val Ile Cys Ala Ser Pro Gly Asp Gln 770 775 780	2400
aga ggg aag agt att gtg agt ctg gag cta aca act tgt gtt tca gat Arg Gly Lys Ser Ile Val Ser Leu Glu Leu Thr Thr Cys Val Ser Asp 785 790 795	2448
gtc act gca gtg ata tta ttt ttc acg ttc ttt atc acc acc acc atg Val Thr Ala Val Ile Leu Phe Phe Thr Phe Phe Ile Thr Thr Met 800 805 810 815	2496
gtt atg ttg gct gcc ctg gct cac cat ttg ttt tac tgg gat gtt tgg Val Met Leu Ala Ala Leu Ala His His Leu Phe Tyr Trp Asp Val Trp 820 825 830	2544
ttt ata tat aat gtg tgt tta gct aag tta aaa ggc tac agg tct ctt Phe Ile Tyr Asn Val Cys Leu Ala Lys Leu Lys Gly Tyr Arg Ser Leu 835 840 845	2592
tcc aca tcc caa act ttc tat gat gct tac att tct tat gac acc aaa Ser Thr Ser Gln Thr Phe Tyr Asp Ala Tyr Ile Ser Tyr Asp Thr Lys 850 855 860	2640
gat gcc tct gtt act gac tgg gtg ata aat gag ctg cgc tac cac ctt Asp Ala Ser Val Thr Asp Trp Val Ile Asn Glu Leu Arg Tyr His Leu 865 870 875	2688
gaa gag agc cga gac aaa aac gtt ctc ctt tgt cta gag gag agg gat Glu Glu Ser Arg Asp Lys Asn Val Leu Leu Cys Leu Glu Glu Arg Asp 880 885 890 895	2736
tgg gac ccg gga ttg gcc atc atc gac aac ctc atg cag agc atc aac Trp Asp Pro Gly Leu Ala Ile Ile Asp Asn Leu Met Gln Ser Ile Asn 900 905 910	2784
caa agc aag aaa aca gta ttt gtt tta acc aaa aaa tat gca aaa agc Gln Ser Lys Lys Thr Val Phe Val Leu Thr Lys Lys Tyr Ala Lys Ser 915 920 925	2832
tgg aac ttt aaa aca gct ttt tac ttg gcc ttg cag agg cta atg ggt Trp Asn Phe Lys Thr Ala Phe Tyr Leu Ala Leu Gln Arg Leu Met Gly 930 935 940	2880
gag aac atg gat gtg att ata ttt atc ctg ctg gag cca gtg tta cag	2928

Asn Pro Gly Ile Gln Ser Asn Gly Leu Asn Ile Thr Asp Gly Ala Phe
80 85 90 95

Leu Asn Leu Lys Asn Leu Arg Glu Leu Leu Glu Asp Asn Gln Leu
100 105 110

Pro Gln Ile Pro Ser Gly Leu Pro Glu Ser Leu Thr Glu Leu Ser Leu
115 120 125

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

Ile Asn Leu Lys Asn Leu Tyr Leu Ala Trp Asn Cys Tyr Phe Asn Lys
145 150 155

Val Cys Glu Lys Thr Asn Ile Glu Asp Gly Val Phe Glu Thr Leu Thr
160 165 170 175

Asn Leu Glu Leu Leu Ser Leu Ser Phe Asn Ser Leu Ser His Val Pro
180 185 190

Pro Lys Leu Pro Ser Ser Leu Arg Lys Leu Phe Leu Ser Asn Thr Gln
195 200 205

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

Leu Leu Asp Leu Ser Gly Asn Cys Pro Arg Cys Phe Asn Ala Pro Phe
225 230 235

Pro Cys Val Pro Cys Asp Gly Gly Ala Ser Ile Asn Ile Asp Arg Phe
240 245 250 255

Ala Phe Gln Asn Leu Thr Gln Leu Arg Tyr Leu Asn Leu Ser Ser Thr
260 265 270

Ser Leu Arg Lys Ile Asn Ala Ala Trp Phe Lys Asn Met Pro His Leu
275 280 285

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

Gly Ala Phe Leu Thr Met Leu Pro Arg Leu Glu Ile Leu Asp Leu Ser
305 310 315

Phe Asn Tyr Ile Lys Gly Ser Tyr Pro Gln His Ile Asn Ile Ser Arg
320 325 330 335

Asn Phe Ser Lys Leu Leu Ser Leu Arg Ala Leu His Leu Arg Gly Tyr
340 345 350

Val Phe Gln Glu Leu Arg Glu Asp Asp Phe Gln Pro Leu Met Gln Leu
355 360 365

Pro Asn Leu Ser Thr Ile Asn Leu Gly Ile Asn Phe Ile Lys Gln Ile
370 375 380

Asp Phe Lys Leu Phe Gln Asn Phe Ser Asn Leu Glu Ile Ile Tyr Leu
385 390 395

Ser Glu Asn Arg Ile Ser Pro Leu Val Lys Asp Thr Arg Gln Ser Tyr
400 405 410 415

Ala Asn Ser Ser Ser Phe Gln Arg His Ile Arg Lys Arg Arg Ser Thr
420 425 430

Asp Phe Glu Phe Asp Pro His Ser Asn Phe Tyr His Phe Thr Arg Pro
435 440 445

Leu Ile Lys Pro Gln Cys Ala Ala Tyr Gly Lys Ala Leu Asp Leu Ser
450 455 460

Leu Asn Ser Ile Phe Phe Ile Gly Pro Asn Gln Phe Glu Asn Leu Pro
465 470 475

Asp Ile Ala Cys Leu Asn Leu Ser Ala Asn Ser Asn Ala Gln Val Leu
480 485 490 495

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

500

505

510

Thr Asn Asn Arg Leu Asp Phe Asp Asn Ala Ser Ala Leu Thr Glu Leu
515 520 525

Ser Asp Leu Glu Val Leu Asp Leu Ser Tyr Asn Ser His Tyr Phe Arg
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Ile Ala Gly Val Thr His His Leu Glu Phe Ile Gln Asn Phe Thr Asn
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Leu Lys Val Leu Asn Leu Ser His Asn Asn Ile Tyr Thr Leu Thr Asp
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Asn Arg Leu Asp Ile Leu Trp Asn Asp Asp Asn Arg Tyr Ile Ser
595 600 605

Ile Phe Lys Gly Leu Lys Asn Leu Thr Arg Leu Asp Leu Ser Leu Asn
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Asn Lys Leu Leu Phe Leu Thr Asp Ser Leu Ser Asp Phe Thr Ser Ser
675 680 685

Leu Arg Thr Leu Leu Leu Ser His Asn Arg Ile Ser His Leu Pro Ser
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Gly Phe Leu Ser Glu Val Ser Ser Leu Lys His Leu Asp Leu Ser Ser
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Asn Leu Leu Lys Thr Xaa Asn Lys Ser Ala Leu Glu Thr Lys Thr Thr
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Cys Asp Ile Gly Asp Phe Arg Arg Trp Met Asp Glu His Leu Asn Val
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Lys Ile Pro Arg Leu Val Asp Val Ile Cys Ala Ser Pro Gly Asp Gln
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Arg Gly Lys Ser Ile Val Ser Leu Glu Leu Thr Thr Cys Val Ser Asp
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Val Thr Ala Val Ile Leu Phe Phe Phe Thr Phe Phe Ile Thr Thr Met
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Val Met Leu Ala Ala Leu Ala His His Leu Phe Tyr Trp Asp Val Trp
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Phe Ile Tyr Asn Val Cys Leu Ala Lys Leu Lys Gly Tyr Arg Ser Leu
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Ser Thr Ser Gln Thr Phe Tyr Asp Ala Tyr Ile Ser Tyr Asp Thr Lys
850 855 860

Asp Ala Ser Val Thr Asp Trp Val Ile Asn Glu Leu Arg Tyr His Leu
865 870 875

Glu Glu Ser Arg Asp Lys Asn Val Leu Leu Cys Leu Glu Glu Arg Asp
880 885 890 895

Trp Asp Pro Gly Leu Ala Ile Ile Asp Asn Leu Met Gln Ser Ile Asn
900 905 910

Gln Ser Lys Lys Thr Val Phe Val Leu Thr Lys Lys Tyr Ala Lys Ser
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Trp Asn Phe Lys Thr Ala Phe Tyr Leu Ala Leu Gln Arg Leu Met Gly

930 935 940

Glu Asn Met Asp Val Ile Ile Phe Ile Leu Leu Glu Pro Val Leu Gln
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His Ser Pro Tyr Leu Arg Leu Arg Gln Arg Ile Cys Lys Ser Ser Ile
960 965 970 975

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Met Arg

ctc atc aga aac att tac ata ttt tgt agt att gtt atg aca gca gag 164
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Gly Asp Ala Pro Glu Leu Pro Glu Glu Arg Glu Leu Met Thr Asn Cys
-1 1 5 10 15

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Thr	Thr	Leu	Asp	Leu	Ser	Tyr	Asn	Leu	Leu	Phe	Gln	Leu	Gln	Ser	Ser
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gat	ttt	cat	tct	gtc	tcc	aaa	ctg	aga	gtt	ttg	att	cta	tgc	cat	aac
Asp	Phe	His	Ser	Val	Ser	Lys	Leu	Arg	Val	Leu	Ile	Leu	Cys	His	Asn
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Arg	Ile	Gln	Gln	Leu	Asp	Leu	Lys	Thr	Phe	Glu	Phe	Asn	Lys	Glu	Leu
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Arg	Tyr	Leu	Asp	Leu	Ser	Asn	Asn	Arg	Leu	Lys	Ser	Val	Thr	Trp	Tyr
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Leu	Leu	Ala	Gly	Leu	Arg	Tyr	Leu	Asp	Leu	Ser	Phe	Asn	Asp	Phe	Asp
		100			105				110						
acc	atg	cct	atc	tgt	gag	gaa	gct	ggc	aac	atg	tca	cac	ctg	gaa	atc
Thr	Met	Pro	Ile	Cys	Glu	Glu	Ala	Gly	Asn	Met	Ser	His	Leu	Glu	Ile
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cta	ggt	ttg	agt	ggg	gca	aaa	ata	caa	aaa	tca	gat	ttc	cag	aaa	att
Leu	Gly	Leu	Ser	Gly	Ala	Lys	Ile	Gln	Lys	Ser	Asp	Phe	Gln	Lys	Ile
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gct	cat	ctg	cat	cta	aat	act	gtc	ttc	tta	gga	ttc	aga	act	ctt	cct
Ala	His	Leu	His	Leu	Asn	Thr	Val	Phe	Leu	Gly	Phe	Arg	Thr	Leu	Pro
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cat	tat	gaa	gaa	ggt	agc	ctg	ccc	atc	tta	aac	aca	aca	aaa	ctg	cac
His	Tyr	Glu	Glu	Gly	Ser	Leu	Pro	Ile	Leu	Asn	Thr	Thr	Lys	Leu	His
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att	gtt	tta	cca	atg	gac	aca	aat	ttc	tgg	gtt	ctt	ttg	cgt	gat	gga
Ile	Val	Leu	Pro	Met	Asp	Thr	Asn	Phe	Trp	Val	Leu	Leu	Arg	Asp	Gly
		180			185				190						
atc	aag	act	tca	aaa	ata	tta	gaa	atg	aca	aat	ata	gat	ggc	aaa	agc
Ile	Lys	Thr	Ser	Lys	Ile	Leu	Glu	Met	Thr	Asn	Ile	Asp	Gly	Lys	Ser
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caa	ttt	gta	agt	tat	gaa	atg	caa	cga	aat	ctt	agt	tta	gaa	aat	gct
Gln	Phe	Val	Ser	Tyr	Glu	Met	Gln	Arg	Asn	Leu	Ser	Leu	Glu	Asn	Ala
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Lys	Thr	Ser	Val	Leu	Leu	Leu	Asn	Lys	Val	Asp	Leu	Leu	Trp	Asp	Asp
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Leu Phe Leu Ile Leu Gln Phe Val Trp His Thr Ser Val Glu His Phe			
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cag atc cga aat gtg act ttt ggt ggt aag gct tat ctt gac cac aat			980
Gln Ile Arg Asn Val Thr Phe Gly Gly Lys Ala Tyr Leu Asp His Asn			
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tca ttt gac tac tca aat act gta atg aga act ata aaa ttg gag cat			1028
Ser Phe Asp Tyr Ser Asn Thr Val Met Arg Thr Ile Lys Leu Glu His			
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gta cat ttc aga gtg ttt tac att caa cag gat aaa atc tat ttg ctt			1076
Val His Phe Arg Val Phe Tyr Ile Gln Gln Asp Lys Ile Tyr Leu Leu			
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ttg acc aaa atg gac ata gaa aac ctg aca ata tca aat gca caa atg			1124
Leu Thr Lys Met Asp Ile Glu Asn Leu Thr Ile Ser Asn Ala Gln Met			
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cca cac atg ctt ttc ccg aat tat cct acg aaa ttc caa tat tta aat			1172
Pro His Met Leu Phe Pro Asn Tyr Pro Thr Lys Phe Gln Tyr Leu Asn			
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ttt gcc aat aat atc tta aca gac gag ttg ttt aaa aga act atc caa			1220
Phe Ala Asn Asn Ile Leu Thr Asp Glu Leu Phe Lys Arg Thr Ile Gln			
340	345	350	
ctg cct cac ttg aaa act ctc att ttg aat ggc aat aaa ctg gag aca			1268
Leu Pro His Leu Lys Thr Leu Ile Leu Asn Gly Asn Lys Leu Glu Thr			
355	360	365	
ctt tct tta gta agt tgc ttt gct aac aac aca ccc ttg gaa cac ttg			1316
Leu Ser Leu Val Ser Cys Phe Ala Asn Asn Thr Pro Leu Glu His Leu			
370	375	380	
gat ctg agt caa aat cta tta caa cat aaa aat gat gaa aat tgc tca			1364
Asp Leu Ser Gln Asn Leu Leu Gln His Lys Asn Asp Glu Asn Cys Ser			
385	390	395	
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Trp Pro Glu Thr Val Val Asn Met Asn Leu Ser Tyr Asn Lys Leu Ser			
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gat tct gtc ttc agg tgc ttg ccc aaa agt att caa ata ctt gac cta			1460
Asp Ser Val Phe Arg Cys Leu Pro Lys Ser Ile Gln Ile Leu Asp Leu			
420	425	430	
aat aat aac caa atc caa act gta cct aaa gag act att cat ctg atg			1508
Asn Asn Asn Gln Ile Gln Thr Val Pro Lys Glu Thr Ile His Leu Met			
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gcc tta cga gaa cta aat att gca ttt aat ttt cta act gat ctc cct Ala Leu Arg Glu Leu Asn Ile Ala Phe Asn Phe Leu Thr Asp Leu Pro 450 455 460	1556
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aaa act cta aat gcg gga aga aat cca ttc cggttgt acc tgt gaa tta Lys Thr Leu Asn Ala Gly Arg Asn Pro Phe Arg Cys Thr Cys Glu Leu 500 505 510	1700
aaa aat ttc att cag ctt gaa aca tat tca gag gtc atg atg gtt gga Lys Asn Phe Ile Gln Leu Glu Thr Tyr Ser Glu Val Met Met Val Gly 515 520 525	1748
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cat gat tct ctg tgg gtg aag aat gaa ttg atc ccc aat cta gag aag His Asp Ser Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu Glu Lys 625 630 635	2084
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ggc aaa agc att agt gaa aat att gta agc ttc att gag aaa agc tat	2180

Gly Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys Ser Tyr		
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Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu Trp Cys		
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cat tat gaa ttc tac ttt gcc cac cac aat ctc ttc cat gaa aat tot		2276
His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu Asn Ser		
690	695	700
gat cat ata att ctt atc tta ctg gaa ccc att cca ttc tat tgc att		2324
Asp His Ile Ile Leu Ile Leu Glu Pro Ile Pro Phe Tyr Cys Ile		
705	710	715
ccc acc agg tat cat aaa ctg aaa gct ctc ctg gaa aaa aaa gca tac		2372
Pro Thr Arg Tyr His Lys Leu Lys Ala Leu Leu Glu Lys Lys Ala Tyr		
720	725	730
735		
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Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly Leu Phe Trp Ala Asn		
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Leu Arg Ala Ala Ile Asn Val Asn Val Leu Ala Thr Arg Glu Met Tyr		
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Glu Leu Gln Thr Phe Thr Glu Leu Asn Glu Glu Ser Arg Gly Ser Thr		
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atc tct ctg atg aga aca gat tgt cta taaaatccca cagtccttgg		2563
Ile Ser Leu Met Arg Thr Asp Cys Leu		
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Ser Ser Asp Phe His Ser Val Ser Lys Leu Arg Val Leu Ile Leu Cys
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His Asn Arg Ile Gln Gln Leu Asp Leu Lys Thr Phe Glu Phe Asn Lys
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Trp Tyr Leu Leu Ala Gly Leu Arg Tyr Leu Asp Leu Ser Phe Asn Asp
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Glu His Val His Phe Arg Val Phe Tyr Ile Gln Gln Asp Lys Ile Tyr
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Gln Met Pro His Met Leu Phe Pro Asn Tyr Pro Thr Lys Phe Gln Tyr
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Glu Thr Leu Ser Leu Val Ser Cys Phe Ala Asn Asn Thr Pro Leu Glu
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His Leu Asp Leu Ser Gln Asn Leu Leu Gln His Lys Asn Asp Glu Asn
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Cys Ser Trp Pro Glu Thr Val Val Asn Met Asn Leu Ser Tyr Asn Lys
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Met Asn Phe Ile Leu Ser Pro Ser Leu Asp Phe Val Gln Ser Cys Gln
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Glu Val Lys Thr Leu Asn Ala Gly Arg Asn Pro Phe Arg Cys Thr Cys
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Val Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr Pro Leu Asn Leu Arg
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590 595 600 605

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

Ser Glu His Asp Ser Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu
625 630 635

Glu Lys Glu Asp Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe
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Asp Pro Gly Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys
655 660 665

Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu
670 675 680 685

Trp Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu
690 695 700

Asn Ser Asp His Ile Ile Leu Ile Leu Leu Glu Pro Ile Pro Phe Tyr
705 710 715

Cys Ile Pro Thr Arg Tyr His Lys Leu Lys Ala Leu Leu Glu Lys Lys
720 725 730

Ala Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly Leu Phe Trp
735 740 745

Ala Asn Leu Arg Ala Ala Ile Asn Val Asn Val Leu Ala Thr Arg Glu
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Val Cys Leu Met Ile Ile Val Gly Thr Arg Ile Gln Phe Ser Asp
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tac atc gct gag ctt cag gtc tct gac atg agc ttt cta tca gag ttg 301
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gtt ttc aag ttc aac cag gat tta gaa tat ttg gat tta tct cat aat 397
Val Phe Lys Phe Asn Gln Asp Leu Glu Tyr Leu Asp Leu Ser His Asn
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cag ttg caa aag ata tcc tgc cat cct att gtg agt ttc agg cat tta 445
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aca ata att gaa agc att cgt gaa gaa gat ttt act tat tct aaa acg Thr Ile Ile Glu Ser Ile Arg Glu Glu Asp Phe Thr Tyr Ser Lys Thr 260 265 270	973
aca ttg aaa gca ttg aca ata gaa cat atc acg aac caa gtt ttt ctg Thr Leu Lys Ala Leu Thr Ile Glu His Ile Thr Asn Gln Val Phe Leu 275 280 285	1021
ttt tca cag aca gct ttg tac acc gtg ttt tct gag atg aac att atg Phe Ser Gln Thr Ala Leu Tyr Thr Val Phe Ser Glu Met Asn Ile Met 290 295 300	1069
atg tta acc att tca gat aca cct ttt ata cac atg ctg tgt cct cat Met Leu Thr Ile Ser Asp Thr Pro Phe Ile His Met Leu Cys Pro His 305 310 315	1117
gca cca agc aca ttc aag ttt ttg aac ttt acc cag aac gtt ttc aca	1165

Ala Pro Ser Thr Phe Lys Phe Leu Asn Phe Thr Gln Asn Val Phe Thr	320	325	330	335	
gat agt att ttt gaa aaa tgt tcc acg tta gtt aaa ttg gag aca ctt					1213
Asp Ser Ile Phe Glu Lys Cys Ser Thr Leu Val Lys Leu Glu Thr Leu					
340	345	350			
atc tta caa aag aat gga tta aaa gac ctt ttc aaa gta ggt ctc atg					1261
Ile Leu Gln Lys Asn Gly Leu Lys Asp Leu Phe Lys Val Gly Leu Met					
355	360	365			
acg aag gat atg cct tct ttg gaa ata ctg gat gtt agc tgg aat tct					1309
Thr Lys Asp Met Pro Ser Leu Glu Ile Leu Asp Val Ser Trp Asn Ser					
370	375	380			
ttg gaa tct ggt aga cat aaa gaa aac tgc act tgg gtt gag agt ata					1357
Leu Glu Ser Gly Arg His Lys Glu Asn Cys Thr Trp Val Glu Ser Ile					
385	390	395			
gtg gtg tta aat ttg tct tca aat atg ctt act gac tct gtt ttc aga					1405
Val Val Leu Asn Leu Ser Ser Asn Met Leu Thr Asp Ser Val Phe Arg					
400	405	410			
tgt tta cct ccc agg atc aag gta ctt gat ctt cac agc aat aaa ata					1453
Cys Leu Pro Pro Arg Ile Lys Val Leu Asp Leu His Ser Asn Lys Ile					
420	425	430			
aag agc gtt cct aaa caa gtc gta aaa ctg gaa gct ttg caa gaa ctc					1501
Lys Ser Val Pro Lys Gln Val Val Lys Leu Glu Ala Leu Gln Glu Leu					
435	440	445			
aat gtt gct ttc aat tct tta act gac ctt cct gga tgt ggc agc ttt					1549
Asn Val Ala Phe Asn Ser Leu Thr Asp Leu Pro Gly Cys Gly Ser Phe					
450	455	460			
agc agc ctt tct gta ttg atc att gat cac aat tca gtt tcc cac cca					1597
Ser Ser Leu Ser Val Leu Ile Ile Asp His Asn Ser Val Ser His Pro					
465	470	475			
tcg gct gat ttc ttc cag agc tgc cag aag atg agg tca ata aaa gca					1645
Ser Ala Asp Phe Phe Gln Ser Cys Gln Lys Met Arg Ser Ile Lys Ala					
480	485	490			
500	505	510			
ggg gac aat cca ttc caa tgt acc tgt gag cta aga gaa ttt gtc aaa					1693
Gly Asp Asn Pro Phe Gln Cys Thr Cys Glu Leu Arg Glu Phe Val Lys					
500	505	510			
aat ata gac caa gta tca agt gaa gtg tta gag ggc tgg cct gat tct					1741
Asn Ile Asp Gln Val Ser Ser Glu Val Leu Glu Gly Trp Pro Asp Ser					
515	520	525			
tat aag tgt gac tac cca gaa agt tat aga gga agc cca cta aag gac					1789
Tyr Lys Cys Asp Tyr Pro Glu Ser Tyr Arg Gly Ser Pro Leu Lys Asp					

530	535	540	
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atc ggt gcc acc atg ctg gtg ttg gct gtg act gtg acc tcc ctc tgc Ile Gly Ala Thr Met Leu Val Leu Ala Val Thr Val Thr Ser Leu Cys 560	565	570	1885
atc tac ttg gat ctg ccc tgg tat ctc agg atg gtg tgc cag tgg acc Ile Tyr Leu Asp Leu Pro Trp Tyr Leu Arg Met Val Cys Gln Trp Thr 580	585	590	1933
cag act cgg cgc agg gcc agg aac ata ccc tta gaa gaa ctc caa aga Gln Thr Arg Arg Ala Arg Asn Ile Pro Leu Glu Glu Leu Gln Arg 595	600	605	1981
aac ctc cag ttt cat gct ttt att tca tat agt gaa cat gat tct gcc Asn Leu Gln Phe His Ala Phe Ile Ser Tyr Ser Glu His Asp Ser Ala 610	615	620	2029
tgg gtg aaa agt gaa ttg gta cct tac cta gaa aaa gaa gat ata cag Trp Val Lys Ser Glu Leu Val Pro Tyr Leu Glu Lys Glu Asp Ile Gln 625	630	635	2077
att tgt ctt cat gag agg aac ttt gtc cct ggc aag agc att gtg gaa Ile Cys Leu His Glu Arg Asn Phe Val Pro Gly Lys Ser Ile Val Glu 640	645	650	2125
aat atc atc aac tgc att gag aag agt tac aag tcc atc ttt gtt ttg Asn Ile Ile Asn Cys Ile Glu Lys Ser Tyr Lys Ser Ile Phe Val Leu 660	665	670	2173
tct ccc aac ttt gtc cag agt gag tgg tgc cat tac gaa ctc tat ttt Ser Pro Asn Phe Val Gln Ser Glu Trp Cys His Tyr Glu Leu Tyr Phe 675	680	685	2221
gcc cat cac aat ctc ttt cat gaa gga tct aat aac tta atc ctc atc Ala His His Asn Leu Phe His Glu Gly Ser Asn Asn Leu Ile Leu Ile 690	695	700	2269
tta ctg gaa ccc att cca cag aac agc att ccc aac aag tac cac aag Leu Leu Glu Pro Ile Pro Gln Asn Ser Ile Pro Asn Lys Tyr His Lys 705	710	715	2317
ctg aag gct ctc atg acg cag cggt act tat ttg cag tgg ccc aag gag Leu Lys Ala Leu Met Thr Gln Arg Thr Tyr Leu Gln Trp Pro Lys Glu 720	725	730	2365
aaa agc aaa cgt ggg ctc ttt tgg gct aac att aga gcc gct ttt aat Lys Ser Lys Arg Gly Leu Phe Trp Ala Asn Ile Arg Ala Ala Phe Asn 740	745	750	2413

atg aaa tta aca cta gtc act gaa aac aat gat gtg aaa tct	2455
Met Lys Leu Thr Leu Val Thr Glu Asn Asn Asp Val Lys Ser	
755 760 765	

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taacaaaaac aatgtttcat ctggggact gagctaggcg gtgaggtag cctgccagtt	2635
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Glu Phe Ala Val Asp Lys Ser Lys Arg Gly Leu Ile His Val Pro Lys
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Asp Leu Pro Leu Lys Thr Lys Val Leu Asp Met Ser Gln Asn Tyr Ile
20 25 30

Ala Glu Leu Gln Val Ser Asp Met Ser Phe Leu Ser Glu Leu Thr Val
35 40 45

Leu Arg Leu Ser His Asn Arg Ile Gln Leu Leu Asp Leu Ser Val Phe
50 55 60 65

Lys Phe Asn Gln Asp Leu Glu Tyr Leu Asp Leu Ser His Asn Gln Leu
70 75 80

Gln Lys Ile Ser Cys His Pro Ile Val Ser Phe Arg His Leu Asp Leu

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

Thr Ile Ser Asp Thr Pro Phe Ile His Met Leu Cys Pro His Ala Pro
310 315 320

Ser Thr Phe Lys Phe Leu Asn Phe Thr Gln Asn Val Phe Thr Asp Ser
325 330 335

Ile Phe Glu Lys Cys Ser Thr Leu Val Lys Leu Glu Thr Leu Ile Leu
340 345 350

Gln Lys Asn Gly Leu Lys Asp Leu Phe Lys Val Gly Leu Met Thr Lys
355 360 365

Asp Met Pro Ser Leu Glu Ile Leu Asp Val Ser Trp Asn Ser Leu Glu
370 375 380 385

Ser Gly Arg His Lys Glu Asn Cys Thr Trp Val Glu Ser Ile Val Val
390 395 400

Leu Asn Leu Ser Ser Asn Met Leu Thr Asp Ser Val Phe Arg Cys Leu
405 410 415

Pro Pro Arg Ile Lys Val Leu Asp Leu His Ser Asn Lys Ile Lys Ser
420 425 430

Val Pro Lys Gln Val Val Lys Leu Glu Ala Leu Gln Glu Leu Asn Val
435 440 445

Ala Phe Asn Ser Leu Thr Asp Leu Pro Gly Cys Gly Ser Phe Ser Ser
450 455 460 465

Leu Ser Val Leu Ile Ile Asp His Asn Ser Val Ser His Pro Ser Ala
470 475 480

Asp Phe Phe Gln Ser Cys Gln Lys Met Arg Ser Ile Lys Ala Gly Asp
485 490 495

Asn Pro Phe Gln Cys Thr Cys Glu Leu Arg Glu Phe Val Lys Asn Ile
500 505 510

Asp Gln Val Ser Ser Glu Val Leu Glu Gly Trp Pro Asp Ser Tyr Lys

515

520

525

Cys Asp Tyr Pro Glu Ser Tyr Arg Gly Ser Pro Leu Lys Asp Phe His
530 535 540 545

Met Ser Glu Leu Ser Cys Asn Ile Thr Leu Leu Ile Val Thr Ile Gly
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Ala Thr Met Leu Val Leu Ala Val Thr Val Thr Ser Leu Cys Ile Tyr
565 570 575

Leu Asp Leu Pro Trp Tyr Leu Arg Met Val Cys Gln Trp Thr Gln Thr
580 585 590

Arg Arg Arg Ala Arg Asn Ile Pro Leu Glu Glu Leu Gln Arg Asn Leu
595 600 605

Gln Phe His Ala Phe Ile Ser Tyr Ser Glu His Asp Ser Ala Trp Val
610 615 620 625

Lys Ser Glu Leu Val Pro Tyr Leu Glu Lys Glu Asp Ile Gln Ile Cys
630 635 640

Leu His Glu Arg Asn Phe Val Pro Gly Lys Ser Ile Val Glu Asn Ile
645 650 655

Ile Asn Cys Ile Glu Lys Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro
660 665 670

Asn Phe Val Gln Ser Glu Trp Cys His Tyr Glu Leu Tyr Phe Ala His
675 680 685

His Asn Leu Phe His Glu Gly Ser Asn Asn Leu Ile Leu Ile Leu Leu
690 695 700 705

Glu Pro Ile Pro Gln Asn Ser Ile Pro Asn Lys Tyr His Lys Leu Lys
710 715 720

Ala Leu Met Thr Gln Arg Thr Tyr Leu Gln Trp Pro Lys Glu Lys Ser
725 730 735

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His Thr Ala Leu Pro Pro Gln Gly Phe Cys Arg Ser Ala Leu His
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Pro Leu Ser Leu Leu Val Gln Ala Ile Met Leu Ala Met Thr Leu Ala
-15 -10 -5 -1

ctg ggt acc ttg cct gcc ttc cta ccc tgt gag ctc cag ccc cac ggc 192
Leu Gly Thr Leu Pro Ala Phe Leu Pro Cys Glu Leu Gln Pro His Gly
1 5 10 15

ctg gtg aac tgc aac tgg ctg ttc ctg aag tct gtg ccc cac ttc tcc 240
Leu Val Asn Cys Asn Trp Leu Phe Leu Lys Ser Val Pro His Phe Ser
20 25 30

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Met Ala Ala Pro Arg Gly Asn Val Thr Ser Leu Ser Leu Ser Ser Asn
35 40 45

cgc atc cac cac ctc cat gat tct gac ttt gcc cac ctg ccc agc ctg 336
Arg Ile His His Leu His Asp Ser Asp Phe Ala His Leu Pro Ser Leu
50 55 60

cgg cat ctc aac ctc aag tgg aac tgc ccg ccg gtt ggc ctc agc ccc 384
Arg His Leu Asn Leu Lys Trp Asn Cys Pro Pro Val Gly Leu Ser Pro

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cgc ttc cta ttc atg gac ggc aac tgt tat tac aag aac ccc tgc agg Arg Phe Leu Phe Met Asp Gly Asn Cys Tyr Tyr Lys Asn Pro Cys Arg 145 150 155 160				624
cag gca ctg gag gtg gcc ccg ggt gcc ctc ctt ggc ctg ggc aac ctc Gln Ala Leu Glu Val Ala Pro Gly Ala Leu Leu Gly Leu Gly Asn Leu 165 170 175				672
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Asp Leu Ser Glu Asn Phe Leu Tyr Lys Cys Ile Thr Lys Thr Lys Ala			
290	295	300	
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Phe Gln Gly Leu Thr Gln Leu Arg Lys Leu Asn Leu Ser Phe Asn Tyr			
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caa aag agg gtg tcc ttt gcc cac ctg tct ctg gcc cct tcc ttc ggg		1152	
Gln Lys Arg Val Ser Phe Ala His Leu Ser Leu Ala Pro Ser Phe Gly			
325	330	335	
agc ctg gtc gcc ctg aag gag ctg gac atg cac ggc atc ttc ttc cgc		1200	
Ser Leu Val Ala Leu Lys Glu Leu Asp Met His Gly Ile Phe Phe Arg			
340	345	350	
tca ctc gat gag acc acg ctc cg ^g cca ctg gcc cgc ctg ccc atg ctc		1248	
Ser Leu Asp Glu Thr Thr Leu Arg Pro Leu Ala Arg Leu Pro Met Leu			
355	360	365	
cag act ctg cgt ctg cag atg aac ttc atc aac cag gcc cag ctc ggc		1296	
Gln Thr Leu Arg Leu Gln Met Asn Phe Ile Asn Gln Ala Gln Leu Gly			
370	375	380	
atc ttc agg gcc ttc cct ggc ctg cgc tac gtg gac ctg tcg gac aac		1344	
Ile Phe Arg Ala Phe Pro Gly Leu Arg Tyr Val Asp Leu Ser Asp Asn			
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Arg Ile Ser Gly Ala Ser Glu Leu Thr Ala Thr Met Gly Glu Ala Asp			
405	410	415	
gga ggg gag aag gtc tgg ctg cag cct ggg gac ctt gct ccg gcc cca		1440	
Gly Gly Glu Lys Val Trp Leu Gln Pro Gly Asp Leu Ala Pro Ala Pro			
420	425	430	
gtg gac act ccc agc tct gaa gac ttc agg ccc aac tgc agc acc ctc		1488	
Val Asp Thr Pro Ser Ser Glu Asp Phe Arg Pro Asn Cys Ser Thr Leu			
435	440	445	
aac ttc acc ttg gat ctg tca cg ^g aac aac ctg gtg acc gtg cag ccg		1536	
Asn Phe Thr Leu Asp Leu Ser Arg Asn Asn Leu Val Thr Val Gln Pro			
450	455	460	
gag atg ttt gcc cag ctc tcg cac ctg cag tgc ctg cgc ctg agc cac		1584	
Glu Met Phe Ala Gln Leu Ser His Leu Gln Cys Leu Arg Leu Ser His			
465	470	475	480
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Asn Cys Ile Ser Gln Ala Val Asn Gly Ser Gln Phe Leu Pro Leu Thr			
485	490	495	
ggt ctg cag gtg cta gac ctg tcc cac aat aag ctg gac ctc tac cac		1680	
Gly Leu Gln Val Leu Asp Leu Ser His Asn Lys Leu Asp Leu Tyr His			

	500	505	510	
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515	520		525	
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530	535		540	
ttc gtg gct cac ctg cgc acc ctg cgc cac ctc agc ctg gcc cac aac Phe Val Ala His Leu Arg Thr Leu Arg His Leu Ser Leu Ala His Asn				1824
545	550		555	560
aac atc cac agc caa gtg tcc cag cag ctc tgc agt acg tcg ctg cgg Asn Ile His Ser Gln Val Ser Gln Gln Leu Cys Ser Thr Ser Leu Arg				1872
565	570		575	
gcc ctg gac ttc agc ggc aat gca ctg ggc cat atg tgg gcc gag gga Ala Leu Asp Phe Ser Gly Asn Ala Leu Gly His Met Trp Ala Glu Gly				1920
580	585		590	
gac ctc tat ctg cac ttc ttc caa ggc ctg agc ggt ttg atc tgg ctg Asp Leu Tyr Leu His Phe Phe Gln Gly Leu Ser Gly Leu Ile Trp Leu				1968
595	600		605	
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610	615		620	
aac ctc ccc aag agc cta cag gtg ctg cgt ctc cgt gac aat tac ctg Asn Leu Pro Lys Ser Leu Gln Val Leu Arg Leu Arg Asp Asn Tyr Leu				2064
625	630		635	640
gcc ttc ttt aag tgg tgg agc ctc cac ttc ctg ccc aaa ctg gaa gtc Ala Phe Phe Lys Trp Trp Ser Leu His Phe Leu Pro Lys Leu Glu Val				2112
645	650		655	
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660	665		670	
cct gct ggc acc cgg ctc cgg agg ctg gat gtc agc tgc aac agc atc Pro Ala Gly Thr Arg Leu Arg Arg Leu Asp Val Ser Cys Asn Ser Ile				2208
675	680		685	
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690	695		700	
ctc aac ctt agc gcc aac gcc ctc aag aca gtg gac cac tcc tgg ttt Leu Asn Leu Ser Ala Asn Ala Leu Lys Thr Val Asp His Ser Trp Phe				2304
705	710		715	720

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gac ctc tgg tac tgc ttc cac ctg tgc ctg gcc tgg ctt ccc tgg cgg Asp Leu Trp Tyr Cys Phe His Leu Cys Leu Ala Trp Leu Pro Trp Arg 820 825 830	2640
ggg cgg caa agt ggg cga gat gag gat gcc ctg ccc tac gat gcc ttc Gly Arg Gln Ser Gly Arg Asp Glu Asp Ala Leu Pro Tyr Asp Ala Phe 835 840 845	2688
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aac ctg tgg gcc tcg gtc tat ggc agc cgc aag acg ctg ttt gtg ctg Asn Leu Trp Ala Ser Val Tyr Gly Ser Arg Lys Thr Leu Phe Val Leu 900 905 910	2880
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930 935 940

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Ile Leu Ser Pro Asp Gly Arg Arg Ser Arg Tyr Val Arg Leu Arg Gln
945 950 955 960

3024

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965 970 975

3072

cag cgc agc ttc tgg gcc cag ctg ggc atg gcc ctg acc agg gac aac
Gln Arg Ser Phe Trp Ala Gln Leu Gly Met Ala Leu Thr Arg Asp Asn
980 985 990

3120

cac cac ttc tat aac cgg aac ttc tgc cag gga ccc acg gcc gaa tag
His His Phe Tyr Asn Arg Asn Phe Cys Gln Gly Pro Thr Ala Glu
995 1000 1005

3168

<210> 43
<211> 1055
<212> PRT
<213> Homo sapiens

<400> 43

Met Pro Met Lys Trp Ser Gly Trp Arg Trp Ser Trp Gly Pro Ala Thr
-45 -40 -35

His Thr Ala Leu Pro Pro Gln Gly Phe Cys Arg Ser Ala Leu His
-30 -25 -20

Pro Leu Ser Leu Leu Val Gln Ala Ile Met Leu Ala Met Thr Leu Ala
-15 -10 -5 -1

Leu Gly Thr Leu Pro Ala Phe Leu Pro Cys Glu Leu Gln Pro His Gly
1 5 10 15

Leu Val Asn Cys Asn Trp Leu Phe Leu Lys Ser Val Pro His Phe Ser
20 25 30

Met Ala Ala Pro Arg Gly Asn Val Thr Ser Leu Ser Leu Ser Ser Asn
35 40 45

Arg Ile His His Leu His Asp Ser Asp Phe Ala His Leu Pro Ser Leu
50 55 60

Arg His Leu Asn Leu Lys Trp Asn Cys Pro Pro Val Gly Leu Ser Pro
65 70 75 80

Met His Phe Pro Cys His Met Thr Ile Glu Pro Ser Thr Phe Leu Ala
85 90 95

Val Pro Thr Leu Glu Glu Leu Asn Leu Ser Tyr Asn Asn Ile Met Thr
100 105 110

Val Pro Ala Leu Pro Lys Ser Leu Ile Ser Leu Ser Leu Ser His Thr
115 120 125

Asn Ile Leu Met Leu Asp Ser Ala Ser Leu Ala Gly Leu His Ala Leu
130 135 140

Arg Phe Leu Phe Met Asp Gly Asn Cys Tyr Tyr Lys Asn Pro Cys Arg
145 150 155 160

Gln Ala Leu Glu Val Ala Pro Gly Ala Leu Leu Gly Leu Gly Asn Leu
165 170 175

Thr His Leu Ser Leu Lys Tyr Asn Asn Leu Thr Val Val Pro Arg Asn
180 185 190

Leu Pro Ser Ser Leu Glu Tyr Leu Leu Leu Ser Tyr Asn Arg Ile Val
195 200 205

Lys Leu Ala Pro Glu Asp Leu Ala Asn Leu Thr Ala Leu Arg Val Leu
210 215 220

Asp Val Gly Gly Asn Cys Arg Arg Cys Asp His Ala Pro Asn Pro Cys
225 230 235 240

Met Glu Cys Pro Arg His Phe Pro Gln Leu His Pro Asp Thr Phe Ser
245 250 255

His Leu Ser Arg Leu Glu Gly Leu Val Leu Lys Asp Ser Ser Leu Ser
260 265 270

Trp Leu Asn Ala Ser Trp Phe Arg Gly Leu Gly Asn Leu Arg Val Leu
275 280 285

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

Phe Gln Gly Leu Thr Gln Leu Arg Lys Leu Asn Leu Ser Phe Asn Tyr
305 310 315 320

Gln Lys Arg Val Ser Phe Ala His Leu Ser Leu Ala Pro Ser Phe Gly
325 330 335

Ser Leu Val Ala Leu Lys Glu Leu Asp Met His Gly Ile Phe Phe Arg
340 345 350

Ser Leu Asp Glu Thr Thr Leu Arg Pro Leu Ala Arg Leu Pro Met Leu
355 360 365

Gln Thr Leu Arg Leu Gln Met Asn Phe Ile Asn Gln Ala Gln Leu Gly
370 375 380

Ile Phe Arg Ala Phe Pro Gly Leu Arg Tyr Val Asp Leu Ser Asp Asn
385 390 395 400

Arg Ile Ser Gly Ala Ser Glu Leu Thr Ala Thr Met Gly Glu Ala Asp
405 410 415

Gly Gly Glu Lys Val Trp Leu Gln Pro Gly Asp Leu Ala Pro Ala Pro
420 425 430

Val Asp Thr Pro Ser Ser Glu Asp Phe Arg Pro Asn Cys Ser Thr Leu
435 440 445

Asn Phe Thr Leu Asp Leu Ser Arg Asn Asn Leu Val Thr Val Gln Pro
450 455 460

Glu Met Phe Ala Gln Leu Ser His Leu Gln Cys Leu Arg Leu Ser His
465 470 475 480

Asn Cys Ile Ser Gln Ala Val Asn Gly Ser Gln Phe Leu Pro Leu Thr
485 490 495

Gly Leu Gln Val Leu Asp Leu Ser His Asn Lys Leu Asp Leu Tyr His
500 505 510

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

Tyr Asn Ser Gln Pro Phe Gly Met Gln Gly Val Gly His Asn Phe Ser
530 535 540

Phe Val Ala His Leu Arg Thr Leu Arg His Leu Ser Leu Ala His Asn
545 550 555 560

Asn Ile His Ser Gln Val Ser Gln Gln Leu Cys Ser Thr Ser Leu Arg
565 570 575

Ala Leu Asp Phe Ser Gly Asn Ala Leu Gly His Met Trp Ala Glu Gly
580 585 590

Asp Leu Tyr Leu His Phe Phe Gln Gly Leu Ser Gly Leu Ile Trp Leu
595 600 605

Asp Leu Ser Gln Asn Arg Leu His Thr Leu Leu Pro Gln Thr Leu Arg
610 615 620

Asn Leu Pro Lys Ser Leu Gln Val Leu Arg Leu Arg Asp Asn Tyr Leu
625 630 635 640

Ala Phe Phe Lys Trp Trp Ser Leu His Phe Leu Pro Lys Leu Glu Val
645 650 655

Leu Asp Leu Ala Gly Asn Gln Leu Lys Ala Leu Thr Asn Gly Ser Leu
660 665 670

Pro Ala Gly Thr Arg Leu Arg Arg Leu Asp Val Ser Cys Asn Ser Ile
675 680 685

Ser Phe Val Ala Pro Gly Phe Phe Ser Lys Ala Lys Glu Leu Arg Glu
690 695 700

Leu Asn Leu Ser Ala Asn Ala Leu Lys Thr Val Asp His Ser Trp Phe
705 710 715 720

Gly Pro Leu Ala Ser Ala Leu Gln Ile Leu Asp Val Ser Ala Asn Pro
725 730 735

Leu His Cys Ala Cys Gly Ala Ala Phe Met Asp Phe Leu Leu Glu Val
740 745 750

Gln Ala Ala Val Pro Gly Leu Pro Ser Arg Val Lys Cys Gly Ser Pro
755 760 765

Gly Gln Leu Gln Gly Leu Ser Ile Phe Ala Gln Asp Leu Arg Leu Cys
770 775 780

Leu Asp Glu Ala Leu Ser Trp Asp Cys Phe Ala Leu Ser Leu Leu Ala
785 790 795 800

Val Ala Leu Gly Leu Gly Val Pro Met Leu His His Leu Cys Gly Trp
805 810 815

Asp Leu Trp Tyr Cys Phe His Leu Cys Leu Ala Trp Leu Pro Trp Arg
820 825 830

Gly Arg Gln Ser Gly Arg Asp Glu Asp Ala Leu Pro Tyr Asp Ala Phe
835 840 845

Val Val Phe Asp Lys Thr Gln Ser Ala Val Ala Asp Trp Val Tyr Asn
850 855 860

Glu Leu Arg Gly Gln Leu Glu Glu Cys Arg Gly Arg Trp Ala Leu Arg
865 870 875 880

Leu Cys Leu Glu Glu Arg Asp Trp Leu Pro Gly Lys Thr Leu Phe Glu
885 890 895

Asn Leu Trp Ala Ser Val Tyr Gly Ser Arg Lys Thr Leu Phe Val Leu
900 905 910

Ala His Thr Asp Arg Val Ser Gly Leu Leu Arg Ala Ser Phe Leu Leu
915 920 925

Ala Gln Gln Arg Leu Leu Glu Asp Arg Lys Asp Val Val Val Val Leu Val
930 935 940

Ile Leu Ser Pro Asp Gly Arg Arg Ser Arg Tyr Val Arg Leu Arg Gln
945 950 955 960

Arg Leu Cys Arg Gln Ser Val Leu Leu Trp Pro His Gln Pro Ser Gly
965 970 975

Gln Arg Ser Phe Trp Ala Gln Leu Gly Met Ala Leu Thr Arg Asp Asn
980 985 990

His His Phe Tyr Asn Arg Asn Phe Cys Gln Gly Pro Thr Ala Glu
995 1000 1005

<210> 44
<211> 2289
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(2079)

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Asn Leu Ser Phe Asn Tyr Arg Lys Lys Val Ser Phe Ala Arg Leu His
1 5 10 15

ctg gca agt tcc ttt aag aac ctg gtg tca ctg cag gag ctg aac atg 96
Leu Ala Ser Ser Phe Lys Asn Leu Val Ser Leu Gln Glu Leu Asn Met
20 25 30

aac ggc atc ttc ttc cgc ttg ctc aac aag tac acg ctc aga tgg ctg 144
Asn Gly Ile Phe Phe Arg Leu Leu Asn Lys Tyr Thr Leu Arg Trp Leu
35 40 45

gcc gat ctg ccc aaa ctc cac act ctg cat ctt caa atg aac ttc atc 192
Ala Asp Leu Pro Lys Leu His Thr Leu His Leu Gln Met Asn Phe Ile
50 55 60

aac cag gca cag ctc agc atc ttt ggt acc ttc cga gcc ctt cgc ttt 240
Asn Gln Ala Gln Leu Ser Ile Phe Gly Thr Phe Arg Ala Leu Arg Phe
65 70 75 80

gtg gac ttg tca gac aat cgc atc agt ggg cct tca acg ctg tca gaa 288
Val Asp Leu Ser Asp Asn Arg Ile Ser Gly Pro Ser Thr Leu Ser Glu
85 90 95

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

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

ctc cct tat gat gcc ttc gtg gtg ttc gat aag gca cag agc gca gtt		1632	
Leu Pro Tyr Asp Ala Phe Val Val Phe Asp Lys Ala Gln Ser Ala Val			
530	535	540	
gcc gac tgg gtg tat aac gag ctg cggttgc gat gac cga gat tgg ctg cct		1680	
Ala Asp Trp Val Tyr Asn Glu Leu Arg Val Arg Leu Glu Glu Arg Arg			
545	550	555	560
ggc cgc tgg gca ctc cgc ctg tgc ctg gag gac cga gat tgg ctg cct		1728	
Gly Arg Trp Ala Leu Arg Leu Cys Leu Glu Asp Arg Asp Trp Leu Pro			
565	570	575	
ggc cag acg ctc ttc gag aac ctc tgg gct tcc atc tat ggg agc cgc		1776	
Gly Gln Thr Leu Phe Glu Asn Leu Trp Ala Ser Ile Tyr Gly Ser Arg			
580	585	590	
aag act cta ttt gtg ctg gcc cac acg gac cgc gtc agt ggc ctc ctg		1824	
Lys Thr Leu Phe Val Leu Ala His Thr Asp Arg Val Ser Gly Leu Leu			
595	600	605	
cgc acc agc ttc ctg ctg gct cag cag cgc ctg ttg gaa gac cgc aag		1872	
Arg Thr Ser Phe Leu Leu Ala Gln Gln Arg Leu Leu Glu Asp Arg Lys			
610	615	620	
gac gtg gtg ttg gtg atc ctg cgt ccg gat gcc cac cgc tcc cgc		1920	
Asp Val Val Val Leu Val Ile Leu Arg Pro Asp Ala His Arg Ser Arg			
625	630	635	640
tat gtg cga ctg cgc cag cgt ctc tgc cgc cag agt gtg ctc ttc tgg		1968	
Tyr Val Arg Leu Arg Gln Arg Leu Cys Arg Gln Ser Val Leu Phe Trp			
645	650	655	
ccc cag cag ccc aac ggg cag ggg ggc ttc tgg gcc cag ctg agt aca		2016	
Pro Gln Gln Pro Asn Gly Gln Gly Phe Trp Ala Gln Leu Ser Thr			
660	665	670	
gcc ctg act agg gac aac cgc cac ttc tat aac cag aac ttc tgc cgg		2064	
Ala Leu Thr Arg Asp Asn Arg His Phe Tyr Asn Gln Asn Phe Cys Arg			
675	680	685	
gga cct aca gca gaa tagctcagag caacagctgg aaacagctgc atcttcatgt		2119	
Gly Pro Thr Ala Glu			
690			
ctggttcccg agttgctctg cctgccttgc tctgtcttac tacaccgcta tttggcaagt		2179	
gcgcataata tgctaccaag ccaccaggcc cacggagcaa aggttggctg taaaggtag		2239	
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<212> PRT

<213> Mus musculus

<400> 45

Asn Leu Ser Phe Asn Tyr Arg Lys Lys Val Ser Phe Ala Arg Leu His
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20 25 30

Asn Gly Ile Phe Phe Arg Leu Leu Asn Lys Tyr Thr Leu Arg Trp Leu
35 40 45

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

Asn Gln Ala Gln Leu Ser Ile Phe Gly Thr Phe Arg Ala Leu Arg Phe
65 70 75 80

Val Asp Leu Ser Asp Asn Arg Ile Ser Gly Pro Ser Thr Leu Ser Glu
85 90 95

Ala Thr Pro Glu Glu Ala Asp Asp Ala Glu Gln Glu Glu Leu Leu Ser
100 105 110

Ala Asp Pro His Pro Ala Pro Leu Ser Thr Pro Ala Ser Lys Asn Phe
115 120 125

Met Asp Arg Cys Lys Asn Phe Lys Phe Asn Met Asp Leu Ser Arg Asn
130 135 140

Asn Leu Val Thr Ile Thr Ala Glu Met Phe Val Asn Leu Ser Arg Leu
145 150 155 160

Gln Cys Leu Ser Leu Ser His Asn Ser Ile Ala Gln Ala Val Asn Gly
165 170 175

Ser Gln Phe Leu Pro Leu Thr Gly Leu Gln Val Leu Asp Leu Ser His
180 185 190

Asn Lys Leu Asp Leu Tyr His Glu His Ser Phe Thr Glu Leu Pro Arg

195

200

205

Leu Glu Ala Leu Asp Leu Ser Tyr Asn Ser Gln Pro Phe Ser Met Lys
210 215 220

Gly Ile Gly His Asn Phe Ser Phe Val Thr His Leu Ser Met Leu Gln
225 230 235 240

Ser Leu Ser Leu Ala His Asn Asp Ile His Thr Arg Val Ser Ser His
245 250 255

Leu Asn Ser Asn Ser Val Arg Phe Leu Asp Phe Ser Gly Asn Gly Met
260 265 270

Gly Arg Met Trp Asp Glu Gly Gly Leu Tyr Leu His Phe Phe Gln Gly
275 280 285

Leu Ser Gly Val Leu Lys Leu Asp Leu Ser Gln Asn Asn Leu His Ile
290 295 300

Leu Arg Pro Gln Asn Leu Asp Asn Leu Pro Lys Ser Leu Lys Leu Leu
305 310 315 320

Ser Leu Arg Asp Asn Tyr Leu Ser Phe Phe Asn Trp Thr Ser Leu Ser
325 330 335

Phe Leu Pro Asn Leu Glu Val Leu Asp Leu Ala Gly Asn Gln Leu Lys
340 345 350

Ala Leu Thr Asn Gly Thr Leu Pro Asn Gly Thr Leu Leu Gln Lys Leu
355 360 365

Asp Val Ser Ser Asn Ser Ile Val Ser Val Ala Pro Gly Phe Phe Ser
370 375 380

Lys Ala Lys Glu Leu Arg Glu Leu Asn Leu Ser Ala Asn Ala Leu Lys
385 390 395 400

Thr Val Asp His Ser Trp Phe Gly Pro Ile Val Met Asn Leu Thr Val
405 410 415

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

Val Asp Leu Leu Leu Glu Val Gln Thr Lys Val Pro Gly Leu Ala Asn
435 440 445

Gly Val Lys Cys Gly Ser Pro Gly Gln Leu Gln Gly Arg Ser Ile Phe
450 455 460

Ala Gln Asp Leu Arg Leu Cys Leu Asp Glu Val Leu Ser Trp Asp Cys
465 470 475 480

Phe Gly Leu Ser Leu Leu Ala Val Ala Val Gly Met Val Val Pro Ile
485 490 495

Leu His His Leu Cys Gly Trp Asp Val Trp Tyr Cys Phe His Leu Cys
500 505 510

Leu Ala Trp Leu Pro Leu Leu Ala Arg Ser Arg Arg Ser Ala Gln Thr
515 520 525

Leu Pro Tyr Asp Ala Phe Val Val Phe Asp Lys Ala Gln Ser Ala Val
530 535 540

Ala Asp Trp Val Tyr Asn Glu Leu Arg Val Arg Leu Glu Glu Arg Arg
545 550 555 560

Gly Arg Trp Ala Leu Arg Leu Cys Leu Glu Asp Arg Asp Trp Leu Pro
565 570 575

Gly Gln Thr Leu Phe Glu Asn Leu Trp Ala Ser Ile Tyr Gly Ser Arg
580 585 590

Lys Thr Leu Phe Val Leu Ala His Thr Asp Arg Val Ser Gly Leu Leu
595 600 605

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

Asp Val Val Val Leu Val Ile Leu Arg Pro Asp Ala His Arg Ser Arg

625 630 635 640

Tyr Val Arg Leu Arg Gln Arg Leu Cys Arg Gln Ser Val Leu Phe Trp
645 650 655

Pro Gln Gln Pro Asn Gly Gln Gly Phe Trp Ala Gln Leu Ser Thr
660 665 670

Ala Leu Thr Arg Asp Asn Arg His Phe Tyr Asn Gln Asn Phe Cys Arg
675 680 685

Gly Pro Thr Ala Glu
690

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<211> 24
<212> DNA
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<220>
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cgtaaaaactg gaagctttgc aaga 24

<210> 47
<211> 24
<212> DNA
<213> Homo sapiens

<220>
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<223> Reverse PCR Primer

<400> 47
ccttgggccca ttccaaataa gtcc 24

<210> 48
<211> 21
<212> DNA
<213> Homo sapiens

<220>

<221> misc_feature
<223> Forward PCR Primer

<400> 48
ggccagcaaa ttacctgtgt g 21

<210> 49
<211> 21
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Reverse PCR Primer

<400> 49
ccaggttaggt cttgggttgc a 21

<210> 50
<211> 25
<212> DNA
<213> Homo sapiens

<220>
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<400> 50
attgggtctg ggaacatttc tcttc 25

<210> 51
<211> 25
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<213> Homo sapiens

<220>
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<210> 52
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<220>
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<223> Forward PCR Primer

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<210> 53
<211> 20
<212> DNA
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<220>
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<223> Reverse PCR Primer

<400> 53
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<210> 54
<211> 20
<212> DNA
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<400> 54
cattgttatgc actgtcactc 20

<210> 55
<211> 20
<212> DNA
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<220>
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<223> Reverse PCR Primer

<400> 55
ccaccacccat gatgagagca 20

<210> 56
<211> 20

<212> DNA
<213> Homo sapiens

<220>
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<223> Forward PCR Primer

<400> 56
taggtctcat gacgaaggat 20

<210> 57
<211> 20
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Reverse PCR Primer

<400> 57
ggccactgca aataagtccg 20

<210> 58
<211> 18
<212> DNA
<213> Homo sapiens

<220>
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<223> Forward PCR Primer

<400> 58
agtgtctaaa gaacctgg 18

<210> 59
<211> 18
<212> DNA
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<220>
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<400> 59
cttggcctta cagaaatg 18

<210> 60
<211> 24
<212> DNA
<213> Homo sapiens

<220>
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<400> 60
cagaatagca ggcgttaacac atca 24

<210> 61
<211> 24
<212> DNA
<213> Homo sapiens

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<400> 61
aatgtcacag gtgcattcaa aggg 24

<210> 62
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<213> Homo sapiens

<220>
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<400> 62
ttatggactt cctgctggag gtgc 24

<210> 63
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<213> Homo sapiens

<220>
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<400> 63

ctgcgttttg tcgaagacca 20

<210> 64
<211> 24
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<223> Forward PCR Primer

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<210> 65
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<210> 66
<211> 32
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<213> Homo sapiens

<220>
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<223> Forward PCR Primer

<400> 66
atctggcacc acaccttcta caatgagctg cg 32

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

<220>
<221> misc_feature
<223> Reverse PCR Primer

<400> 67
cgtcatactc ctgcttgctg atccacatct gc 32

<210> 68
<211> 21
<212> DNA
<213> Homo sapiens

<220>
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<223> Forward PCR Primer

<400> 68
ggccagcaaa ttacctgtgt g 21

<210> 69
<211> 19
<212> DNA
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<223> Reverse PCR Primer

<400> 69
aggcggacat cctgaacct 19

<210> 70
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<220>
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<223> Forward PCR Primer

<400> 70
ctgcaatgga tcaaggacca 20

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<223> Reverse PCR Primer

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ttatctgaag gtgttcaca ttcc 24

<210> 72
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ttacctggat ggaaaccagg tact 24

<210> 73
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tcaaggctga gaagctgtaa gcta 24

<210> 74
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<212> DNA
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<210> 75
<211> 19
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<220>
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<223> Reverse PCR Primer

<400> 75
tgcacggtca ccaggttgt 19

<210> 76
<211> 23
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<400> 76

Thr Asp Gly Lys Thr Tyr Asp Ala Phe Val Ser Tyr Leu Lys Glu Cys
1 5 10 15

Arg Pro Glu Asn Gly Glu Glu
20

<210> 77
<211> 16
<212> PRT
<213> Homo sapiens

<400> 77

His Thr Phe Ala Val Glu Ile Leu Pro Arg Val Leu Glu Lys His Phe
1 5 10 15

<210> 78
<211> 27
<212> PRT
<213> Homo sapiens

<400> 78

Gly Tyr Lys Leu Cys Ile Phe Glu Arg Asp Val Val Pro Gly Gly Ala
1 5 10 15

Val Val Asp Glu Ile His Ser Leu Ile Glu Lys
20 25

<210> 79
<211> 17
<212> PRT

<213> Homo sapiens

<400> 79

Ser Arg Arg Leu Ile Ile Val Leu Ser Lys Ser Tyr Met Ser Asn Glu
1 5 10 15

Val

<210> 80

<211> 15

<212> PRT

<213> Homo sapiens

<400> 80

Arg Tyr Glu Leu Glu Ser Gly Leu His Glu Ala Leu Val Glu Arg
1 5 10 15

<210> 81

<211> 18

<212> PRT

<213> Homo sapiens

<400> 81

Lys Ile Ile Ile Leu Ile Glu Phe Thr Pro Val Thr Asp Phe Thr Phe
1 5 10 15

Leu Pro

<210> 82

<211> 11

<212> PRT

<213> Homo sapiens

<400> 82

Gln Ser Leu Lys Leu Leu Lys Ser His Arg Val
1 5 10

<210> 83

<211> 13

<212> PRT

<213> Homo sapiens

<400> 83

Leu Lys Trp Lys Ala Asp Lys Ser Leu Ser Tyr Asn Ser
1 5 10

<210> 84

<211> 21

<212> PRT

<213> Homo sapiens

<400> 84

Arg Phe Trp Lys Asn Leu Leu Tyr Leu Met Pro Ala Lys Thr Val Lys
1 5 10 15

Pro Gly Arg Asp Glu

20

<210> 85

<211> 18

<212> PRT

<213> Mus musculus

<400> 85

Leu Asp Gly Lys Glu Tyr Asp Ile Tyr Val Ser Tyr Ala Arg Asn Val
1 5 10 15

Glu Glu

<210> 86

<211> 16

<212> PRT

<213> Mus musculus

<400> 86

Glu Glu Phe Val Leu Leu Thr Leu Arg Gly Val Leu Glu Asn Glu Phe
1 5 10 15

<210> 87

<211> 27

<212> PRT

<213> Mus musculus

<400> 87

Gly Tyr Lys Leu Cys Ile Phe Asp Arg Asp Ser Leu Pro Gly Gly Ile
1 5 10 15

Val Thr Asp Glu Thr Leu Ser Phe Ile Gln Lys
20 25

<210> 88
<211> 19
<212> PRT
<213> Mus musculus

<400> 88

Ser Arg Arg Leu Leu Val Val Leu Ser Pro Asn Tyr Val Leu Gln Gly
1 5 10 15

Thr Gln Ala

<210> 89
<211> 33
<212> PRT
<213> Mus musculus

<400> 89

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

Ile Asn Val Ile Leu Val Gln Tyr Lys Ala Val Lys Asp Met Lys Val
20 25 30

Lys

<210> 90
<211> 11
<212> PRT
<213> Mus musculus

<400> 90

Glu Leu Lys Arg Ala Lys Thr Val Leu Thr Val
1 5 10

<210> 91

<211> 12
<212> PRT
<213> Mus musculus

<400> 91

Ile Lys Trp Lys Gly Glu Lys Ser Lys Tyr Pro Gln
1 5 10

<210> 92
<211> 22
<212> PRT
<213> Mus musculus

<400> 92

Gly Arg Phe Trp Lys Gln Leu Gln Val Ala Met Pro Val Lys Lys Ser
1 5 10 15

Pro Arg Trp Ser Ser Asn
20

<210> 93
<211> 42
<212> PRT
<213> Mus musculus

<400> 93

Asn Asp Gly Lys Leu Tyr Asp Ala Tyr Ile Ile Tyr Pro Arg Val Phe
1 5 10 15

Arg Gly Ser Ala Ala Gly Thr His Ser Val Glu Tyr Phe Val His His
20 25 30

Thr Leu Pro Asp Val Leu Glu Asn Lys Cys
35 40

<210> 94
<211> 27
<212> PRT
<213> Mus musculus

<400> 94

Gly Tyr Lys Leu Cys Ile Tyr Gly Arg Asp Leu Leu Pro Gly Gln Asp
1 5 10 15

Ala Ala Thr Val Val Glu Ser Ser Ile Gln Asn
20 25

<210> 95
<211> 18
<212> PRT
<213> Mus musculus

<400> 95

Ser Arg Arg Gln Val Phe Val Leu Ala Pro His Met Met His Ser Lys
1 5 10 15

Glu Phe

<210> 96
<211> 51
<212> PRT
<213> Mus musculus

<400> 96

Ala Tyr Glu Gln Glu Ile Ala Leu His Ser Ala Leu Ile Gln Asn Asn
1 5 10 15

Ser Lys Val Ile Leu Ile Glu Met Glu Pro Leu Gly Glu Ala Ser Arg
20 25 30

Leu Gln Val Gly Asp Leu Gln Asp Ser Leu Gln His Leu Val Lys Ile
35 40 45

Gln Gly Thr
50

<210> 97
<211> 37
<212> PRT
<213> Mus musculus

<400> 97

Ile Lys Trp Arg Glu Asp His Val Ala Asp Lys Gln Ser Leu Ser Ser
1 5 10 15

Lys Phe Trp Lys His Val Arg Tyr Gln Met Pro Val Pro Glu Arg Ala
20 25 30

Ser Lys Thr Ala Ser
35

<210> 98
<211> 24
<212> PRT
<213> Homo sapiens

<400> 98

Val Asp Gly Lys Leu Tyr Asp Ala Tyr Val Leu Tyr Pro Lys Pro His
1 5 10 15

Lys Glu Ser Gln Arg His Ala Val
20

<210> 99
<211> 16
<212> PRT
<213> Homo sapiens

<400> 99

Asp Ala Leu Val Leu Asn Ile Leu Pro Glu Val Leu Glu Arg Gln Cys
1 5 10 15

<210> 100
<211> 27
<212> PRT
<213> Homo sapiens

<400> 100

Gly Tyr Lys Leu Phe Ile Phe Gly Arg Asp Glu Phe Pro Gly Gln Ala
1 5 10 15

Val Ala Asn Val Ile Asp Glu Asn Val Lys Leu
20 25

<210> 101
<211> 20
<212> PRT
<213> Homo sapiens

<400> 101

Cys Arg Arg Leu Ile Val Ile Val Val Pro Glu Ser Leu Gly Phe Gly
1 5 10 15

Leu Leu Lys Asn
20

<210> 102

<211> 34

<212> PRT

<213> Homo sapiens

<400> 102

Leu Ser Glu Glu Gln Ile Ala Val Tyr Ser Ala Leu Ile Gln Asp Gly
1 5 10 15

Met Lys Val Ile Leu Ile Glu Leu Glu Lys Ile Glu Asp Tyr Thr Val
20 25 30

Met Pro

<210> 103

<211> 12

<212> PRT

<213> Homo sapiens

<400> 103

Glu Ser Ile Gln Tyr Ile Lys Gln Lys His Gly Ala
1 5 10

<210> 104

<211> 36

<212> PRT

<213> Homo sapiens

<400> 104

Ile Arg Trp His Gly Asp Phe Thr Glu Gln Ser Gln Cys Met Thr Lys
1 5 10 15

Phe Trp Lys Thr Val Arg Tyr His Met Pro Pro Arg Arg Cys Arg Pro
20 25 30

Phe Leu Arg Ser
35

<210> 105
<211> 24
<212> PRT
<213> Homo sapiens

<400> 105

Ser Asp Gly Lys Thr Tyr Asp Ala Tyr Ile Leu Tyr Pro Lys Thr Val
1 5 10 15

Gly Glu Gly Ser Thr Ser Asp Cys
20

<210> 106
<211> 16
<212> PRT
<213> Homo sapiens

<400> 106

Asp Ile Phe Val Phe Lys Val Leu Pro Glu Val Leu Glu Lys Gln Cys
1 5 10 15

<210> 107
<211> 27
<212> PRT
<213> Homo sapiens

<400> 107

Gly Tyr Lys Leu Phe Ile Tyr Gly Arg Asp Asp Tyr Val Gly Glu Asp
1 5 10 15

Ile Val Glu Val Ile Asn Glu Asn Val Lys Lys
20 25

<210> 108
<211> 20
<212> PRT
<213> Homo sapiens

<400> 108

Ser Arg Arg Leu Ile Ile Leu Val Arg Glu Thr Ser Gly Phe Ser

1

5

10

15

Trp Leu Gly Gly
20

<210> 109
<211> 34
<212> PRT
<213> Homo sapiens

<400> 109

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

Ile Lys Val Val Leu Leu Glu Leu Glu Lys Ile Gln Asp Tyr Glu Lys
20 25 30

Met Pro

<210> 110
<211> 12
<212> PRT
<213> Homo sapiens

<400> 110

Glu Ser Ile Lys Phe Ile Lys Gln Lys His Gly Ala
1 5 10

<210> 111
<211> 37
<212> PRT
<213> Homo sapiens

<400> 111

Ile Arg Trp Ser Gly Asp Phe Thr Gln Gly Pro Gln Ser Ala Lys Thr
1 5 10 15

Arg Phe Trp Lys Asn Val Arg Tyr His Met Pro Val Gln Arg Arg Ser
20 25 30

Pro Ser Ser Lys His
35

<210> 112
<211> 23
<212> PRT
<213> Gallus gallus

<400> 112

Ser Asp Gly Lys Ile Tyr Asp Ala Tyr Val Leu Tyr Pro Lys Asn Arg
1 5 10 15

Glu Ser Cys Leu Tyr Ser Ser
20

<210> 113
<211> 16
<212> PRT
<213> Gallus gallus

<400> 113

Asp Ile Phe Ala Leu Lys Ile Leu Pro Glu Val Leu Glu Arg Gln Cys
1 5 10 15

<210> 114
<211> 27
<212> PRT
<213> Gallus gallus

<400> 114

Gly Tyr Asn Leu Phe Ile Phe Gly Arg Asn Asp Leu Ala Gly Glu Ala
1 5 10 15

Val Ile Asp Val Thr Asp Glu Lys Ile His Gln
20 25

<210> 115
<211> 20
<212> PRT
<213> Gallus gallus

<400> 115

Ser Arg Arg Val Ile Ile Ile Leu Val Pro Glu Pro Ser Cys Tyr Gly
1 5 10 15

Ile Leu Glu Asp

<210> 116

<211> 34

<212> PRT

<213> Gallus gallus

<400> 116

Ala Ser Glu Lys His Leu Ala Val Tyr Asn Ala Leu Ile Gln Asp Gly
1 5 10 15

Ile Lys Ile Ile Leu Ile Asx Leu Glu Lys Ile Glu Asp Tyr Ala Asn
20 25 30

Met Pro

<210> 117

<211> 12

<212> PRT

<213> Gallus gallus

<400> 117

Glu Ser Ile Lys Tyr Val Lys Gln Lys Tyr Gly Ala
1 5 10

<210> 118

<211> 37

<212> PRT

<213> Gallus gallus

<400> 118

Ile Arg Trp Thr Gly Asp Phe Ser Glu Arg Ser His Ser Ala Ser Thr
1 5 10 15

Arg Phe Trp Lys Lys Val Arg Tyr His Met Pro Ser Arg Lys His Gly
20 25 30

Ser Ser Ser Gly Phe
35

<210> 119

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

<400> 119

His Met Pro Glu Arg Phe Asp Ala Phe Ile Cys Tyr Cys Pro Ser Asp
1 5 10 15

<210> 120
<211> 16
<212> PRT
<213> Homo sapiens

<400> 120

Ile Gln Phe Val Gln Glu Met Ile Arg Gln Leu Glu Gln Thr Asn Tyr
1 5 10 15

<210> 121
<211> 46
<212> PRT
<213> Homo sapiens

<400> 121

Arg Leu Lys Leu Cys Val Ser Asp Arg Asp Val Leu Pro Gly Thr Cys
1 5 10 15

Val Trp Ser Ile Ala Ser Glu Leu Ile Glu Lys Arg Cys Arg Arg Met
20 25 30

Val Val Val Val Ser Asp Asp Tyr Leu Gln Ser Lys Glu Cys
35 40 45

<210> 122
<211> 16
<212> PRT
<213> Homo sapiens

<400> 122

Asp Phe Gln Thr Lys Phe Ala Leu Ser Leu Ser Pro Gly Ala His Gln
1 5 10 15

<210> 123
<211> 12
<212> PRT

<213> Homo sapiens

<400> 123

Lys Leu Ile Pro Ile Lys Tyr Lys Ala Met Lys Lys
1 5 10

<210> 124

<211> 11

<212> PRT

<213> Homo sapiens

<400> 124

Glu Phe Pro Ser Ile Leu Arg Phe Ile Thr Val
1 5 10

<210> 125

<211> 10

<212> PRT

<213> Homo sapiens

<400> 125

Cys Asp Tyr Thr Asn Pro Cys Thr Lys Ser
1 5 10

<210> 126

<211> 13

<212> PRT

<213> Homo sapiens

<400> 126

Trp Phe Trp Thr Arg Leu Ala Lys Ala Leu Ser Leu Pro
1 5 10

<210> 127

<211> 16

<212> PRT

<213> Mus musculus

<400> 127

Gln Thr Pro Glu Leu Phe Asp Ala Phe Ile Cys Tyr Cys Pro Asn Asp
1 5 10 15

<210> 128

<211> 16

<212> PRT
<213> Mus musculus

<400> 128

Ile Glu Phe Val Gln Glu Met Ile Arg Gln Leu Glu Gln Thr Asp Tyr
1 5 10 15

<210> 129
<211> 46
<212> PRT
<213> Mus musculus

<400> 129

Arg Leu Lys Leu Cys Val Ser Asp Arg Asp Val Leu Pro Gly Thr Cys
1 5 10 15

Val Trp Ser Ile Ala Ser Glu Leu Ile Glu Lys Arg Cys Arg Arg Met
20 25 30

Val Val Val Val Ser Asp Asp Tyr Leu Gln Ser Lys Glu Cys
35 40 45

<210> 130
<211> 16
<212> PRT
<213> Mus musculus

<400> 130

Asp Phe Gln Thr Lys Phe Ala Leu Ser Leu Ser Pro Gly Val Gln Gln
1 5 10 15

<210> 131
<211> 12
<212> PRT
<213> Mus musculus

<400> 131

Lys Leu Ile Pro Ile Lys Tyr Lys Ala Met Lys Lys
1 5 10

<210> 132
<211> 11
<212> PRT
<213> Mus musculus

<400> 132

Asp Phe Pro Ser Ile Leu Arg Phe Ile Thr Ile
1 5 10

<210> 133

<211> 10

<212> PRT

<213> Mus musculus

<400> 133

Cys Asp Tyr Thr Asn Pro Cys Thr Lys Ser
1 5 10

<210> 134

<211> 13

<212> PRT

<213> Mus musculus

<400> 134

Trp Phe Trp Thr Arg Leu Ala Lys Ala Leu Ser Leu Pro
1 5 10

<210> 135

<211> 16

<212> PRT

<213> Homo sapiens

<400> 135

Gln Arg Asn Leu Gln Phe His Ala Phe Ile Ser Tyr Ser Gly His Asp
1 5 10 15

<210> 136

<211> 15

<212> PRT

<213> Homo sapiens

<400> 136

Ser Phe Trp Val Lys Asn Glu Leu Leu Pro Asn Leu Glu Lys Glu
1 5 10 15

<210> 137

<211> 27

<212> PRT

<213> Homo sapiens

<400> 137

Gly Met Gln Ile Cys Leu His Glu Arg Asn Phe Val Pro Gly Lys Ser
1 5 10 15

Ile Val Glu Asn Ile Ile Thr Cys Ile Glu Lys
20 25

<210> 138

<211> 18

<212> PRT

<213> Homo sapiens

<400> 138

Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Ser Glu
1 5 10 15

Trp Cys

<210> 139

<211> 16

<212> PRT

<213> Homo sapiens

<400> 139

His Tyr Glu Leu Tyr Phe Ala His His Asn Leu Phe His Glu Gly Ser
1 5 10 15

<210> 140

<211> 20

<212> PRT

<213> Homo sapiens

<400> 140

Ser Leu Ile Leu Ile Leu Leu Glu Pro Ile Pro Gln Tyr Ser Ile Pro
1 5 10 15

Ser Ser Tyr His
20

<210> 141

<211> 11
<212> PRT
<213> Homo sapiens

<400> 141

Lys Leu Lys Ser Leu Met Ala Arg Arg Thr Tyr
1 5 10

<210> 142
<211> 10
<212> PRT
<213> Homo sapiens

<400> 142

Leu Glu Trp Pro Lys Glu Lys Ser Lys Arg
1 5 10

<210> 143
<211> 21
<212> PRT
<213> Homo sapiens

<400> 143

Gly Leu Phe Trp Ala Asn Leu Arg Ala Ala Ile Asn Ile Lys Leu Thr
1 5 10 15

Glu Gln Ala Lys Lys
20

<210> 144
<211> 16
<212> PRT
<213> Homo sapiens

<400> 144

Ser Arg Asn Ile Cys Tyr Asp Ala Phe Val Ser Tyr Ser Glu Arg Asp
1 5 10 15

<210> 145
<211> 17
<212> PRT
<213> Homo sapiens

<400> 145

Ala Tyr Trp Val Glu Asn Leu Met Val Gln Glu Leu Glu Asn Phe Asn
1 5 10 15

Pro

<210> 146
<211> 27
<212> PRT
<213> Homo sapiens

<400> 146

Pro Phe Lys Leu Cys Leu His Lys Arg Asp Phe Ile Pro Gly Lys Trp
1 5 10 15

Ile Ile Asp Asn Ile Ile Asp Ser Ile Glu Lys
20 25

<210> 147
<211> 18
<212> PRT
<213> Homo sapiens

<400> 147

Thr Thr Lys Leu Ser Phe Val Leu Ser Glu Asn Phe Val Lys Ser Glu
1 5 10 15

Trp Cys

<210> 148
<211> 16
<212> PRT
<213> Homo sapiens

<400> 148

Lys Tyr Glu Leu Asp Phe Ser His Phe Arg Leu Phe Asp Glu Asn Asn
1 5 10 15

<210> 149
<211> 20
<212> PRT
<213> Homo sapiens

<400> 149

Ala Ala Ile Leu Ile Leu Leu Glu Pro Ile Glu Lys Lys Ala Ile Pro
1 5 10 15

Gln Arg Phe Cys
20

<210> 150

<211> 11

<212> PRT

<213> Homo sapiens

<400> 150

Lys Leu Arg Lys Ile Met Asn Thr Lys Thr Tyr
1 5 10

<210> 151

<211> 10

<212> PRT

<213> Homo sapiens

<400> 151

Leu Glu Trp Pro Met Asp Glu Ala Gln Arg
1 5 10

<210> 152

<211> 13

<212> PRT

<213> Homo sapiens

<400> 152

Glu Gly Phe Trp Val Asn Leu Arg Ala Ala Ile Lys Ser
1 5 10

<210> 153

<211> 16

<212> PRT

<213> Homo sapiens

<400> 153

Thr Glu Gln Phe Glu Tyr Ala Ala Tyr Ile Ile His Ala Tyr Lys Asp
1 5 10 15

<210> 154
<211> 16
<212> PRT
<213> Homo sapiens

<400> 154

Lys Asp Trp Val Trp Glu His Phe Ser Ser Met Glu Lys Glu Asp Gln
1 5 10 15

<210> 155
<211> 27
<212> PRT
<213> Homo sapiens

<400> 155

Ser Leu Lys Phe Cys Leu Glu Glu Arg Asp Phe Glu Ala Gly Val Phe
1 5 10 15

Glu Leu Glu Ala Ile Val Asn Ser Ile Lys Arg
20 25

<210> 156
<211> 19
<212> PRT
<213> Homo sapiens

<400> 156

Ser Arg Lys Ile Ile Phe Val Ile Thr His His Leu Leu Lys Asp Pro
1 5 10 15

Leu Cys Lys

<210> 157
<211> 16
<212> PRT
<213> Homo sapiens

<400> 157

Arg Phe Lys Val His His Ala Val Gln Gln Ala Ile Glu Gln Asn Leu
1 5 10 15

<210> 158
<211> 18

<212> PRT
<213> Homo sapiens

<400> 158

Ser Ile Ile Leu Val Phe Leu Glu Glu Ile Pro Asp Tyr Lys Leu Asn
1 5 10 15

His Ala

<210> 159
<211> 23
<212> PRT
<213> Homo sapiens

<400> 159

Leu Cys Leu Arg Arg Gly Met Phe Lys Ser His Cys Ile Leu Asn Trp
1 5 10 15

Pro Val Gln Lys Glu Arg Ile
20

<210> 160
<211> 19
<212> PRT
<213> Homo sapiens

<400> 160

Gly Ala Phe Arg His Lys Leu Gln Val Ala Leu Gly Ile Gln Lys Leu
1 5 10 15

Cys Tyr Ile

<210> 161
<211> 16
<212> PRT
<213> Homo sapiens

<400> 161

Arg Gly Glu Asn Ile Tyr Asp Ala Phe Val Ile Tyr Ser Ser Gln Asp
1 5 10 15

<210> 162

<211> 17
<212> PRT
<213> Homo sapiens

<400> 162

Glu Asp Trp Val Arg Asn Glu Leu Val Lys Asn Leu Glu Glu Gly Val
1 5 10 15

Pro

<210> 163
<211> 46
<212> PRT
<213> Homo sapiens

<400> 163

Pro Phe Gln Leu Cys Leu His Tyr Arg Asp Phe Ile Pro Gly Val Ala
1 5 10 15

Ile Ala Ala Asn Ile Ile His Glu Gly Phe His Lys Ser Arg Lys Val
20 25 30

Ile Val Val Val Ser Gln His Phe Ile Gln Ser Arg Trp Cys
35 40 45

<210> 164
<211> 36
<212> PRT
<213> Homo sapiens

<400> 164

Ile Phe Glu Tyr Glu Ile Ala Gln Thr Trp Gln Phe Leu Ser Ser Arg
1 5 10 15

Ala Gly Ile Ile Phe Ile Val Leu Gln Lys Val Glu Lys Thr Leu Leu
20 25 30

Arg Gln Gln Val
35

<210> 165
<211> 12
<212> PRT
<213> Homo sapiens

<400> 165

Glu Leu Tyr Arg Leu Leu Ser Arg Asn Thr Tyr Leu
1 5 10

<210> 166

<211> 10

<212> PRT

<213> Homo sapiens

<400> 166

Leu Glu Trp Glu Asp Ser Val Leu Gly Arg
1 5 10

<210> 167

<211> 22

<212> PRT

<213> Homo sapiens

<400> 167

His Ile Phe Trp Arg Arg Leu Arg Lys Ala Leu Leu Asp Gly Lys Ser
1 5 10 15

Trp Asn Pro Glu Gly Thr
20

<210> 168

<211> 16

<212> PRT

<213> Homo sapiens

<400> 168

Pro Asp Met Tyr Lys Tyr Asp Ala Tyr Leu Cys Phe Ser Ser Lys Asp
1 5 10 15

<210> 169

<211> 47

<212> PRT

<213> Homo sapiens

<400> 169

Phe Thr Trp Val Gln Asn Ala Leu Leu Lys His Leu Asp Thr Gln Tyr
1 5 10 15

Ser Asp Gln Asn Arg Phe Asn Leu Cys Phe Glu Glu Arg Asp Phe Val
20 25 30

Pro Gly Glu Asn Arg Ile Ala Asn Ile Gln Asp Ala Ile Trp Asn
35 40 45

<210> 170
<211> 20
<212> PRT
<213> Homo sapiens

<400> 170

Ser Arg Lys Ile Val Cys Leu Val Ser Arg His Phe Leu Arg Asp Gly
1 5 10 15

Trp Cys Leu Glu
20

<210> 171
<211> 15
<212> PRT
<213> Homo sapiens

<400> 171

Ala Phe Ser Tyr Ala Gln Gly Arg Cys Leu Ser Asp Leu Asn Ser
1 5 10 15

<210> 172
<211> 18
<212> PRT
<213> Homo sapiens

<400> 172

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

Lys His

<210> 173
<211> 12
<212> PRT
<213> Homo sapiens

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Gln Ser Ile Arg Gly Phe Val Gln Lys Gln Gln Tyr
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<210> 174

<211> 10

<212> PRT

<213> Homo sapiens

<400> 174

Leu Arg Trp Pro Glu Asp Leu Gln Asp Val
1 5 10

<210> 175

<211> 22

<212> PRT

<213> Homo sapiens

<400> 175

Gly Trp Phe Leu His Lys Ser Gln Gln Ile Lys Lys Glu Lys Glu Lys
1 5 10 15

Lys Lys Asp Asn Asn Ile
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<210> 176

<211> 16

<212> PRT

<213> Drosophila melanogaster

<400> 176

Asp Ala Gly Lys Leu Tyr Asp Ala Ile Ile Leu His Ser Glu Lys Asp
1 5 10 15

<210> 177

<211> 17

<212> PRT

<213> Drosophila melanogaster

<400> 177

Tyr Glu Phe Val Cys Arg Asn Ile Ala Ala Glu Leu Glu His Gly Arg
1 5 10 15

Pro

<210> 178
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<400> 178

Pro Phe Arg Leu Cys Ile Gln Gln Arg Asp Leu
1 5 10

<210> 179
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<400> 179

Pro Pro Ala Ser His Leu Gln Leu Val Glu Gly Ala Arg Ala
1 5 10

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<400> 180

Ser Arg Lys Ile Ile Leu Val Leu Thr Arg Asn Leu Leu Ala Thr Glu
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Trp Asn

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<400> 181

Arg Ile Glu Phe Arg Asn Ala Phe His Glu Ser Leu Arg Gly Leu Ala
1 5 10 15

<210> 182
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<400> 182

Lys Leu Val Ile Ile Glu Glu Thr Ser Val Ser Ala Glu Ala Glu Asp
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Val Ala

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<400> 183

Glu Leu Ser Pro Tyr Leu Lys Ser Val Pro Ser
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<400> 184

Asn Arg Leu Leu Thr Cys Asp
1 5

<210> 185
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<400> 185

Arg Tyr Phe Trp Glu Lys Leu Arg Tyr Ala Ile Pro Ile Glu Leu Ser
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Pro Arg Gly Asn Asn Tyr
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<400> 186

Asp Lys Asp Lys Arg Phe Asp Ala Phe Leu Ala Phe Thr His Lys Asp
1 5 10 15

<210> 187

<211> 16

<212> PRT

<213> Drosophila melanogaster

<400> 187

Glu Ala Leu Leu Glu Glu Phe Val Asp Arg Leu Glu Arg Gly Arg Pro
1 5 10 15

<210> 188

<211> 27

<212> PRT

<213> Drosophila melanogaster

<400> 188

Arg Phe Gln Leu Cys Phe Tyr Leu Arg Asp Trp Leu Ala Gly Glu Ser
1 5 10 15

Ile Pro Asp Cys Ile Gly Gln Ser Ile Lys Asp
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<210> 189

<211> 18

<212> PRT

<213> Drosophila melanogaster

<400> 189

Ser Arg Arg Ile Ile Val Leu Met Thr Glu Asn Phe Met Asn Ser Thr
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Trp Gly

<210> 190

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<213> Drosophila melanogaster

<400> 190

Arg Leu Glu Phe Arg Leu Ala Leu His Ala Thr Ser Arg Asp Arg Cys
1 5 10 15

<210> 191
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Arg Leu Ile Val Val Leu Tyr Pro Asn Val Lys Asn Phe Asp Ser Leu
1 5 10 15

Asp Ser

<210> 192
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<400> 192

Glu Leu Arg Thr Tyr Met Ala Phe Asn Thr Tyr
1 5 10

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Leu Glu Arg Ser His Pro
1 5

<210> 194
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Asn Phe Trp Asn Lys Leu Ile Tyr Ser Met Pro His Thr Lys Leu Arg
1 5 10 15

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Asp Lys Asp Lys Lys Phe Asp Ala Phe Ile Ser Tyr Ser His Lys Asp
1 5 10 15

<210> 196
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Gln Ser Phe Ile Glu Asp Tyr Leu Val Pro Gln Leu Glu His Gly Pro
1 5 10 15

Gln

<210> 197
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<212> PRT
<213> Drosophila melanogaster

<400> 197

Lys Phe Gln Leu Cys Val His Glu Arg Asp Trp Leu Val Gly Gly His
1 5 10 15

Ile Pro Glu Asn Ile Met Arg Ser Val Ala Asp
20 25

<210> 198
<211> 18
<212> PRT
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<400> 198

Ser Arg Arg Thr Ile Ile Val Leu Ser Gln Asn Phe Ile Lys Ser Glu
1 5 10 15

Trp Ala

<210> 199
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<400> 199

Arg Leu Glu Phe Arg Ala Ala His Arg Ser Ala Leu Asn Glu Gly Arg
1 5 10 15

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<400> 200

Arg Ile Ile Val Ile Ile Tyr Ser Asp Ile Gly Asp Val Glu Lys Leu
1 5 10 15

Asp Glu

<210> 201
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<400> 201

Glu Leu Lys Ala Tyr Leu Lys Met Asn Thr Tyr
1 5 10

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Leu Lys Trp Gly Asp Pro
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<400> 203

Trp Phe Trp Asp Lys Leu Arg Phe Ala Leu Pro His Arg Arg Pro Val
1 5 10 15

Gly Asn Ile Gly Asn
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<400> 204

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

Thr

<210> 205
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<212> PRT
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<400> 205

Arg Lys Thr Phe Thr Ser His Leu Tyr Glu Val Leu Asn Asp Lys
1 5 10 15

<210> 206
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<400> 206

Gly Ile Lys Thr Phe Gln Asp Asp Lys Arg Leu Glu Tyr Gly Ala Thr
1 5 10 15

Ile Pro Gly Glu Leu Cys Lys Ala Ile Glu Glu
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<400> 207

Ser Gln Phe Ala Ile Val Val Phe Ser Glu Asn Tyr Ala Thr Ser Arg
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Trp Cys

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<400> 208

Leu Asn Glu Leu Val Lys Ile Met Glu Cys Lys Thr Arg Phe Lys
1 5 10 15

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<213> Nicotiana tabacum

<400> 209

Gln Thr Val Ile Pro Ile Phe Tyr Asp Val Asp Pro Ser His Val Arg
1 5 10 15

Asn Gln Lys

<210> 210

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<213> Nicotiana tabacum

<400> 210

Glu Ser Phe Ala Lys Ala Phe Glu Glu His Glu
1 5 10

<210> 211

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<212> PRT

<213> Nicotiana tabacum

<400> 211

Thr Lys Tyr Lys Asp Asp Val Glu Gly
1 5

<210> 212
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<400> 212

Ile Gln Arg Trp Arg Ile Ala Leu Asn Glu Ala Ala Asn Leu Lys Gly
1 5 10 15

Ser Cys Asp Asn Arg Asp
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<210> 213
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<400> 213

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

Thr

<210> 214
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<212> PRT
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<400> 214

Arg Glu Gln Phe Thr Asp Phe Leu Tyr Gln Ser Leu Arg Arg Tyr
1 5 10 15

<210> 215
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Lys Ile His Thr Phe Arg Asp Asp Glu Leu Leu Lys Gly Lys Glu

1 5 10 15

Ile Gly Pro Asn Leu Leu Arg Ala Ile Asp Gln
20 25

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Ser Lys Ile Tyr Val Pro Ile Ile Ser Ser Gly Tyr Ala Asp Ser Lys
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Trp Cys

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Leu Met Glu Leu Ala Glu Ile Val Arg Arg Gln Glu Glu Asp Pro
1 5 10 15

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

His Gln Thr

<210> 219
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<400> 219

Gly Cys Tyr Lys Lys Ala Phe Arg Lys His Ala
1 5 10

<210> 220
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<400> 220

Asn Lys Phe Asp Gly Gln Thr
1 5

<210> 221
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<400> 221

Ile Gln Asn Trp Lys Asp Ala Leu Lys Lys Val Gly Asp Leu Lys Gly
1 5 10 15

Trp His Ile Gly Lys Asn
20