

1

SEQUENCE LISTING

<110> EXTERNAUTICS S.P.A.

<120> LUNG TUMOR MARKERS AND METHODS OF USE THEREOF

<130> 1299PCT

<160> 100

<170> PatentIn version 3.3

<210> 1

<211> 157

<212> PRT

<213> Homo sapiens

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

Glu Glu Ala Ala Ser Pro Asn Glu Ala Val His Ala Ser Thr Ser Gly
35 40 45

Ser Gly Ala Leu Thr Asp Gln Thr Phe Thr Asp Leu Ser Ala Ala Glu
50 55 60

Ala Ser Ser Glu Glu Val Pro Asp Phe Met Glu Val Pro His Ser Val
65 70 75 80

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

Leu Pro Ser Pro Leu Cys Leu Ser Ser Leu Leu Thr Leu Lys Leu Lys
100 105 110

Thr Thr Val Pro Ala Pro Gly Arg Trp Trp Ser Phe Gln Pro His Lys
115 120 125

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

Asp Pro Ala Trp Ala Ala Pro Ser Gln Pro Ser Pro Gly
145 150 155

<210> 2

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<212> DNA

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tggtggagct tccagcctca caaggcattc ccacttctgg tgggcactcc tggaagctgg      420
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Met Gly Phe Ile Phe Ser Lys Ser Met Asn Glu Ser Met Lys Asn Gln
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Lys Glu Phe Met Leu Met Asn Ala Arg Leu Gln Leu Glu Arg Gln Leu
20          25          30

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Ile Met Gln Ser Glu Met Arg Glu Arg Gln Met Ala Met Gln Ile Ala
35          40          45

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Trp Ser Arg Glu Phe Leu Lys Tyr Phe Gly Thr Phe Phe Gly Leu Ala
50          55          60

```

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Ala Ile Ser Leu Thr Ala Gly Ala Ile Lys Lys Lys Lys Pro Ala Phe
65          70          75          80

```

```

Leu Val Pro Ile Val Pro Leu Ser Phe Ile Leu Thr Tyr Gln Tyr Asp
85          90          95

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```

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

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```

Ile Leu Glu Thr Glu Lys Ser Lys Leu Gln Leu Pro Arg Gly Met Ile
115        120        125

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Thr Phe Glu Ser Ile Glu Lys Ala Arg Lys Glu Gln Ser Arg Phe Phe
130        135        140

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Ile Asp Lys
145

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caagtccaga cccaggagag caaggcccag aaagagggtca aaatgggggt tatattttca 240
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aaaggtgaag ctgaggacat actggaaaca gaaaagagta aattgcagct gccaagagga 600
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aaatgaaatc atgcttacca atcaaattctc aaagcacaga attattgact tgaatcatgg 720
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tgtaaaatta ataaattggt ttgaattcct gg 932

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

Asp Arg Leu Met Trp Ile Met Ile Leu Glu Cys Gly Tyr Thr Tyr Cys
35 40 45

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

Ala Glu Ala Arg Arg Val Asp Glu Val Phe Glu Asp Ala Phe Glu Gln
 65 70 75 80

Glu Tyr Thr Arg Val Cys Ser Leu Asn Glu His Phe Gly Asn Val Leu
 85 90 95

Thr Pro Cys Thr Val Leu Pro Val Lys Leu Tyr Ser Asp Ala Arg Asn
 100 105 110

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

Gly Asp Leu Ile Lys Val Leu Val Trp Ile Leu Val Gln Tyr Cys Ser
 130 135 140

Lys Arg Pro Gly Met Lys Glu Asn Val His Asn Thr Glu Asn Lys Gly
 145 150 155 160

Lys Ala Pro Leu Met Leu Pro Ala Leu Asn Thr Leu Pro Pro Pro Lys
 165 170 175

Ser Pro Glu Asp Ile Asp Ser Leu Asn Ser Glu Thr Phe Asn Asp Trp
 180 185 190

Ser Asp Asp Asn Ile Phe Asp Asp Glu Pro Thr Ile Lys Lys Val Ile
 195 200 205

Glu Glu Lys His Gln Leu Lys Asp Leu Pro Gly Thr Asn Leu Phe Ile
 210 215 220

Pro Gly Ser Val Glu Ser Gln Arg Val Gly Asp His Ser Thr Gly Thr
 225 230 235 240

Val Pro Glu Asn Asp Leu Tyr Lys Ala Val Leu Leu Gly Tyr Pro Ala
 245 250 255

Val Asp Lys Gly Lys Gln Glu Asp Met Pro Tyr Ile Pro Leu Met Glu
 260 265 270

Phe Ser Cys Ser His Ser His Leu Val Cys Leu Pro Ala Glu Trp Arg
 275 280 285

Thr Ser Cys Met Pro Ser Ser Lys Met Lys Glu Met Ser Ser Leu Phe

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

<210> 6
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 <212> PRT
 <213> Homo sapiens

<400> 6

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

Ile Ala Phe Leu Ser Leu Asp Ser Ser Leu Gln Gly Leu His Ser Val
 225 230 235 240

Ser Val Cys Ile Gly Phe Thr Arg Ala Phe Arg Met Val Trp Gln Asn
 245 250 255

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

Ile Ser Ser Thr Asp Ile Trp Trp Asn Arg Ser Leu Asp Thr Gly Leu
 275 280 285

Arg Leu Leu Leu Val Gly Ile Ile Arg Asp Arg Leu Ile Gln Phe Ile
 290 295 300

Ser Lys Leu Gln Phe Ala Val Thr Val Leu Leu Thr Ser Trp Thr Glu
 305 310 315 320

Lys Lys Gln Arg Arg Lys Thr Thr Ala Thr Leu Cys Ile Leu Asn Ile
 325 330 335

Val Phe Ser Pro Phe Val Leu Val Ile Ile Val Phe Ser Thr Leu Leu
 340 345 350

Ser Ser Pro Leu Leu Pro Leu Phe Thr Leu Pro Val Phe Leu Val Gly
 355 360 365

Phe Pro Arg Pro Ile Gln Ser Trp Pro Gly Ala Ala Gly Thr Thr Ala
 370 375 380

Cys Val Cys Ala Asp Thr Val Tyr Tyr Tyr Gln Met Val Pro Arg Leu
 385 390 395 400

Thr Ala Val Leu Gln Thr Ala Met Ala Ala Gly Ser Leu Gly Leu Leu
 405 410 415

Leu Pro Gly Ser His Tyr Leu Gly Arg Phe Gln Asp Arg Leu Met Trp
 420 425 430

Ile Met Ile Leu Glu Cys Gly Tyr Thr Tyr Cys Ser Ile Asn Ile Lys
 435 440 445

Gly Leu Glu Leu Gln Glu Thr Ser Cys His Thr Ala Glu Ala Arg Arg
 450 455 460

Val Asp Glu Val Phe Glu Asp Ala Phe Glu Gln Glu Tyr Thr Arg Val
465 470 475 480

Cys Ser Leu Asn Glu His Phe Gly Asn Val Leu Thr Pro Cys Thr Val
485 490 495

Leu Pro Val Lys Leu Tyr Ser Asp Ala Arg Asn Val Leu Ser Gly Ile
500 505 510

Ile Asp Ser His Glu Asn Leu Lys Glu Phe Lys Gly Asp Leu Ile Lys
515 520 525

Val Leu Val Trp Ile Leu Val Gln Tyr Cys Ser Lys Arg Pro Gly Met
530 535 540

Lys Glu Asn Val His Asn Thr Glu Asn Lys Gly Lys Ala Pro Leu Met
545 550 555 560

Leu Pro Ala Leu Asn Thr Leu Pro Pro Pro Lys Ser Pro Glu Asp Ile
565 570 575

Asp Ser Leu Asn Ser Glu Thr Phe Asn Asp Trp Ser Asp Asp Asn Ile
580 585 590

Phe Asp Asp Glu Pro Thr Ile Lys Lys Val Ile Glu Glu Lys His Gln
595 600 605

Leu Lys Asp Leu Pro Gly Thr Asn Leu Phe Ile Pro Gly Ser Val Glu
610 615 620

Ser Gln Arg Val Gly Asp His Ser Thr Gly Thr Val Pro Glu Asn Asp
625 630 635 640

Leu Tyr Lys Ala Val Leu Leu Gly Tyr Pro Ala Val Asp Lys Gly Lys
645 650 655

Gln Glu Asp Met Pro Tyr Ile Pro Leu Met Glu Phe Ser Cys Ser His
660 665 670

Ser His Leu Val Cys Leu Pro Ala Glu Trp Arg Thr Ser Cys Met Pro
675 680 685

Ser Ser Lys Met Lys Glu Met Ser Ser Leu Phe Pro Glu Asp Trp Tyr
690 695 700

Gln Phe Val Leu Arg Gln Leu Glu Cys Tyr His Ser Glu Glu Lys Ala
705 710 715 720

Ser Asn Val Leu Glu Glu Ile Ala Lys Asp Lys Val Leu Lys Asp Phe
725 730 735

Tyr Val His Thr Val Met Thr Cys Tyr Phe Ser Leu Phe Gly Ile Asp
740 745 750

Asn Met Ala Pro Ser Pro Gly His Ile Leu Arg Val Tyr Gly Gly Val
755 760 765

Leu Pro Trp Ser Val Ala Leu Asp Trp Leu Thr Glu Lys Pro Glu Leu
770 775 780

Phe Gln Leu Ala Leu Lys Ala Phe Arg Tyr Thr Leu Lys Leu Met Ile
785 790 795 800

Asp Lys Ala Ser Leu Gly Pro Ile Glu Asp Phe Arg Glu Leu Ile Lys
805 810 815

Tyr Leu Glu Glu Tyr Glu Arg Asp Trp Tyr Ile Gly Leu Val Ser Asp
820 825 830

Glu Lys Trp Lys Glu Ala Ile Leu Gln Glu Lys Pro Tyr Leu Phe Ser
835 840 845

Leu Gly Tyr Asp Ser Asn Met Gly Ile Tyr Thr Gly Arg Val Leu Ser
850 855 860

Leu Gln Glu Leu Leu Ile Gln Val Gly Lys Leu Asn Pro Glu Ala Val
865 870 875 880

Arg Gly Gln Trp Ala Asn Leu Ser Trp Glu Leu Leu Tyr Ala Thr Asn
885 890 895

Asp Asp Glu Glu Arg Tyr Ser Ile Gln Ala His Pro Leu Leu Leu Arg
900 905 910

Asn Leu Thr Val Gln Ala Ala Glu Pro Pro Leu Gly Tyr Pro Ile Tyr
915 920 925

Ser Ser Lys Pro Leu His Ile His Leu Tyr
930 935

<210> 7
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<212> PRT
<213> Homo sapiens

<400> 7

Met Ser Pro Asp Val Pro Leu Leu Asn Asp Tyr Lys Gln Asp Phe Phe
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Leu Lys Arg Phe Pro Gln Thr Val Leu Gly Gly Pro Arg Phe Lys Leu
 20 25 30

Gly Tyr Cys Ala Pro Pro Tyr Ile Tyr Val Asn Gln Ile Ile Leu Phe
 35 40 45

Leu Met Pro Trp Val Trp Gly Gly Val Gly Thr Leu Leu Tyr Gln Leu
 50 55 60

Gly Ile Leu Lys Asp Tyr Tyr Thr Ala Ala Leu Ser Gly Gly Leu Met
 65 70 75 80

Leu Phe Thr Ala Phe Val Ile Gln Phe Thr Ser Leu Tyr Ala Lys Asn
 85 90 95

Lys Ser Thr Thr Val Glu Arg Ile Leu Thr Thr Asp Ile Leu Ala Glu
 100 105 110

Glu Asp Glu His Glu Phe Thr Ser Cys Thr Gly Ala Glu Thr Val Lys
 115 120 125

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

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

Asn Arg Ile Thr Leu Leu Tyr Gly Ser Thr Gly Gly Thr Ala Leu Leu
 165 170 175

Phe Phe Phe Gly Trp Met Thr Leu Cys Ile Ala Glu Tyr Ser Leu Ile
 180 185 190

Val Asn Thr Ala Thr Glu Thr Ala Thr Phe Gln Thr Gln Asp Thr Tyr
 195 200 205

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

Val Asp Leu Ala His Arg
 225 230

<210> 8
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 <213> Homo sapiens

<400> 8

Met Ser Pro Asp Val Pro Leu Leu Asn Asp Tyr Lys Gln Asp Phe Phe
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Leu Lys Arg Phe Pro Gln Thr Val Leu Gly Gly Pro Arg Phe Lys Leu
 20 25 30

Gly Tyr Cys Ala Pro Pro Tyr Ile Tyr Val Asn Gln Ile Ile Leu Phe
 35 40 45

Leu Met Pro Trp Val Trp Gly Gly Val Gly Thr Leu Leu Tyr Gln Leu
 50 55 60

Gly Ile Leu Lys Asp Tyr Tyr Thr Ala Ala Leu Ser Gly Gly Leu Met
 65 70 75 80

Leu Phe Thr Ala Phe Val Ile Gln Phe Thr Ser Leu Tyr Ala Lys Asn
 85 90 95

Lys Ser Thr Thr Val Glu Arg Ile Leu Thr Thr Asp Ile Leu Ala Glu
 100 105 110

Glu Asp Glu His Glu Phe Thr Ser Cys Thr Gly Ala Glu Thr Val Lys
 115 120 125

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

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

Asn Arg Ile Thr Leu Leu Tyr Gly Ser Thr Gly Gly Thr Ala Leu Leu
 165 170 175

Phe Phe Phe Gly Trp Met Thr Leu Cys Ile Ala Glu Tyr Ser Leu Ile
 180 185 190

Val Asn Thr Ala Thr Glu Thr Ala Thr Phe Gln Thr Gln Asp Thr Tyr
 195 200 205

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

Val Asp Leu Ala His Arg Phe Val Val Asn Met Pro Ala Leu Glu His
 225 230 235 240

Met Asn Gln Ile Leu His Ile Leu Phe Val Phe Leu Pro Phe Leu Trp
 245 250 255

Ala Leu Gly Thr Leu Pro Pro Pro Asp Ala Leu Leu Leu Trp Ala Met
 260 265 270

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

Leu Arg Leu Leu Val Met Phe Ile Met Ser Ala Gly Thr Ala Ile Ala
 290 295 300

Ser Tyr Phe Ile Pro Ser Thr Val Gly Val Val Leu Phe Met Thr Gly
 305 310 315 320

Phe Gly Phe Leu Leu Ser Leu Asn Leu Ser Asp Met Gly His Lys Ile
 325 330 335

Gly Thr Lys Ser Lys Asp Leu Pro Ser Gly Pro Glu Lys His Phe Ser
 340 345 350

Trp Lys Glu Cys Leu Phe Tyr Ile Ile Ile Leu Val Leu Ala Leu Leu
 355 360 365

Glu Thr Ser Leu Leu His His Phe Ala Gly Phe Ser Gln Ile Ser Lys
 370 375 380

Ser Asn Ser Gln Ala Ile Val Gly Tyr Gly Leu Met Ile Leu Leu Ile
 385 390 395 400

Ile Leu Trp Ile Leu Arg Glu Ile Gln Ser Val Tyr Ile Ile Gly Ile
 405 410 415

Phe Arg Asn Pro Phe Tyr Pro Lys Asp Val Gln Thr Val Thr Val Phe
 420 425 430

Phe Glu Lys Gln Thr Arg Leu Met Lys Ile Gly Ile Val Arg Arg Ile
 435 440 445

Leu Leu Thr Leu Val Ser Pro Phe Ala Met Ile Ala Phe Leu Ser Leu
 450 455 460

13

Asp Ser Ser Leu Gln Gly Leu His Ser Val Ser Val Cys Ile Gly Phe
 465 470 475 480

Thr Arg Ala Phe Arg Met Val Trp Gln Asn Thr Glu Asn Ala Leu Leu
 485 490 495

Glu Thr Val Ile Val Ser Thr Val His Leu Ile Ser Ser Thr Asp Ile
 500 505 510

Trp Trp Asn Arg Ser Leu Asp Thr Gly Leu Arg Leu Leu Leu Val Gly
 515 520 525

Ile Ile Arg Asp Arg Leu Ile Gln Phe Ile Ser Lys Leu Gln Phe Ala
 530 535 540

Val Thr Val Leu Leu Thr Ser Trp Thr Glu Lys Lys Gln Arg Arg Lys
 545 550 555 560

Thr Thr Ala Thr Leu Cys Ile Leu Asn Ile Val Phe Ser Pro Phe Val
 565 570 575

Leu Val Ile Ile Val Phe Ser Thr Leu Leu Ser Ser Pro Leu Leu Pro
 580 585 590

Leu Phe Thr Leu Pro Val Phe Leu Val Gly Phe Pro Arg Pro Ile Gln
 595 600 605

Ser Trp Pro Gly Ala Ala Gly Thr Thr Ala Cys Val Cys Ala Asp Thr
 610 615 620

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

Ala Met Ala Ala Gly Ser Leu Gly Leu Leu Leu Pro Gly Ser His Tyr
 645 650 655

Leu Gly Arg Phe Gln Asp Arg Leu Met Trp Ile Met Ile Leu Glu Cys
 660 665 670

Gly Tyr Thr Tyr Cys Ser Ile Asn Ile Lys Gly Leu Glu Leu Gln Glu
 675 680 685

Thr Ser Cys His Thr Ala Glu Ala Arg Arg Val Asp Glu Val Phe Glu
 690 695 700

Asp Ala Phe Glu Gln Glu Tyr Thr Arg Val Cys Ser Leu Asn Glu His
 705 710 715 720

Phe	Gly	Asn	Val	Leu	Thr	Pro	Cys	Thr	Val	Leu	Pro	Val	Lys	Leu	Tyr	725	730	735	
Ser	Asp	Ala	Arg	Asn	Val	Leu	Ser	Gly	Ile	Ile	Asp	Ser	His	Glu	Asn	740	745	750	
Leu	Lys	Glu	Phe	Lys	Gly	Asp	Leu	Ile	Lys	Val	Leu	Val	Trp	Ile	Leu	755	760	765	
Val	Gln	Tyr	Cys	Ser	Lys	Arg	Pro	Gly	Met	Lys	Glu	Asn	Val	His	Asn	770	775	780	
Thr	Glu	Asn	Lys	Gly	Lys	Ala	Pro	Leu	Met	Leu	Pro	Ala	Leu	Asn	Thr	785	790	795	800
Leu	Pro	Pro	Pro	Lys	Ser	Pro	Glu	Asp	Ile	Asp	Ser	Leu	Asn	Ser	Glu	805	810	815	
Thr	Phe	Asn	Asp	Trp	Ser	Asp	Asp	Asn	Ile	Phe	Asp	Asp	Glu	Pro	Thr	820	825	830	
Ile	Lys	Lys	Val	Ile	Glu	Glu	Lys	His	Gln	Leu	Lys	Asp	Leu	Pro	Gly	835	840	845	
Thr	Asn	Leu	Phe	Ile	Pro	Gly	Ser	Val	Glu	Ser	Gln	Arg	Val	Gly	Asp	850	855	860	
His	Ser	Thr	Gly	Thr	Val	Pro	Glu	Asn	Asp	Leu	Tyr	Lys	Ala	Val	Leu	865	870	875	880
Leu	Gly	Tyr	Pro	Ala	Val	Asp	Lys	Gly	Lys	Gln	Glu	Asp	Met	Pro	Tyr	885	890	895	
Ile	Pro	Leu	Met	Glu	Phe	Ser	Cys	Ser	His	Ser	His	Leu	Val	Cys	Leu	900	905	910	
Pro	Ala	Glu	Trp	Arg	Thr	Ser	Cys	Met	Pro	Ser	Ser	Lys	Met	Lys	Glu	915	920	925	
Met	Ser	Ser	Leu	Phe	Pro	Glu	Asp	Trp	Tyr	Gln	Phe	Val	Leu	Arg	Gln	930	935	940	
Leu	Glu	Cys	Tyr	His	Ser	Glu	Glu	Lys	Ala	Ser	Asn	Val	Leu	Glu	Glu	945	950	955	960

15

Ile Ala Lys Asp Lys Val Leu Lys Asp Phe Tyr Val His Thr Val Met
965 970 975

Thr Cys Tyr Phe Ser Leu Phe Gly Ile Asp Asn Met Ala Pro Ser Pro
980 985 990

Gly His Ile Leu Arg Val Tyr Gly Gly Val Leu Pro Trp Ser Val Ala
995 1000 1005

Leu Asp Trp Leu Thr Glu Lys Pro Glu Leu Phe Gln Leu Ala Leu
1010 1015 1020

Lys Ala Phe Arg Tyr Thr Leu Lys Leu Met Ile Asp Lys Ala Ser
1025 1030 1035

Leu Gly Pro Ile Glu Asp Phe Arg Glu Leu Ile Lys Tyr Leu Glu
1040 1045 1050

Glu Tyr Glu Arg Asp Trp Tyr Ile Gly Leu Val Ser Asp Glu Lys
1055 1060 1065

Trp Lys Glu Ala Ile Leu Gln Glu Lys Pro Tyr Leu Phe Ser Leu
1070 1075 1080

Gly Tyr Asp Ser Asn Met Gly Ile Tyr Thr Gly Arg Val Leu Ser
1085 1090 1095

Leu Gln Glu Leu Leu Ile Gln Val Gly Lys Leu Asn Pro Glu Ala
1100 1105 1110

Val Arg Gly Gln Trp Ala Asn Leu Ser Trp Glu Leu Leu Tyr Ala
1115 1120 1125

Thr Asn Asp Asp Glu Glu Arg Tyr Ser Ile Gln Ala His Pro Leu
1130 1135 1140

Leu Leu Arg Asn Leu Thr Val Gln Ala Ala Glu Pro Pro Leu Gly
1145 1150 1155

Tyr Pro Ile Tyr Ser Ser Lys Pro Leu His Ile His Leu Tyr
1160 1165 1170

<210> 9
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<212> PRT
<213> Homo sapiens
<400> 9

Met	Pro	Ala	Leu	Glu	His	Met	Asn	Gln	Ile	Leu	His	Ile	Leu	Phe	Val
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Phe	Leu	Pro	Phe	Leu	Trp	Ala	Leu	Gly	Thr	Leu	Pro	Pro	Pro	Asp	Ala
			20					25					30		
Leu	Leu	Leu	Trp	Ala	Met	Glu	Gln	Val	Leu	Glu	Phe	Gly	Leu	Gly	Gly
		35					40					45			
Ser	Ser	Met	Ser	Thr	His	Leu	Arg	Leu	Leu	Val	Met	Phe	Ile	Met	Ser
	50					55					60				
Ala	Gly	Thr	Ala	Ile	Ala	Ser	Tyr	Phe	Ile	Pro	Ser	Thr	Val	Gly	Val
65					70					75					80
Val	Leu	Phe	Met	Thr	Gly	Phe	Gly	Phe	Leu	Leu	Ser	Leu	Asn	Leu	Ser
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Asp	Met	Gly	His	Lys	Ile	Gly	Thr	Lys	Ser	Lys	Asp	Leu	Pro	Ser	Gly
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Arg Leu Leu Leu Val Gly Ile Ile Arg Asp Arg Leu Ile Gln Phe Ile	290	295		300
Ser Lys Leu Gln Phe Ala Val Thr Val Leu Leu Thr Ser Trp Thr Glu	305	310		315
Lys Lys Gln Arg Arg Lys Thr Thr Ala Thr Leu Cys Ile Leu Asn Ile	325	330		335
Val Phe Ser Pro Phe Val Leu Val Ile Ile Val Phe Ser Thr Leu Leu	340	345		350
Ser Ser Pro Leu Leu Pro Leu Phe Thr Leu Pro Val Phe Leu Val Gly	355	360		365
Phe Pro Arg Pro Ile Gln Ser Trp Pro Gly Ala Ala Gly Thr Thr Ala	370	375		380
Cys Val Cys Ala Asp Thr Val Tyr Tyr Tyr Gln Met Val Pro Arg Leu	385	390		395
Thr Ala Val Leu Gln Thr Ala Met Ala Ala Gly Ser Leu Gly Leu Leu	405	410		415
Leu Pro Gly Ser His Tyr Leu Gly Arg Phe Gln Asp Arg Leu Met Trp	420	425		430
Ile Met Ile Leu Glu Cys Gly Tyr Thr Tyr Cys Ser Ile Asn Ile Lys	435	440		445
Gly Leu Glu Leu Gln Glu Thr Ser Cys His Thr Ala Glu Ala Arg Arg	450	455		460
Val Asp Glu Val Phe Glu Asp Ala Phe Glu Gln Glu Tyr Thr Arg Val	465	470		475
Cys Ser Leu Asn Glu His Phe Gly Asn Val Leu Thr Pro Cys Thr Val	485	490		495

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<211> 132
<212> PRT
<213> Homo sapiens

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<400> 19

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Phe Met Leu Arg Gly Val Cys Arg Ile Asp Ala Gly Ser Leu Asn Pro
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Glu Leu Phe Leu Pro Met Leu His Glu Glu Asp Trp Cys Trp Glu Ile
 35 40 45

Ala Gly His Val Asp Ser Gln Glu Leu Phe Val Gly Leu Phe Ser Ser
 50 55 60

Thr Ser Thr Gly His Ala Glu Leu Asp Lys Lys Val Asn Gly Leu Tyr
 65 70 75 80

Tyr Asp Ser Val Phe Gln Leu Ser Leu Asp Arg Met Arg His Thr Arg
 85 90 95

Ser Met Ala Arg Val Glu Arg Leu Arg His Arg Lys Ala Ile Gln Lys
 100 105 110

Lys Thr Gln Leu Val His His Leu Leu Phe Lys Gly Trp Ala Ser Asp
 115 120 125

Glu Thr Glu Ile
 130

<210> 20

<211> 399

<212> DNA

<213> Homo sapiens

<400> 20

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 tatgactctg tattccagtt gtctctggac cgtatgcgtc atacaaggag tatggctaga 300
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<210> 21

<211> 316

<212> PRT

<213> Homo sapiens

<400> 21

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

Ser Tyr Gly Ala Glu Asp Glu Val Glu Glu Glu Ser Asp Lys Ala Ala
 50 55 60

Leu Leu Gln Glu Gln Gln Gln Gln Gln Gln Pro Gly Phe Trp Thr Phe
 65 70 75 80

Ser Tyr Tyr Gln Ser Phe Phe Asp Val Asp Thr Ser Gln Val Leu Asp
 85 90 95

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

His His Leu Arg Asn Arg Pro Asp Leu Tyr Gly Pro Phe Trp Ile Cys
 115 120 125

Ala Thr Leu Ala Phe Val Leu Ala Val Thr Gly Asn Leu Thr Leu Val
 130 135 140

Leu Ala Gln Arg Arg Asp Pro Ser Ile His Tyr Ser Pro Gln Phe His
 145 150 155 160

Lys Val Thr Val Ala Gly Ile Ser Ile Tyr Cys Tyr Ala Trp Leu Val
 165 170 175

Pro Leu Ala Leu Trp Gly Phe Leu Arg Trp Arg Lys Gly Val Gln Glu
 180 185 190

Arg Met Gly Pro Tyr Thr Phe Leu Glu Thr Val Cys Ile Tyr Gly Tyr
 195 200 205

Ser Leu Phe Val Phe Ile Pro Met Val Val Leu Trp Leu Ile Pro Val
 210 215 220

Pro Trp Leu Gln Trp Leu Phe Gly Ala Leu Ala Leu Gly Leu Ser Ala

Ala Thr Leu Ala Phe Val Leu Ala Val Thr Gly Asn Leu Thr Leu Val
 130 135 140

Leu Ala Gln Arg Arg Asp Pro Ser Ile His Tyr Ser Pro Gln Phe His
 145 150 155 160

Lys Val Thr Val Ala Gly Ile Ser Ile Tyr Cys Tyr Ala Trp Leu Val
 165 170 175

Pro Leu Ala Leu Trp Gly Phe Leu Arg Trp Arg Lys Gly Val Gln Glu
 180 185 190

Arg Met Gly Pro Tyr Thr Phe Leu Glu Thr Val Cys Ile Tyr Gly Tyr
 195 200 205

Ser Leu Phe Val Phe Ile Pro Met Val Val Leu Trp Leu Ile Pro Val
 210 215 220

Pro Trp Leu Gln Trp Leu Phe Gly Ala Leu Ala Leu Gly Leu Ser Ala
 225 230 235 240

Ala Gly Leu Val Phe Thr Leu Trp Pro Val Val Arg Glu Asp Thr Arg
 245 250 255

Leu Val Ala Thr Val Leu Leu Ser Val Val Val Leu Leu His Ala Leu
 260 265 270

Leu Ala Met Gly Cys Lys Leu Tyr Phe Phe Gln Ser Leu Pro Pro Glu
 275 280 285

Asn Val Ala Pro Pro Pro Gln Ile Thr Ser Leu Pro Ser Asn Ile Ala
 290 295 300

Leu Ser Pro Thr Leu Pro Gln Ser Leu Ala Pro Ser
 305 310 315

<210> 23

<211> 1210

<212> DNA

<213> Homo sapiens

<400> 23

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cgagctgacc ttccatgaat tcgaggaggc cactaatctt ctggctgaca cccagatgc 180

agccaccacc agcagaagcg atcagctgac cccacaaggg cacgtggctg tggccgtggg 240

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 <211> 1502
 <212> DNA
 <213> Homo sapiens

<400> 24
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 gttccacaag gtgaccgtgg caggcatcag catctactgc tatgcgtggc tgggtgccct 660


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<210> 25

<211> 131

<212> PRT

<213> Homo sapiens

<400> 25

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

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Ser Ser Trp Ser Glu Gly Glu Asp Arg Gly Gln Ser Pro Glu Gly Val
20           25           30

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Leu Leu Thr Trp Val Phe Gly Thr Lys Cys Val Met His Pro Cys Glu
35           40           45

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Glu Thr Thr Lys Gln Ala Leu Cys Glu Gln Gln Gly Cys Leu Phe His
50           55           60

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

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Ser Phe Lys Trp Glu Asn Ser Ile Tyr Leu His Ala Thr Leu Phe Leu
85           90           95

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Ile Gly Glu Tyr Leu His Leu Ala Phe Tyr Tyr Phe Leu Leu Val Leu
 100 105 110

Tyr Ile Leu Cys Ser Phe Leu Ser Tyr Cys Leu Leu Leu Trp Leu Gly
 115 120 125

Ser Phe Leu
 130

<210> 26
 <211> 2950
 <212> DNA
 <213> Homo sapiens

<400> 26
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<210> 27
<211> 173
<212> PRT
<213> Homo sapiens

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<400> 27

Met Thr Leu Cys His Arg Asp Ser Phe Gly Ser Trp His Leu Phe His
 1 5 10 15

Leu Leu Leu Leu Glu Tyr Met Ile His Ile Leu Gln Ser Cys Leu Glu
 20 25 30

Glu Glu Glu Glu Glu Glu Asp Met Gly Thr Val Lys Glu Met Leu Pro
 35 40 45

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

Asn Ser Ser Leu Ser Gln Ala Cys Ala Ser Pro Ser Met Glu Pro Leu
 65 70 75 80

Gly Val Met Pro Thr His Met Gly Gln Gly Arg Tyr Pro Val Gly Val
 85 90 95

Ser Asn Met Val Leu Arg Ile Leu Gly Phe Leu Val Asp Thr Ala Met
 100 105 110

Gly Asn Lys Leu Ile Gln Val Leu Leu Glu Asp Glu Thr Thr Glu Ser
 115 120 125

Ala Val Lys Leu Ser Leu Pro Met Gly Gln Glu Ala Leu Ile Thr Leu
 130 135 140

Lys Asp Gly Gln Gln Phe Val Ile Gln Ile Ser Asp Val Pro Gln Ser
 145 150 155 160

Ser Glu Asp Ile Tyr Phe Arg Glu Asn Asn Ala Asn Val
 165 170

<210> 28

<211> 1907

<212> DNA

<213> Homo sapiens

<400> 28

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atgtatgaga ttacgtgga gacctgtggg caaaacactg agaaccaagt caaccggcc 180

acctttggga agcttgtgag attgggtttt ccggaccttg gcacccggag gctgggcact 240

agaggaagtg ccaggatatca ttatgatgga atctgtatca agaaaagctc tttcttctat 300

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<210> 29
<211> 458
<212> PRT
<213> Homo sapiens
<400> 29

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

245

250

255

Ala Pro Ala Pro Glu Lys Ser Arg Lys His Leu Ala Leu Tyr Ser Leu
 260 265 270

Ala Ile Phe Val Val Ile Thr Val His Phe Gly Ala Gln Asp Ile Leu
 275 280 285

Thr Leu Tyr Glu Leu Ser Thr Pro Leu Cys Trp Asp Ser Lys Leu Ile
 290 295 300

Gly Tyr Gly Ser Ala Ala Gln His Leu Pro Tyr Leu Thr Ser Leu Leu
 305 310 315 320

Ala Leu Lys Leu Leu Gln Tyr Cys Leu Ala Asp Ala Trp Val Ala Glu
 325 330 335

Ile Gly Leu Ala Phe Asn Ile Leu Gly Met Val Val Phe Ala Phe Ala
 340 345 350

Thr Ile Thr Pro Leu Met Phe Thr Gly Tyr Gly Leu Leu Phe Leu Ser
 355 360 365

Leu Val Ile Thr Pro Val Ile Arg Ala Lys Leu Ser Lys Leu Val Arg
 370 375 380

Glu Thr Glu Gln Gly Ala Leu Phe Ser Ala Val Ala Cys Val Asn Ser
 385 390 395 400

Leu Ala Met Leu Thr Ala Ser Gly Phe Asn Ser Leu Tyr Pro Ala Thr
 405 410 415

Leu Asn Phe Met Lys Gly Phe Pro Phe Leu Leu Gly Ala Gly Leu Leu
 420 425 430

Leu Ile Pro Ala Val Leu Ile Gly Met Leu Glu Lys Ala Asp Pro His
 435 440 445

Leu Glu Phe Gln Gln Phe Pro Gln Ser Pro
 450 455

<210> 30

<211> 430

<212> PRT

<213> Homo sapiens

<400> 30

56

Met	Glu	Gly	Ser	Ala	Ser	Pro	Pro	Glu	Lys	Pro	Arg	Ala	Arg	Pro	Ala
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Ala	Ala	Val	Leu	Cys	Arg	Gly	Pro	Val	Glu	Pro	Leu	Val	Phe	Leu	Ala
			20					25					30		
Asn	Phe	Ala	Leu	Val	Leu	Gln	Gly	Pro	Leu	Thr	Thr	Gln	Tyr	Leu	Trp
		35					40					45			
His	Arg	Phe	Ser	Ala	Asp	Leu	Gly	Tyr	Asn	Gly	Thr	Arg	Gln	Arg	Gly
	50					55					60				
Gly	Cys	Ser	Asn	Arg	Ser	Ala	Asp	Pro	Thr	Met	Gln	Glu	Val	Glu	Thr
65					70					75				80	
Leu	Thr	Ser	His	Trp	Thr	Leu	Tyr	Met	Asn	Val	Gly	Gly	Phe	Leu	Val
				85					90					95	
Gly	Leu	Phe	Ser	Ser	Thr	Leu	Leu	Gly	Ala	Trp	Ser	Asp	Ser	Val	Gly
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Arg	Arg	Pro	Leu	Leu	Val	Leu	Ala	Ser	Leu	Gly	Leu	Leu	Leu	Gln	Ala
		115					120					125			
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	130					135					140				
Val	Leu	Gly	Arg	Ile	Leu	Cys	Ala	Leu	Leu	Gly	Asp	Phe	Gly	Gly	Leu
145					150					155					160
Leu	Ala	Ala	Ser	Phe	Ala	Ser	Val	Ala	Asp	Val	Ser	Ser	Ser	Arg	Ser
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<210> 33
<211> 402
<212> PRT
<213> Homo sapiens

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<400> 33

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Ala Ala Phe Leu Pro Pro Pro Gln Cys Thr Gln Asp Pro Ala Met Val
 20 25 30

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

Cys Thr Gln Ala Thr Arg Ala Tyr Ile Gln Glu Phe Gln Glu Phe Ser
 50 55 60

Lys Asn Ile Ser Val Met Leu Gly Arg Cys Gln Thr Tyr Thr Ser Glu
 65 70 75 80

Tyr Lys Ser Ala Val Gly Asn Leu Ala Leu Arg Val Glu Arg Ala Gln
 85 90 95

Arg Glu Ile Asp Tyr Ile Gln Tyr Leu Arg Glu Ala Asp Glu Cys Ile
 100 105 110

Glu Ser Glu Asp Lys Thr Leu Ala Glu Met Leu Leu Gln Glu Ala Glu
 115 120 125

Glu Glu Lys Lys Ile Arg Thr Leu Leu Asn Ala Ser Cys Asp Asn Met
 130 135 140

Leu Met Gly Ile Lys Ser Leu Lys Ile Val Lys Lys Met Met Asp Thr
 145 150 155 160

His Gly Ser Trp Met Lys Asp Ala Val Tyr Asn Ser Pro Lys Val Tyr
 165 170 175

Leu Leu Ile Gly Ser Arg Asn Asn Thr Val Trp Glu Phe Ala Asn Ile
 180 185 190

Arg Ala Phe Met Glu Asp Asn Thr Lys Pro Ala Pro Arg Lys Gln Ile
 195 200 205

Leu Thr Leu Ser Trp Gln Gly Thr Gly Gln Val Ile Tyr Lys Gly Phe
 210 215 220

Leu Phe Phe His Asn Gln Ala Thr Ser Asn Glu Ile Ile Lys Tyr Asn
 225 230 235 240

Leu Gln Lys Arg Thr Val Glu Asp Arg Met Leu Leu Pro Gly Gly Val
245 250 255

Gly Arg Ala Leu Val Tyr Gln His Ser Pro Ser Thr Tyr Ile Asp Leu
260 265 270

Ala Val Asp Glu His Gly Leu Trp Ala Ile His Ser Gly Pro Gly Thr
275 280 285

His	Ser	His	Leu	Val	Leu	Thr	Lys	Ile	Glu	Pro	Gly	Thr	Leu	Gly	Val
	290					295					300				

Glu His Ser Trp Asp Thr Pro Cys Arg Ser Gln Asp Ala Glu Ala Ser
305 310 315 320

Phe Leu Leu Cys Gly Val Leu Tyr Val Val Tyr Ser Thr Gly Gly Gln
325 330 335

Gly Pro His Arg Ile Thr Cys Ile Tyr Asp Pro Leu Gly Thr Ile Ser
340 345 350

Glu Glu Asp Leu Pro Asn Leu Phe Phe Pro Lys Arg Pro Arg Ser His
355 360 365

Ser Met Ile His Tyr Asn Pro Arg Asp Lys Gln Leu Tyr Ala Trp Asn
370 375 380

Glu Gly Asn Gln Ile Ile Tyr Lys Leu Gln Thr Lys Arg Lys Leu Pro
385 390 395 400

Leu Lys

<210> 34

<211> 2786

<212> DNA

<213> Homo sapiens

<400> 34

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aacagatgct ggacccaggg agctctctgc cacaggtcag tctacaaggc ctcagggacc 180

aacttgccaa cagctggact tgatcactag ctggcaaact gagctcacgt atcgggtgga 240

ataacaagcg gactttgctc tctgctgtgc aaaacgctgt ttttagagga tttgccacag 300

cagcggatag agcaggagag caccaccgga gcccttgaga catccttgag aagagccaca 360

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tgcattgctg	gttctgttcc	ttgcagcttt	tctgcccccg	ccgcagtgta	cccaggaccc	480
agccatggtg	cattacatct	accagcgctt	tcgagtcttg	gagcaagggc	tggaaaaatg	540
taccaagca	acgagggcat	acattcaaga	attccaagag	ttctcaaaaa	atatactgt	600
catgctggga	agatgtcaga	cctacacaag	tgagtacaag	agtgcagtgg	gtaacttggc	660
actgagagtt	gaacgtgccc	aacgggagat	tgactacata	caataccttc	gagaggctga	720
cgagtgcac	gaatcagagg	acaagacact	ggcagaaatg	ttgctccaag	aagctgaaga	780
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catgatccat	tacaacccca	gagataagca	gctctatgcc	tggaatgaag	gaaaccagat	1560
catttacaaa	ctccagacaa	agagaaagct	gcctctgaag	taatgcatta	cagctgtgag	1620
aaagagcact	gtggcctttg	cagctgttct	acaggacagt	gaggctatag	ccccttcaca	1680
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cctttcccaa	atgtcactgc	cttaggtatc	ttccaagagc	ttagatgaga	gcataatc	1800
aggaaagttt	caacaatgtc	cattactccc	ccaaacctcc	tggctctcaa	ggatgaccac	1860
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tttctctccc	ctggcctttg	ctgaagctct	tccctctttt	tcaaagtgtc	attgatattc	2040
tcccattttc	actgcccac	taaaatacta	ttaatatttc	tttcttttct	tttctttttt	2100
ttgagacaag	gtctcactat	gttgcccagg	ctggtctcaa	actccagagc	tcaagagatc	2160
ctcctgcctc	agcctcctaa	gtacctggga	ttacaggcat	gtgccaccac	acctggctta	2220

```

aaatactatt tcttattgag gtttaacctc tatttcccct agccctgtcc ttccactaag 2280
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gagtgtttgc acatcattta attctcgttt cacctttgtg aaacatgcac aagtctttac 2400
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cagaaaacca gtctaagggt gaggacccca actctagcct cctcttgtct tgctgtcctc 2700
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gttatatttg cccacatacc ctaagc 2786

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<210> 35
<211> 1328
<212> PRT
<213> Homo sapiens

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<400> 35

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Met Ser Ser Gly Asp Pro Ala His Leu Gly Leu Cys Leu Trp Leu Trp
1          5          10          15

```

```

Leu Gly Ala Thr Leu Gly Arg Glu Gln Val Gln Ala Ser Gly Leu Leu
          20          25          30

```

```

Arg Leu Ala Val Leu Pro Glu Asp Arg Leu Gln Met Lys Trp Arg Glu
          35          40          45

```

```

Ser Glu Gly Ser Gly Leu Gly Tyr Leu Val Gln Val Lys Pro Met Ala
          50          55          60

```

```

Gly Asp Ser Glu Gln Glu Val Ile Leu Thr Thr Lys Thr Pro Lys Ala
          65          70          75          80

```

```

Thr Val Gly Gly Leu Ser Pro Ser Lys Gly Tyr Thr Leu Gln Ile Phe
          85          90          95

```

```

Glu Leu Thr Gly Ser Gly Arg Phe Leu Leu Ala Arg Arg Glu Phe Val
          100          105          110

```

```

Ile Glu Asp Leu Lys Ser Ser Ser Leu Asp Arg Ser Ser Gln Arg Pro
          115          120          125

```

```

Leu Gly Ser Gly Ala Pro Glu Pro Thr Pro Ser His Thr Gly Ser Pro

```

130		135		140
Asp 145	Pro	Glu	Gln	Ala
	Ser	Glu	Pro	Gln
		Val	Ala	Phe
			Thr	Pro
			Ser	Gln
				160
Asp	Pro	Arg	Thr	Pro
	Gly	Gly	Ser	Glu
		Trp	Arg	Glu
			Thr	Gly
			Pro	Gln
				175
Phe	Arg	Cys	Leu	Pro
		Pro	Val	Pro
			Ala	Asp
			Met	Val
			Phe	Leu
			Val	Asp
				190
Gly	Ser	Trp	Ser	Ile
			Gly	His
			Ser	His
			Phe	Gln
			Gln	Val
			Lys	Asp
			Phe	
				205
Leu	Ala	Ser	Val	Ile
		Ala	Pro	Phe
			Glu	Ile
			Gly	Pro
			Asp	Lys
			Val	Gln
				220
Val	Gly	Leu	Thr	Gln
		Tyr	Ser	Gly
			Asp	Ala
			Gln	Thr
			Glu	Trp
			Asp	Leu
				240
Asn	Ser	Leu	Ser	Thr
		Lys	Glu	Gln
			Val	Leu
			Ala	Ala
			Val	Arg
			Arg	Leu
				255
Arg	Tyr	Lys	Gly	Gly
		Asn	Thr	Phe
			Thr	Gly
			Leu	Ala
			Leu	Thr
			His	Val
				270
Leu	Gly	Gln	Asn	Leu
		Gln	Pro	Ala
			Ala	Gly
			Leu	Arg
			Pro	Glu
			Ala	Ala
				285
Lys	Val	Val	Ile	Leu
		Val	Thr	Asp
			Gly	Lys
			Ser	Gln
			Asp	Asp
			Val	His
				300
Thr	Ala	Ala	Arg	Val
		Leu	Lys	Asp
			Leu	Gly
			Val	Asn
			Val	Phe
			Ala	Val
				320
Gly	Val	Lys	Asn	Ala
		Asp	Glu	Ala
			Glu	Leu
			Arg	Leu
			Leu	Ala
			Ser	Pro
				335
Pro	Arg	Asp	Ile	Thr
		Val	His	Ser
			Val	Leu
			Asp	Phe
			Leu	Gln
			Leu	Gly
				350
Ala	Leu	Ala	Gly	Leu
		Leu	Ser	Arg
			Leu	Ile
			Cys	Gln
			Arg	Leu
			Gln	Gly
				365
Gly	Ser	Pro	Arg	Gln
		Gly	Pro	Ala
			Ala	Ala
			Ala	Pro
			Ala	Leu
			Asp	Thr
			Leu	
				380

Pro Ala Pro Thr Ser Leu Val Leu Ser Gln Val Thr Ser Ser Ser Ile
 385 390 395 400

Arg Leu Ser Trp Thr Pro Ala Pro Arg His Pro Leu Lys Tyr Leu Ile
 405 410 415

Val Trp Arg Ala Ser Arg Gly Gly Thr Pro Arg Glu Val Val Val Glu
 420 425 430

Gly Pro Ala Ala Ser Thr Glu Leu His Asn Leu Ala Ser Arg Thr Glu
 435 440 445

Tyr Leu Val Ser Val Phe Pro Ile Tyr Glu Gly Gly Val Gly Glu Gly
 450 455 460

Leu Arg Gly Leu Val Thr Thr Ala Pro Leu Pro Pro Pro Arg Ala Leu
 465 470 475 480

Thr Leu Ala Ala Val Thr Pro Arg Thr Val His Leu Thr Trp Gln Pro
 485 490 495

Ser Ala Gly Ala Thr His Tyr Leu Val Arg Cys Ser Pro Ala Ser Pro
 500 505 510

Lys Gly Glu Glu Glu Glu Arg Glu Val Gln Val Gly Arg Pro Glu Val
 515 520 525

Leu Leu Asp Gly Leu Glu Pro Gly Arg Asp Tyr Glu Val Ser Val Gln
 530 535 540

Ser Leu Arg Gly Pro Glu Gly Ser Glu Ala Arg Gly Ile Arg Ala Arg
 545 550 555 560

Thr Pro Thr Leu Ala Pro Pro Arg His Leu Gly Phe Ser Asp Val Ser
 565 570 575

His Asp Ala Ala Arg Val Phe Trp Glu Gly Ala Pro Arg Pro Val Arg
 580 585 590

Leu Val Arg Val Thr Tyr Val Ser Ser Glu Gly Gly His Ser Gly Gln
 595 600 605

Thr Glu Ala Pro Gly Asn Ala Thr Ser Ala Thr Leu Gly Pro Leu Ser
 610 615 620

Ser Ser Thr Thr Tyr Thr Val Arg Val Thr Cys Leu Tyr Pro Gly Gly

625					630					635					640
Gly	Ser	Ser	Thr	Leu	Thr	Gly	Arg	Val	Thr	Thr	Lys	Lys	Ala	Pro	Ser
				645					650					655	
Pro	Ser	Gln	Leu	Ser	Met	Thr	Glu	Leu	Pro	Gly	Asp	Ala	Val	Gln	Leu
			660					665					670		
Ala	Trp	Val	Ala	Ala	Ala	Pro	Ser	Gly	Val	Leu	Val	Tyr	Gln	Ile	Thr
		675					680					685			
Trp	Thr	Pro	Leu	Gly	Glu	Gly	Lys	Ala	His	Glu	Ile	Ser	Val	Pro	Gly
	690					695					700				
Asn	Leu	Gly	Thr	Ala	Val	Leu	Pro	Gly	Leu	Gly	Arg	His	Thr	Glu	Tyr
705					710					715					720
Asp	Val	Thr	Ile	Leu	Ala	Tyr	Tyr	Arg	Asp	Gly	Ala	Arg	Ser	Asp	Pro
				725					730					735	
Val	Ser	Leu	Arg	Tyr	Thr	Pro	Ser	Thr	Val	Ser	Arg	Ser	Pro	Pro	Ser
			740					745					750		
Asn	Leu	Ala	Leu	Ala	Ser	Glu	Thr	Pro	Asp	Ser	Leu	Gln	Val	Ser	Trp
		755					760					765			
Thr	Pro	Pro	Leu	Gly	Arg	Val	Leu	His	Tyr	Trp	Leu	Thr	Tyr	Ala	Pro
	770					775					780				
Ala	Ser	Gly	Leu	Gly	Pro	Glu	Lys	Ser	Val	Ser	Val	Pro	Gly	Ala	Arg
785					790					795					800
Ser	His	Val	Thr	Leu	Pro	Asp	Leu	Gln	Ala	Ala	Thr	Lys	Tyr	Arg	Val
				805					810					815	
Leu	Val	Ser	Ala	Ile	Tyr	Ala	Ala	Gly	Arg	Ser	Glu	Ala	Val	Ser	Ala
			820					825					830		
Thr	Gly	Gln	Thr	Ala	Cys	Pro	Ala	Leu	Arg	Pro	Asp	Gly	Ser	Leu	Pro
		835					840					845			
Gly	Phe	Asp	Leu	Met	Val	Ala	Phe	Ser	Leu	Val	Glu	Lys	Ala	Tyr	Ala
	850					855					860				
Ser	Ile	Arg	Gly	Val	Ala	Met	Glu	Pro	Ser	Ala	Phe	Gly	Gly	Thr	Pro
865					870					875					880

Thr Phe Thr Leu Phe Lys Asp Ala Gln Leu Thr Arg Arg Val Ser Asp
 885 890 895

Val Tyr Pro Ala Pro Leu Pro Pro Glu His Thr Ile Val Phe Leu Val
 900 905 910

Arg Leu Leu Pro Glu Thr Pro Arg Glu Ala Phe Ala Leu Trp Gln Met
 915 920 925

Thr Ala Glu Asp Phe Gln Pro Leu Leu Gly Val Leu Leu Asp Ala Gly
 930 935 940

Lys Lys Ser Leu Thr Tyr Phe His Arg Asp Pro Arg Ala Ala Leu Gln
 945 950 955 960

Glu Ala Thr Phe Asp Pro Gln Glu Val Arg Lys Ile Phe Phe Gly Ser
 965 970 975

Phe His Lys Val His Val Ala Val Gly Arg Ser Lys Val Arg Leu Tyr
 980 985 990

Val Asp Cys Arg Lys Val Ala Glu Arg Pro Leu Gly Glu Met Gly Ser
 995 1000 1005

Pro Pro Ala Ala Gly Phe Val Thr Leu Gly Arg Leu Ala Lys Ala
 1010 1015 1020

Arg Gly Pro Arg Ser Ser Ser Ala Ala Phe Gln Leu Gln Met Leu
 1025 1030 1035

Gln Ile Val Cys Ser Asp Thr Trp Ala Asp Glu Asp Arg Cys Cys
 1040 1045 1050

Glu Leu Pro Ala Ser Arg Asp Gly Glu Thr Cys Pro Ala Phe Val
 1055 1060 1065

Ser Ala Cys Ser Cys Ser Ser Glu Thr Pro Gly Pro Pro Gly Pro
 1070 1075 1080

Gln Gly Pro Pro Gly Leu Pro Gly Arg Asn Gly Thr Pro Gly Glu
 1085 1090 1095

Gln Gly Phe Pro Gly Pro Arg Gly Glu Pro Gly Pro Pro Gly Gln
 1100 1105 1110

Met Gly Pro Glu Gly Pro Gly Gly Gln Gln Gly Ser Pro Gly Thr

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Gln Gly	Arg Ala Val	Gln Gly	Pro Val Gly	Pro Gly Val Lys
1130		1135		1140
Gly Glu	Lys Gly Asp His	Gly Leu Pro Gly	Leu Gln Gly His Pro	
1145		1150		1155
Gly His	Gln Gly Ile Pro	Gly Arg Val Gly	Leu Gln Gly Pro Lys	
1160		1165		1170
Gly Met	Arg Gly Leu Glu	Gly Thr Ala Gly	Leu Pro Gly Pro Gly	
1175		1180		1185
Pro Arg	Gly Phe Gln Gly	Met Ala Gly Ala	Arg Gly Thr Ser Gly	
1190		1195		1200
Glu Arg	Gly Pro Pro Gly	Thr Val Gly Pro	Thr Gly Leu Pro Gly	
1205		1210		1215
Pro Lys	Gly Glu Arg Gly	Glu Lys Gly Glu	Pro Gln Ser Leu Ala	
1220		1225		1230
Thr Leu	Tyr Gln Leu Val	Ser Gln Ala Cys	Glu Ser Ala Ile Gln	
1235		1240		1245
Thr His	Val Ser Lys Phe	Asp Ser Phe His	Glu Asn Thr Arg Pro	
1250		1255		1260
Pro Met	Pro Ile Leu Glu	Gln Lys Leu Glu	Pro Gly Thr Glu Pro	
1265		1270		1275
Leu Gly	Ser Pro Gly Thr	Arg Ser Lys Ala	Leu Val Pro Gly Glu	
1280		1285		1290
Trp Gly	Arg Gly Gly Arg	His Leu Glu Gly	Arg Gly Glu Pro Gly	
1295		1300		1305
Ala Val	Gly Gln Met Gly	Ser Pro Gly Gln	Gln Gly Ala Ser Thr	
1310		1315		1320
Gln Gly	Leu Trp Glu			
1325				

<210> 36
 <211> 1278
 <212> PRT

<213> Homo sapiens

<400> 36

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

Arg Leu Ala Val Leu Pro Glu Asp Arg Leu Gln Met Lys Trp Arg Glu
 35 40 45

Ser Glu Gly Ser Gly Leu Gly Tyr Leu Val Gln Val Lys Pro Met Ala
 50 55 60

Gly Asp Ser Glu Gln Glu Val Ile Leu Thr Thr Lys Thr Pro Lys Ala
 65 70 75 80

Thr Val Gly Gly Leu Ser Pro Ser Lys Gly Tyr Thr Leu Gln Ile Phe
 85 90 95

Glu Leu Thr Gly Ser Gly Arg Phe Leu Leu Ala Arg Arg Glu Phe Val
 100 105 110

Ile Glu Asp Leu Lys Ser Ser Ser Leu Asp Arg Ser Ser Gln Arg Pro
 115 120 125

Leu Gly Ser Gly Ala Pro Glu Pro Thr Pro Ser His Thr Gly Ser Pro
 130 135 140

Asp Pro Glu Gln Ala Ser Glu Pro Gln Val Ala Phe Thr Pro Ser Gln
 145 150 155 160

Asp Pro Arg Thr Pro Gly Gly Ser Glu Trp Arg Glu Thr Gly Pro Gln
 165 170 175

Phe Arg Cys Leu Pro Pro Val Pro Ala Asp Met Val Phe Leu Val Asp
 180 185 190

Gly Ser Trp Ser Ile Gly His Ser His Phe Gln Gln Val Lys Asp Phe
 195 200 205

Leu Ala Ser Val Ile Ala Pro Phe Glu Ile Gly Pro Asp Lys Val Gln
 210 215 220

Val Gly Leu Thr Gln Tyr Ser Gly Asp Ala Gln Thr Glu Trp Asp Leu
 225 230 235 240

Asn	Ser	Leu	Ser	Thr	Lys	Glu	Gln	Val	Leu	Ala	Ala	Val	Arg	Arg	Leu	
				245					250					255		
Arg	Tyr	Lys	Gly	Gly	Asn	Thr	Phe	Thr	Gly	Leu	Ala	Leu	Thr	His	Val	
			260					265					270			
Leu	Gly	Gln	Asn	Leu	Gln	Pro	Ala	Ala	Gly	Leu	Arg	Pro	Glu	Ala	Ala	
		275					280					285				
Lys	Val	Val	Ile	Leu	Val	Thr	Asp	Gly	Lys	Ser	Gln	Asp	Asp	Val	His	
	290					295					300					
Thr	Ala	Ala	Arg	Val	Leu	Lys	Asp	Leu	Gly	Val	Asn	Val	Phe	Ala	Val	
305					310					315					320	
Gly	Val	Lys	Asn	Ala	Asp	Glu	Ala	Glu	Leu	Arg	Leu	Leu	Ala	Ser	Pro	
				325					330					335		
Pro	Arg	Asp	Ile	Thr	Val	His	Ser	Val	Leu	Asp	Phe	Leu	Gln	Leu	Gly	
			340					345					350			
Ala	Leu	Ala	Gly	Leu	Leu	Ser	Arg	Leu	Ile	Cys	Gln	Arg	Leu	Gln	Gly	
		355					360					365				
Gly	Ser	Pro	Arg	Gln	Gly	Pro	Ala	Ala	Ala	Pro	Ala	Leu	Asp	Thr	Leu	
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Pro	Ala	Pro	Thr	Ser	Leu	Val	Leu	Ser	Gln	Val	Thr	Ser	Ser	Ser	Ile	
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Arg	Leu	Ser	Trp	Thr	Pro	Ala	Pro	Arg	His	Pro	Leu	Lys	Tyr	Leu	Ile	
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Val	Trp	Arg	Ala	Ser	Arg	Gly	Gly	Thr	Pro	Arg	Glu	Val	Val	Val	Glu	
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		435					440					445				
Tyr	Leu	Val	Ser	Val	Phe	Pro	Ile	Tyr	Glu	Gly	Gly	Val	Gly	Glu	Gly	
	450					455					460					
Leu	Arg	Gly	Leu	Val	Thr	Thr	Ala	Pro	Leu	Pro	Pro	Pro	Arg	Ala	Leu	
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76

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

Thr Glu Ala Pro Gly Asn Ala Thr Ser Ala Thr Leu Gly Pro Leu Ser
610 615 620

Ser Ser Thr Thr Tyr Thr Val Arg Val Thr Cys Leu Tyr Pro Gly Gly
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Gly Ser Ser Thr Leu Thr Gly Arg Val Thr Thr Lys Lys Ala Pro Ser
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Pro Ser Gln Leu Ser Met Thr Glu Leu Pro Gly Asp Ala Val Gln Leu
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Ala Trp Val Ala Ala Ala Pro Ser Gly Val Leu Val Tyr Gln Ile Thr
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Trp Thr Pro Leu Gly Glu Gly Lys Ala His Glu Ile Ser Val Pro Gly
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Asn Leu Gly Thr Ala Val Leu Pro Gly Leu Gly Arg His Thr Glu Tyr
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Asp Val Thr Ile Leu Ala Tyr Tyr Arg Asp Gly Ala Arg Ser Asp Pro
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Val Ser Leu Arg Tyr Thr Pro Ser Thr Val Ser Arg Ser Pro Pro Ser
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Asn Leu Ala Leu Ala Ser Glu Thr Pro Asp Ser Leu Gln Val Ser Trp
 755 760 765

Thr Pro Pro Leu Gly Arg Val Leu His Tyr Trp Leu Thr Tyr Ala Pro
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Ala Ser Gly Leu Gly Pro Glu Lys Ser Val Ser Val Pro Gly Ala Arg
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Gly Phe Asp Leu Met Val Ala Phe Ser Leu Val Glu Lys Ala Tyr Ala
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Thr Phe Thr Leu Phe Lys Asp Ala Gln Leu Thr Arg Arg Val Ser Asp
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Val Tyr Pro Ala Pro Leu Pro Pro Glu His Thr Ile Val Phe Leu Val
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Arg Leu Leu Pro Glu Thr Pro Arg Glu Ala Phe Ala Leu Trp Gln Met
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Thr Ala Glu Asp Phe Gln Pro Leu Leu Gly Val Leu Leu Asp Ala Gly
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Lys Lys Ser Leu Thr Tyr Phe His Arg Asp Pro Arg Ala Ala Leu Gln
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Glu Ala Thr Phe Asp Pro Gln Glu Val Arg Lys Ile Phe Phe Gly Ser
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Phe His Lys Val His Val Ala Val Gly Arg Ser Lys Val Arg Leu Tyr
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Val Asp Cys Arg Lys Val Ala Glu Arg Pro Leu Gly Glu Met Gly Ser
 995 1000 1005

Pro Pro Ala Ala Gly Phe Val Thr Leu Gly Arg Leu Ala Lys Ala
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Gln Ile Val Cys Ser Asp Thr Trp Ala Asp Glu Asp Arg Cys Cys
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Glu Leu Pro Ala Ser Arg Asp Gly Glu Thr Cys Pro Ala Phe Val
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Ser Ala Cys Ser Cys Ser Ser Glu Thr Pro Gly Pro Pro Gly Pro
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His Gly Leu Pro Gly Leu Gln Gly His Pro Gly His Gln Gly Ile
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Pro Gly Arg Val Gly Leu Gln Gly Pro Lys Gly Met Arg Gly Leu
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Glu Gly Thr Ala Gly Leu Pro Gly Pro Gly Pro Arg Gly Phe Gln
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Gly Met Ala Gly Ala Arg Gly Thr Ser Gly Glu Arg Gly Pro Pro
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Gly Thr Val Gly Pro Thr Gly Leu Pro Gly Pro Lys Gly Glu Arg
 1160 1165 1170

Gly Glu Lys Gly Glu Pro Gln Ser Leu Ala Thr Leu Tyr Gln Leu
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Val Ser Gln Ala Cys Glu Ser Ala Ile Gln Thr His Val Ser Lys
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Phe Asp Ser Phe His Glu Asn Thr Arg Pro Pro Met Pro Ile Leu
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Glu Gln Lys Leu Glu Pro Gly Thr Glu Pro Leu Gly Ser Pro Gly
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Thr Arg Ser Lys Ala Leu Val Pro Gly Glu Trp Gly Arg Gly Gly
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Arg His Leu Glu Gly Arg Gly Glu Pro Gly Ala Val Gly Gln Met
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<212> PRT

<213> Homo sapiens

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Ser Glu Gly Ser Gly Leu Gly Tyr Leu Val Gln Val Lys Pro Met Ala
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Gly Asp Ser Glu Gln Glu Val Ile Leu Thr Thr Lys Thr Pro Lys Ala
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Thr Val Gly Gly Leu Ser Pro Ser Lys Gly Tyr Thr Leu Gln Ile Phe
 85 90 95

Glu Leu Thr Gly Ser Gly Arg Phe Leu Leu Ala Arg Arg Glu Phe Val
 100 105 110

Ile Glu Asp Leu Lys Ser Ser Ser Leu Asp Arg Ser Ser Gln Arg Pro
 115 120 125

Leu Gly Ser Gly Ala Pro Glu Pro Thr Pro Ser His Thr Gly Ser Pro
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Asp Pro Glu Gln Ala Ser Glu Pro Gln Val Ala Phe Thr Pro Ser Gln

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Pro	Ala	Asp	Met	Val	Phe	Leu	Val	Asp	Gly	Ser	Trp	Ser	Ile	Gly	His
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Ser	His	Phe	Gln	Gln	Val	Lys	Asp	Phe	Leu	Ala	Ser	Val	Ile	Ala	Pro
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Phe	Glu	Ile	Gly	Pro	Asp	Lys	Val	Gln	Val	Gly	Leu	Thr	Gln	Tyr	Ser
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Gly	Asp	Ala	Gln	Thr	Glu	Trp	Asp	Leu	Asn	Ser	Leu	Ser	Thr	Lys	Glu
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Gln	Val	Leu	Ala	Ala	Val	Arg	Arg	Leu	Arg	Tyr	Lys	Gly	Gly	Asn	Thr
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Phe	Thr	Gly	Leu	Ala	Leu	Thr	His	Val	Leu	Gly	Gln	Asn	Leu	Gln	Pro
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Ala	Ala	Gly	Leu	Arg	Pro	Glu	Ala	Ala	Lys	Val	Val	Ile	Leu	Val	Thr
		275					280					285			
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Asp	Leu	Gly	Val	Asn	Val	Phe	Ala	Val	Gly	Val	Lys	Asn	Ala	Asp	Glu
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Ala	Glu	Leu	Arg	Leu	Leu	Ala	Ser	Pro	Pro	Arg	Asp	Ile	Thr	Val	His
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Ser	Val	Leu	Asp	Phe	Leu	Gln	Leu	Gly	Ala	Leu	Ala	Gly	Leu	Leu	Ser
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Arg	Leu	Ile	Cys	Gln	Arg	Leu	Gln	Gly	Gly	Ser	Pro	Arg	Gln	Gly	Pro
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Leu	Ser	Gln	Val	Thr	Ser	Ser	Ser	Ile	Arg	Leu	Ser	Trp	Thr	Pro	Ala
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Pro Arg His Pro Leu Lys Tyr Leu Ile Val Trp Arg Ala Ser Arg Gly
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Gly Thr Pro Arg Glu Val Val Val Glu Gly Pro Ala Ala Ser Thr Glu
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Leu His Asn Leu Ala Ser Arg Thr Glu Tyr Leu Val Ser Val Phe Pro
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Ile Tyr Glu Gly Gly Val Gly Glu Gly Leu Arg Gly Leu Val Thr Thr
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Ala Pro Leu Pro Pro Pro Arg Ala Leu Thr Leu Ala Ala Val Thr Pro
 465 470 475 480

Arg Thr Val His Leu Thr Trp Gln Pro Ser Ala Gly Ala Thr His Tyr
 485 490 495

Leu Val Arg Cys Ser Pro Ala Ser Pro Lys Gly Glu Glu Glu Glu Arg
 500 505 510

Glu Val Gln Val Gly Arg Pro Glu Val Leu Leu Asp Gly Leu Glu Pro
 515 520 525

Gly Arg Asp Tyr Glu Val Ser Val Gln Ser Leu Arg Gly Pro Glu Gly
 530 535 540

Ser Glu Ala Arg Gly Ile Arg Ala Arg Thr Pro Thr Leu Ala Pro Pro
 545 550 555 560

Arg His Leu Gly Phe Ser Asp Val Ser His Asp Ala Ala Arg Val Phe
 565 570 575

Trp Glu Gly Ala Pro Arg Pro Val Arg Leu Val Arg Val Thr Tyr Val
 580 585 590

Ser Ser Glu Gly Gly His Ser Gly Gln Thr Glu Ala Pro Gly Asn Ala
 595 600 605

Thr Ser Ala Thr Leu Gly Pro Leu Ser Ser Ser Thr Thr Tyr Thr Val
 610 615 620

Arg Val Thr Cys Leu Tyr Pro Gly Gly Gly Ser Ser Thr Leu Thr Gly
 625 630 635 640

Arg Val Thr Thr Lys Lys Ala Pro Ser Pro Ser Gln Leu Ser Met Thr

645	650	655
Glu Leu Pro Gly Asp Ala Val Gln Leu Ala Trp Val Ala Ala Ala Pro	660	665 670
Ser Gly Val Leu Val Tyr Gln Ile Thr Trp Thr Pro Leu Gly Glu Gly	675	680 685
Lys Ala His Glu Ile Ser Val Pro Gly Asn Leu Gly Thr Ala Val Leu	690	695 700
Pro Gly Leu Gly Arg His Thr Glu Tyr Asp Val Thr Ile Leu Ala Tyr	705	710 715 720
Tyr Arg Asp Gly Ala Arg Ser Asp Pro Val Ser Leu Arg Tyr Thr Pro	725	730 735
Ser Thr Val Ser Arg Ser Pro Pro Ser Asn Leu Ala Leu Ala Ser Glu	740	745 750
Thr Pro Asp Ser Leu Gln Val Ser Trp Thr Pro Pro Leu Gly Arg Val	755	760 765
Leu His Tyr Trp Leu Thr Tyr Ala Pro Ala Ser Gly Leu Gly Pro Glu	770	775 780
Lys Ser Val Ser Val Pro Gly Ala Arg Ser His Val Thr Leu Pro Asp	785	790 795 800
Leu Gln Ala Ala Thr Lys Tyr Arg Val Leu Val Ser Ala Ile Tyr Ala	805	810 815
Ala Gly Arg Ser Glu Ala Val Ser Ala Thr Gly Gln Thr Ala Cys Pro	820	825 830
Ala Leu Arg Pro Asp Gly Ser Leu Pro Gly Phe Asp Leu Met Val Ala	835	840 845
Phe Ser Leu Val Glu Lys Ala Tyr Ala Ser Ile Arg Gly Val Ala Met	850	855 860
Glu Pro Ser Ala Phe Gly Gly Thr Pro Thr Phe Thr Leu Phe Lys Asp	865	870 875 880
Ala Gln Leu Thr Arg Arg Val Ser Asp Val Tyr Pro Ala Pro Leu Pro	885	890 895

Pro Glu His Thr Ile Val Phe Leu Val Arg Leu Leu Pro Glu Thr Pro
 900 905 910

Arg Glu Ala Phe Ala Leu Trp Gln Met Thr Ala Glu Asp Phe Gln Pro
 915 920 925

Leu Leu Gly Val Leu Leu Asp Ala Gly Lys Lys Ser Leu Thr Tyr Phe
 930 935 940

His Arg Asp Pro Arg Ala Ala Leu Gln Glu Ala Thr Phe Asp Pro Gln
 945 950 955 960

Glu Val Arg Lys Ile Phe Phe Gly Ser Phe His Lys Val His Val Ala
 965 970 975

Val Gly Arg Ser Lys Val Arg Leu Tyr Val Asp Cys Arg Lys Val Ala
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Glu Arg Pro Leu Gly Glu Met Gly Ser Pro Pro Ala Ala Gly Phe Val
 995 1000 1005

Thr Leu Gly Arg Leu Ala Lys Ala Arg Gly Pro Arg Ser Ser Ser
 1010 1015 1020

Ala Ala Phe Gln Leu Gln Met Leu Gln Ile Val Cys Ser Asp Thr
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Trp Ala Asp Glu Asp Arg Cys Cys Glu Leu Pro Ala Ser Arg Asp
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Gly Glu Thr Cys Pro Ala Phe Val Ser Ala Cys Ser Cys Ser Ser
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Glu Thr Pro Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Leu Pro
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Gly Arg Asn Gly Thr Pro Gly Glu Gln Gly Phe Pro Gly Pro Arg
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Gly Pro Pro Gly Val Lys Gly Glu Lys Gly Asp His Gly Leu Pro
 1100 1105 1110

Gly Leu Gln Gly His Pro Gly His Gln Gly Ile Pro Gly Arg Val
 1115 1120 1125

Gly Leu Gln Gly Pro Lys Gly Met Arg Gly Leu Glu Gly Thr Ala

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Gly Leu Pro Gly Pro Gly Pro Arg Gly Phe Gln Gly Met Ala Gly				
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Ala Arg Gly Thr Ser Gly Glu Arg Gly Pro Pro Gly Thr Val Gly				
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Pro Thr Gly Leu Pro Gly Pro Lys Gly Glu Arg Gly Glu Lys Gly				
1175		1180		1185
Glu Pro Gln Ser Leu Ala Thr Leu Tyr Gln Leu Val Ser Gln Ala				
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Ser His Val Ser Lys Phe Asp Ser Phe His Glu Asn Thr Arg Pro				
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Pro Met Pro Ile Leu Glu Gln Lys Leu Glu Pro Gly Thr Glu Pro				
1220		1225		1230
Leu Gly Ser Pro Gly Thr Arg Ser Lys Ala Leu Val Pro Gly Glu				
1235		1240		1245
Trp Gly Arg Gly Gly Arg His Leu Glu Gly Arg Gly Glu Pro Gly				
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Glu	Pro	Arg	Pro	Arg	Leu	Phe	His	Ala	Ser	Ala	Leu	Leu	Gly	Asp
1715						1720					1725			
Thr	Met	Val	Val	Leu	Gly	Gly	Arg	Ser	Asp	Pro	Asp	Glu	Phe	Ser
1730						1735					1740			
Ser	Asp	Val	Leu	Leu	Tyr	Gln	Val	Asn	Cys	Asn	Ala	Trp	Leu	Leu
1745						1750					1755			
Pro	Asp	Leu	Thr	Arg	Ser	Ala	Ser	Val	Gly	Pro	Pro	Met	Glu	Glu
1760						1765					1770			
Ser	Val	Ala	His	Ala	Val	Ala	Ala	Val	Gly	Ser	Arg	Leu	Tyr	Ile

1775						1780						1785			
Ser	Gly	Gly	Phe	Gly	Gly	Val	Ala	Leu	Gly	Arg	Leu	Leu	Ala	Leu	
1790						1795					1800				
Thr	Leu	Pro	Pro	Asp	Pro	Cys	Arg	Leu	Leu	Ser	Ser	Pro	Glu	Ala	
1805						1810					1815				
Cys	Asn	Gln	Ser	Gly	Ala	Cys	Thr	Trp	Cys	His	Gly	Ala	Cys	Leu	
1820						1825					1830				
Ser	Gly	Asp	Gln	Ala	His	Arg	Leu	Gly	Cys	Gly	Gly	Ser	Pro	Cys	
1835						1840					1845				
Ser	Pro	Met	Pro	Arg	Ser	Pro	Glu	Glu	Cys	Arg	Arg	Leu	Arg	Thr	
1850						1855					1860				
Cys	Ser	Glu	Cys	Leu	Ala	Arg	His	Pro	Arg	Thr	Leu	Gln	Pro	Gly	
1865						1870					1875				
Asp	Gly	Glu	Ala	Ser	Thr	Pro	Arg	Cys	Lys	Trp	Cys	Thr	Asn	Cys	
1880						1885					1890				
Pro	Glu	Gly	Ala	Cys	Ile	Gly	Arg	Asn	Gly	Ser	Cys	Thr	Ser	Glu	
1895						1900					1905				
Asn	Asp	Cys	Arg	Ile	Asn	Gln	Arg	Glu	Val	Phe	Trp	Ala	Gly	Asn	
1910						1915					1920				
Cys	Ser	Glu	Ala	Ala	Cys	Gly	Ala	Ala	Asp	Cys	Glu	Gln	Cys	Thr	
1925						1930					1935				
Arg	Glu	Gly	Lys	Cys	Met	Trp	Thr	Arg	Gln	Phe	Lys	Arg	Thr	Gly	
1940						1945					1950				
Glu	Thr	Arg	Arg	Ile	Leu	Ser	Val	Gln	Pro	Thr	Tyr	Asp	Trp	Thr	
1955						1960					1965				
Cys	Phe	Ser	His	Ser	Leu	Leu	Asn	Val	Ser	Pro	Met	Pro	Val	Glu	
1970						1975					1980				
Ser	Ser	Pro	Pro	Leu	Pro	Cys	Pro	Thr	Pro	Cys	His	Leu	Leu	Pro	
1985						1990					1995				
Asn	Cys	Thr	Ser	Cys	Leu	Asp	Ser	Lys	Gly	Ala	Asp	Gly	Gly	Trp	
2000						2005					2010				

Gln	His	Cys	Val	Trp	Ser	Ser	Ser	Leu	Gln	Gln	Cys	Leu	Ser	Pro
2015						2020					2025			
Ser	Tyr	Leu	Pro	Leu	Arg	Cys	Met	Ala	Gly	Gly	Cys	Gly	Arg	Leu
2030						2035					2040			
Leu	Arg	Gly	Pro	Glu	Ser	Cys	Ser	Leu	Gly	Cys	Ala	Gln	Ala	Thr
2045						2050					2055			
Gln	Cys	Ala	Leu	Cys	Leu	Arg	Arg	Pro	His	Cys	Gly	Trp	Cys	Ala
2060						2065					2070			
Trp	Gly	Gly	Gln	Asp	Gly	Gly	Gly	Arg	Cys	Met	Glu	Gly	Gly	Leu
2075						2080					2085			
Ser	Gly	Pro	Arg	Asp	Gly	Leu	Thr	Cys	Gly	Arg	Pro	Gly	Ala	Ser
2090						2095					2100			
Trp	Ala	Phe	Leu	Ser	Cys	Pro	Pro	Glu	Asp	Glu	Cys	Ala	Asn	Gly
2105						2110					2115			
His	His	Asp	Cys	Asn	Glu	Thr	Gln	Asn	Cys	His	Asp	Gln	Pro	His
2120						2125					2130			
Gly	Tyr	Glu	Cys	Ser	Cys	Lys	Thr	Gly	Tyr	Thr	Met	Asp	Asn	Met
2135						2140					2145			
Thr	Gly	Leu	Cys	Arg	Pro	Val	Cys	Ala	Gln	Gly	Cys	Val	Asn	Gly
2150						2155					2160			
Ser	Cys	Val	Glu	Pro	Asp	His	Cys	Arg	Cys	His	Phe	Gly	Phe	Val
2165						2170					2175			
Gly	Arg	Asn	Cys	Ser	Thr	Glu	Cys	Arg	Cys	Asn	Arg	His	Ser	Glu
2180						2185					2190			
Cys	Ala	Gly	Val	Gly	Ala	Arg	Asp	His	Cys	Leu	Leu	Cys	Arg	Asn
2195						2200					2205			
His	Thr	Lys	Gly	Ser	His	Cys	Glu	Gln	Cys	Leu	Pro	Leu	Phe	Val
2210						2215					2220			
Gly	Ser	Ala	Val	Gly	Gly	Gly	Thr	Cys	Arg	Pro	Cys	His	Ala	Phe
2225						2230					2235			
Cys	Arg	Gly	Asn	Ser	His	Ile	Cys	Ile	Ser	Arg	Lys	Glu	Leu	Gln

2240		2245		2250
Met Ser Lys Gly Glu Pro Lys Lys Tyr Ser Leu Asp Pro Glu Glu	2255	2260	2265	
Ile Glu Asn Trp Val Thr Glu Gly Pro Ser Glu Asp Glu Ala Val	2270	2275	2280	
Cys Val Asn Cys Gln Asn Asn Ser Tyr Gly Glu Lys Cys Glu Ser	2285	2290	2295	
Cys Leu Gln Gly Tyr Phe Leu Leu Asp Gly Lys Cys Thr Lys Cys	2300	2305	2310	
Gln Cys Asn Gly His Ala Asp Thr Cys Asn Glu Gln Asp Gly Thr	2315	2320	2325	
Gly Cys Pro Cys Gln Asn Asn Thr Glu Thr Gly Thr Cys Gln Gly	2330	2335	2340	
Ser Ser Pro Ser Asp Arg Arg Asp Cys Tyr Lys Tyr Gln Cys Ala	2345	2350	2355	
Lys Cys Arg Glu Ser Phe His Gly Ser Pro Leu Gly Gly Gln Gln	2360	2365	2370	
Cys Tyr Arg Leu Ile Ser Val Glu Gln Glu Cys Cys Leu Asp Pro	2375	2380	2385	
Thr Ser Gln Thr Asn Cys Phe His Glu Pro Lys Arg Arg Ala Leu	2390	2395	2400	
Gly Pro Gly Arg Thr Val Leu Phe Gly Val Gln Pro Lys Phe Thr	2405	2410	2415	
Asn Val Asp Ile Arg Leu Thr Leu Asp Val Thr Phe Gly Ala Val	2420	2425	2430	
Asp Leu Tyr Val Ser Thr Ser Tyr Asp Thr Phe Val Val Arg Val	2435	2440	2445	
Ala Pro Asp Thr Gly Val His Thr Val His Ile Gln Pro Pro Pro	2450	2455	2460	
Ala Pro Pro Pro Pro Pro Pro Pro Ala Asp Gly Gly Pro Arg Gly	2465	2470	2475	

Ala Gly 2480	Asp Pro Gly Gly 2485	Ala Gly Ala Ser Ser Gly 2490	Pro Gly Ala
Pro Ala 2495	Glu Pro Arg Val Arg 2500	Glu Val Trp Pro Arg 2505	Gly Leu Ile
Thr Tyr 2510	Val Thr Val Thr Glu 2515	Pro Ser Ala Val Leu 2520	Val Val Arg
Gly Val 2525	Arg Asp Arg Leu Val 2530	Ile Thr Tyr Pro His 2535	Glu His His
Ala Leu 2540	Lys Ser Ser Arg Phe 2545	Tyr Leu Leu Leu Leu 2550	Gly Val Gly
Asp Pro 2555	Ser Gly Pro Gly Ala 2560	Asn Gly Ser Ala Asp 2565	Ser Gln Gly
Leu Leu 2570	Phe Phe Arg Gln Asp 2575	Gln Ala His Ile Asp 2580	Leu Phe Val
Phe Phe 2585	Ser Val Phe Phe Ser 2590	Cys Phe Phe Leu Phe 2595	Leu Ser Leu
Cys Val 2600	Leu Leu Trp Lys Ala 2605	Lys Gln Ala Leu Asp 2610	Gln Arg Gln
Glu Gln 2615	Arg Arg His Leu Gln 2620	Glu Met Thr Lys Met 2625	Ala Ser Arg
Pro Phe 2630	Ala Lys Val Thr Val 2635	Cys Phe Pro Pro Asp 2640	Pro Thr Ala
Pro Ala 2645	Ser Ala Trp Lys Pro 2650	Ala Gly Leu Pro Pro 2655	Pro Ala Phe
Arg Arg 2660	Ser Glu Pro Phe Leu 2665	Ala Pro Leu Leu Leu 2670	Thr Gly Ala
Gly Gly 2675	Pro Trp Gly Pro Met 2680	Gly Gly Gly Cys Cys 2685	Pro Pro Ala
Ile Pro 2690	Ala Thr Thr Ala Gly 2695	Leu Arg Ala Gly Pro 2700	Ile Thr Leu
Glu Pro	Thr Glu Asp Gly Met	Ala Gly Val Ala Thr	Leu Leu Leu

2705 2710 2715
 Gln Leu Pro Gly Gly Pro His Ala Pro Asn Gly Ala Cys Leu Gly
 2720 2725 2730
 Ser Ala Leu Val Thr Leu Arg His Arg Leu His Glu Tyr Cys Gly
 2735 2740 2745
 Gly Gly Gly Gly Ala Gly Gly Ser Gly His Gly Thr Gly Ala Gly
 2750 2755 2760
 Arg Lys Gly Leu Leu Ser Gln Asp Asn Leu Thr Ser Met Ser Leu
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 Val Ser Gly Ala Glu Leu Ala Pro Pro Gly Thr Pro Glu Gly Arg Ala
 35 40 45
 Ala Pro Pro Ser Gly Arg Tyr Ser His Val Ala Ala Val Leu Gly Gly
 50 55 60
 Ser Val Leu Leu Val Ala Gly Gly Tyr Ser Gly Arg Pro Arg Gly Asp
 65 70 75 80
 Leu Met Ala Tyr Lys Val Pro Pro Phe Val Phe Gln Ala Pro Ala Pro
 85 90 95
 Asp Tyr His Leu Asp Tyr Cys Ser Met Tyr Thr Asp His Ser Val Cys
 100 105 110
 Ser Arg Asp Pro Glu Cys Ser Trp Cys Gln Gly Ala Cys Gln Ala Ala
 115 120 125
 Pro Pro Pro Gly Thr Pro Leu Gly Ala Cys Pro Ala Ala Ser Cys Leu
 130 135 140

Gly Leu Gly Arg Leu Leu Gly Asp Cys Gln Ala Cys Leu Ala Phe Ser
 145 150 155 160

Ser Pro Thr Ala Pro Pro Arg Gly Pro Gly Thr Leu Gly Trp Cys Val
 165 170 175

His Asn Glu Ser Cys Leu Pro Arg Pro Glu Gln Ala Arg Cys Arg Gly
 180 185 190

Glu Gln Ile Ser Gly Thr Val Gly Trp Trp Gly Pro Ala Pro Val Phe
 195 200 205

Val Thr Ser Leu Glu Ala Cys Val Thr Gln Ser Phe Leu Pro Gly Leu
 210 215 220

His Leu Leu Thr Phe Gln Gln Pro Pro Asn Thr Ser Gln Pro Asp Lys
 225 230 235 240

Glu Glu Val Gly Arg Trp Val Ala His Gln Glu Lys Glu Thr Arg Arg
 245 250 255

Leu Gln Arg Pro Gly Ser Ala Arg Leu Phe Pro Leu Pro Gly Arg Asp
 260 265 270

His Lys Tyr Ala Val Glu Ile Gln Gly Gln Leu Asn Gly Ser Ala Gly
 275 280 285

Pro Gly His Ser Glu Leu Thr Leu Leu Trp Asp Arg Thr Gly Val Pro
 290 295 300

Gly Gly Ser Glu Ile Ser Phe Phe Phe Leu Glu Pro Tyr Arg Ser Ser
 305 310 315 320

Ser Cys Thr Ser Tyr Ser Ser Cys Leu Gly Cys Leu Ala Asp Gln Gly
 325 330 335

Cys Gly Trp Cys Leu Thr Ser Ala Thr Cys His Leu Arg Gln Gly Gly
 340 345 350

Ala His Cys Gly Asp Asp Gly Ala Gly Gly Ser Leu Leu Val Leu Val
 355 360 365

Pro Thr Leu Cys Pro Leu Cys Glu Glu His Arg Asp Cys His Ala Cys
 370 375 380

Thr Gln Asp Pro Phe Cys Glu Trp His Gln Ser Thr Ser Arg Lys Gly
 385 390 395 400

Asp Ala Ala Cys Ser Arg Arg Gly Arg Gly Arg Gly Ala Leu Lys Ser
 405 410 415

Pro Glu Glu Cys Pro Pro Leu Cys Ser Gln Arg Leu Thr Cys Glu Asp
 420 425 430

Cys Leu Ala Asn Ser Ser Gln Cys Ala Trp Cys Gln Ser Thr His Thr
 435 440 445

Cys Phe Leu Phe Ala Ala Tyr Leu Ala Arg Tyr Pro His Gly Gly Cys
 450 455 460

Arg Gly Trp Asp Asp Ser Val His Ser Glu Pro Arg Cys Arg Ser Cys
 465 470 475 480

Asp Gly Phe Leu Thr Cys His Glu Cys Leu Gln Ser His Glu Cys Gly
 485 490 495

Trp Cys Gly Asn Glu Asp Asn Pro Thr Leu Gly Arg Cys Leu Gln Gly
 500 505 510

Asp Phe Ser Gly Pro Leu Gly Gly Gly Asn Cys Ser Leu Trp Val Gly
 515 520 525

Glu Gly Leu Gly Leu Pro Val Ala Leu Pro Ala Arg Trp Ala Tyr Ala
 530 535 540

Arg Cys Pro Asp Val Asp Glu Cys Arg Leu Gly Leu Ala Arg Cys His
 545 550 555 560

Pro Arg Ala Thr Cys Leu Asn Thr Pro Leu Ser Tyr Glu Cys His Cys
 565 570 575

Gln Arg Gly Tyr Gln Gly Asp Gly Ile Ser His Cys Asn Arg Thr Cys
 580 585 590

Leu Glu Asp Cys Gly His Gly Val Cys Ser Gly Pro Pro Asp Phe Thr
 595 600 605

Cys Val Cys Asp Leu Gly Trp Thr Ser Asp Leu Pro Pro Pro Thr Pro
 610 615 620

Ala Pro Gly Pro Pro Ala Pro Arg Cys Ser Arg Asp Cys Gly Cys Ser
 625 630 635 640

Phe His Ser His Cys Arg Lys Arg Gly Pro Gly Phe Cys Asp Glu Cys
 645 650 655

Gln Asp Trp Thr Trp Gly Glu His Cys Glu Arg Cys Arg Pro Gly Ser
 660 665 670

Phe Gly Asn Ala Thr Gly Ser Arg Gly Cys Arg Pro Cys Gln Cys Asn
 675 680 685

Gly His Gly Asp Pro Arg Arg Gly His Cys Asp Asn Leu Ser Gly Leu
 690 695 700

Cys Phe Cys Gln Asp His Thr Glu Gly Ala His Cys Gln Leu Cys Ser
 705 710 715 720

Pro Gly Tyr Tyr Gly Asp Pro Arg Ala Gly Gly Ser Cys Phe Arg Glu
 725 730 735

Cys Gly Gly Arg Ala Leu Leu Thr Asn Val Ser Ser Val Ala Leu Gly
 740 745 750

Ser Arg Arg Val Gly Gly Leu Leu Pro Pro Gly Gly Gly Ala Ala Arg
 755 760 765

Ala Gly Pro Gly Leu Ser Tyr Cys Val Trp Val Val Ser Ala Thr Glu
 770 775 780

Glu Leu Gln Pro Cys Ala Pro Gly Thr Leu Cys Pro Pro Leu Thr Leu
 785 790 795 800

Thr Phe Ser Pro Asp Ser Ser Thr Pro Cys Thr Leu Ser Tyr Val Leu
 805 810 815

Ala Phe Asp Gly Phe Pro Arg Phe Leu Asp Thr Gly Val Val Gln Ser
 820 825 830

Asp Arg Ser Leu Ile Ala Ala Phe Cys Gly Gln Arg Arg Asp Arg Pro
 835 840 845

Leu Thr Val Gln Ala Leu Ser Gly Leu Leu Val Leu His Trp Glu Ala
 850 855 860

Asn Gly Ser Ser Ser Trp Gly Phe Asn Ala Ser Val Gly Ser Ala Arg
 865 870 875 880

Cys Gly Ser Gly Gly Pro Gly Ser Cys Pro Val Pro Gln Glu Cys Val
 885 890 895

Pro Gln Asp Gly Ala Ala Gly Ala Gly Leu Cys Arg Cys Pro Gln Gly
 900 905 910

Trp Ala Gly Pro His Cys Arg Met Ala Leu Cys Pro Glu Asn Cys Asn
 915 920 925

Ala His Thr Gly Ala Gly Thr Cys Asn Gln Ser Leu Gly Val Cys Ile
 930 935 940

Cys Ala Glu Gly Phe Gly Gly Pro Asp Cys Ala Thr Lys Leu Asp Gly
 945 950 955 960

Gly Gln Leu Val Trp Glu Thr Leu Met Asp Ser Arg Leu Ser Ala Asp
 965 970 975

Thr Ala Ser Arg Phe Leu His Arg Leu Gly His Thr Met Val Asp Gly
 980 985 990

Pro Asp Ala Thr Leu Trp Met Phe Gly Gly Leu Gly Leu Pro Gln Gly
 995 1000 1005

Leu Leu Gly Asn Leu Tyr Arg Tyr Ser Val Ser Glu Arg Arg Trp
 1010 1015 1020

Thr Gln Met Leu Ala Gly Ala Glu Asp Gly Gly Pro Gly Pro Ser
 1025 1030 1035

Pro Arg Ser Phe His Ala Ala Ala Tyr Val Pro Ala Gly Arg Gly
 1040 1045 1050

Ala Met Tyr Leu Leu Gly Gly Leu Thr Ala Gly Gly Val Thr Arg
 1055 1060 1065

Asp Phe Trp Val Leu Asn Leu Thr Thr Leu Gln Trp Arg Gln Glu
 1070 1075 1080

Lys Ala Pro Gln Thr Val Glu Leu Pro Ala Val Ala Gly His Thr
 1085 1090 1095

Leu Thr Ala Arg Arg Gly Leu Ser Leu Leu Leu Val Gly Gly Tyr
 1100 1105 1110

Ser Pro Glu Asn Gly Phe Asn Gln Gln Leu Leu Glu Tyr Gln Leu
 1115 1120 1125

108

Ala Thr	Gly Thr Trp Val	Ser	Gly Ala Gln Ser	Gly	Thr Pro Pro
1130		1135		1140	
Thr Gly	Leu Tyr Gly His	Ser	Ala Val Tyr His	Glu	Ala Thr Asp
1145		1150		1155	
Ser Leu	Tyr Val Phe Gly	Gly	Phe Arg Phe His	Val	Glu Leu Ala
1160		1165		1170	
Ala Pro	Ser Pro Glu Leu	Tyr	Ser Leu His Cys	Pro	Asp Arg Thr
1175		1180		1185	
Trp Ser	Leu Leu Ala Pro	Ser	Gln Gly Ala Lys	Arg	Asp Arg Met
1190		1195		1200	
Arg Asn	Val Arg Gly Ser	Ser	Arg Gly Leu Gly	Gln	Val Pro Gly
1205		1210		1215	
Glu Gln	Pro Gly Ser Trp	Gly	Phe Arg Glu Val	Arg	Lys Lys Met
1220		1225		1230	
Ala Leu	Trp Ala Ala Leu	Ala	Gly Thr Gly Gly	Phe	Leu Glu Glu
1235		1240		1245	
Ile Ser	Pro His Leu Lys	Glu	Pro Arg Pro Arg	Leu	Phe His Ala
1250		1255		1260	
Ser Ala	Leu Leu Gly Asp	Thr	Met Val Val Leu	Gly	Gly Arg Ser
1265		1270		1275	
Asp Pro	Asp Glu Phe Ser	Ser	Asp Val Leu Leu	Tyr	Gln Val Asn
1280		1285		1290	
Cys Asn	Ala Trp Leu Leu	Pro	Asp Leu Thr Arg	Ser	Ala Ser Val
1295		1300		1305	
Gly Pro	Pro Met Glu Glu	Ser	Val Ala His Ala	Val	Ala Ala Val
1310		1315		1320	
Gly Ser	Arg Leu Tyr Ile	Ser	Gly Gly Phe Gly	Gly	Val Ala Leu
1325		1330		1335	
Gly Arg	Leu Leu Ala Leu	Thr	Leu Pro Pro Asp	Pro	Cys Arg Leu
1340		1345		1350	
Leu Ser	Ser Pro Glu Ala	Cys	Asn Gln Ser Gly	Ala	Cys Thr Trp
1355		1360		1365	

Cys	His	Gly	Ala	Cys	Leu	Ser	Gly	Asp	Gln	Ala	His	Arg	Leu	Gly
1370						1375					1380			
Cys	Gly	Gly	Ser	Pro	Cys	Ser	Pro	Met	Pro	Arg	Ser	Pro	Glu	Glu
1385						1390					1395			
Cys	Arg	Arg	Leu	Arg	Thr	Cys	Ser	Glu	Cys	Leu	Ala	Arg	His	Pro
1400						1405					1410			
Arg	Thr	Leu	Gln	Pro	Gly	Asp	Gly	Glu	Ala	Ser	Thr	Pro	Arg	Cys
1415						1420					1425			
Lys	Trp	Cys	Thr	Asn	Cys	Pro	Glu	Gly	Ala	Cys	Ile	Gly	Arg	Asn
1430						1435					1440			
Gly	Ser	Cys	Thr	Ser	Glu	Asn	Asp	Cys	Arg	Ile	Asn	Gln	Arg	Glu
1445						1450					1455			
Val	Phe	Trp	Ala	Gly	Asn	Cys	Ser	Glu	Ala	Ala	Cys	Gly	Ala	Ala
1460						1465					1470			
Asp	Cys	Glu	Gln	Cys	Thr	Arg	Glu	Gly	Lys	Cys	Met	Trp	Thr	Arg
1475						1480					1485			
Gln	Phe	Lys	Arg	Thr	Gly	Glu	Thr	Arg	Arg	Ile	Leu	Ser	Val	Gln
1490						1495					1500			
Pro	Thr	Tyr	Asp	Trp	Thr	Cys	Phe	Ser	His	Ser	Leu	Leu	Asn	Val
1505						1510					1515			
Ser	Pro	Met	Pro	Val	Glu	Ser	Ser	Pro	Pro	Leu	Pro	Cys	Pro	Thr
1520						1525					1530			
Pro	Cys	His	Leu	Leu	Pro	Asn	Cys	Thr	Ser	Cys	Leu	Asp	Ser	Lys
1535						1540					1545			
Gly	Ala	Asp	Gly	Gly	Trp	Gln	His	Cys	Val	Trp	Ser	Ser	Ser	Leu
1550						1555					1560			
Gln	Gln	Cys	Leu	Ser	Pro	Ser	Tyr	Leu	Pro	Leu	Arg	Cys	Met	Ala
1565						1570					1575			
Gly	Gly	Cys	Gly	Arg	Leu	Leu	Arg	Gly	Pro	Glu	Ser	Cys	Ser	Leu
1580						1585					1590			

110

Gly Cys 1595	Ala Gln Ala Thr Gln 1600	Cys Ala Leu Cys Leu 1605	Arg Arg Pro
His Cys 1610	Gly Trp Cys Ala Trp 1615	Gly Gly Gln Asp Gly 1620	Gly Gly Arg
Cys Met 1625	Glu Gly Gly Leu Ser 1630	Gly Pro Arg Asp Gly 1635	Leu Thr Cys
Gly Arg 1640	Pro Gly Ala Ser Trp 1645	Ala Phe Leu Ser Cys 1650	Pro Pro Glu
Asp Glu 1655	Cys Ala Asn Gly His 1660	His Asp Cys Asn Glu 1665	Thr Gln Asn
Cys His 1670	Asp Gln Pro His Gly 1675	Tyr Glu Cys Ser Cys 1680	Lys Thr Gly
Tyr Thr 1685	Met Asp Asn Met Thr 1690	Gly Leu Cys Arg Pro 1695	Val Cys Ala
Gln Gly 1700	Cys Val Asn Gly Ser 1705	Cys Val Glu Pro Asp 1710	His Cys Arg
Cys His 1715	Phe Gly Phe Val Gly 1720	Arg Asn Cys Ser Thr 1725	Glu Cys Arg
Cys Asn 1730	Arg His Ser Glu Cys 1735	Ala Gly Val Gly Ala 1740	Arg Asp His
Cys Leu 1745	Leu Cys Arg Asn His 1750	Thr Lys Gly Ser His 1755	Cys Glu Gln
Cys Leu 1760	Pro Leu Phe Val Gly 1765	Ser Ala Val Gly Gly 1770	Gly Thr Cys
Arg Pro 1775	Cys His Ala Phe Cys 1780	Arg Gly Asn Ser His 1785	Ile Cys Ile
Ser Arg 1790	Lys Glu Leu Gln Met 1795	Ser Lys Gly Glu Pro 1800	Lys Lys Tyr
Ser Leu 1805	Asp Pro Glu Glu Ile 1810	Glu Asn Trp Val Thr 1815	Glu Gly Pro
Ser Glu 1820	Asp Glu Ala Val Cys 1825	Val Asn Cys Gln Asn 1830	Asn Ser Tyr

Gly	Glu	Lys	Cys	Glu	Ser	Cys	Leu	Gln	Gly	Tyr	Phe	Leu	Leu	Asp
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Gly	Lys	Cys	Thr	Lys	Cys	Gln	Cys	Asn	Gly	His	Ala	Asp	Thr	Cys
1850						1855					1860			
Asn	Glu	Gln	Asp	Gly	Thr	Gly	Cys	Pro	Cys	Gln	Asn	Asn	Thr	Glu
1865						1870					1875			
Thr	Gly	Thr	Cys	Gln	Gly	Ser	Ser	Pro	Ser	Asp	Arg	Arg	Asp	Cys
1880						1885					1890			
Tyr	Lys	Tyr	Gln	Cys	Ala	Lys	Cys	Arg	Glu	Ser	Phe	His	Gly	Ser
1895						1900					1905			
Pro	Leu	Gly	Gly	Gln	Gln	Cys	Tyr	Arg	Leu	Ile	Ser	Val	Glu	Gln
1910						1915					1920			
Glu	Cys	Cys	Leu	Asp	Pro	Thr	Ser	Gln	Thr	Asn	Cys	Phe	His	Glu
1925						1930					1935			
Pro	Lys	Arg	Arg	Ala	Leu	Gly	Pro	Gly	Arg	Thr	Val	Leu	Phe	Gly
1940						1945					1950			
Val	Gln	Pro	Lys	Phe	Thr	Asn	Val	Asp	Ile	Arg	Leu	Thr	Leu	Asp
1955						1960					1965			
Val	Thr	Phe	Gly	Ala	Val	Asp	Leu	Tyr	Val	Ser	Thr	Ser	Tyr	Asp
1970						1975					1980			
Thr	Phe	Val	Val	Arg	Val	Ala	Pro	Asp	Thr	Gly	Val	His	Thr	Val
1985						1990					1995			
His	Ile	Gln	Pro	Pro	Pro	Ala	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Ala
2000						2005					2010			
Asp	Gly	Gly	Pro	Arg	Gly	Ala	Gly	Asp	Pro	Gly	Gly	Ala	Gly	Ala
2015						2020					2025			
Ser	Ser	Gly	Pro	Gly	Ala	Pro	Ala	Glu	Pro	Arg	Val	Arg	Glu	Val
2030						2035					2040			
Trp	Pro	Arg	Gly	Leu	Ile	Thr	Tyr	Val	Thr	Val	Thr	Glu	Pro	Ser
2045						2050					2055			

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

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Leu Thr Ser Met Ser Leu
 2315

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<400> 43

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

Val Ser Gly Ala Glu Leu Ala Pro Pro Gly Thr Pro Glu Gly Arg Ala
 35 40 45

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

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185

190

Glu Gln Ile Ser Gly Thr Val Gly Trp Trp Gly Pro Ala Pro Val Phe
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Val Thr Ser Leu Glu Ala Cys Val Thr Gln Ser Phe Leu Pro Gly Leu
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His Leu Leu Thr Phe Gln Gln Pro Pro Asn Thr Ser Gln Pro Asp Lys
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Val Ser Ile Val Arg Ser Thr Thr Ile Thr Leu Thr Pro Ser Ala Glu
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Thr Arg Arg Leu Gln Arg Pro Gly Ser Ala Arg Leu Phe Pro Leu Pro
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675

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<210> 47
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<212> PRT
<213> Homo sapiens

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<400> 47
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Met Asp Cys Arg Thr Lys Ala Asn Pro Asp Arg Thr Phe Asp Leu Val
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```

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Leu Lys Val Lys Cys His Ala Ser Glu Asn Glu Asp Pro Val Val Leu
20          25          30

```

```

Trp Lys Phe Pro Glu Asp Phe Gly Asp Gln Glu Ile Leu Gln Ser Val
35          40          45

```

```

Pro Lys Phe Cys Phe Pro Phe Asp Val Glu Arg Val Ser Gln Asn Gln
50          55          60

```

```

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

```

```

Arg Phe Gly Phe Cys Arg Leu Thr Ser Gly Gly Thr Ile Cys Leu Cys
85          90          95

```

```

Ile Leu Ser Tyr Leu Pro Trp Phe Glu Val Tyr Tyr Lys Leu Leu Asn
100          105          110

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Thr Leu Ala Asp Tyr Leu Ala Lys Glu Leu Glu Asn Asp Leu Asn Glu
 115 120 125

Thr Leu Arg Ser Leu Tyr Asn His Pro Val Pro Lys Ala Asn Thr Pro
 130 135 140

Val Asn Leu Ser Val His Ser Tyr Phe Ile Ala Pro Asp Val Thr Gly
 145 150 155 160

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

Val Asp Val Asn Asn Met Leu Gln Leu Tyr Ala Ser Met Leu His Glu
 180 185 190

Arg Arg Ile Val Ile Ile Ser Ser Lys Leu Ser Thr Leu Thr Ala Cys
 195 200 205

Ile His Gly Ser Ala Ala Leu Leu Tyr Pro Met Tyr Trp Gln His Ile
 210 215 220

Tyr Ile Pro Val Leu Pro Pro His Leu Leu Asp Tyr Cys Cys Ala Pro
 225 230 235 240

Met Pro Tyr Leu Ile Gly Ile His Ser Ser Leu Ile Glu Arg Val Lys
 245 250 255

Asn Lys Ser Leu Glu Asp Val Val Met Leu Asn Val Asp Thr Asn Thr
 260 265 270

Leu Glu Ser Pro Phe Ser Asp Leu Asn Asn Leu Pro Ser Asp Val Val
 275 280 285

Ser Ala Leu Lys Asn Lys Leu Lys Lys Gln Ser Thr Ala Thr Gly Asp
 290 295 300

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

Tyr Arg Asp Ala Leu Arg Tyr Lys Pro Gly Glu Pro Ile Thr Phe Cys
 325 330 335

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

Glu Thr Ala Ile Asn Leu Gln Leu Phe Lys Gln Phe Ile Asp Gly Arg

355

360

365

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

Asp Tyr Pro Phe Ser Gln
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<210> 48

<211> 426

<212> PRT

<213> Homo sapiens

<400> 48

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

Trp Lys Phe Pro Glu Asp Phe Gly Asp Gln Glu Ile Leu Gln Ser Val
 35 40 45

Pro Lys Phe Cys Phe Pro Phe Asp Val Glu Arg Val Ser Gln Asn Gln
 50 55 60

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

Arg Phe Gly Phe Cys Arg Leu Thr Ser Gly Gly Thr Ile Cys Leu Cys
 85 90 95

Ile Leu Ser Tyr Leu Pro Trp Phe Glu Val Tyr Tyr Lys Leu Leu Asn
 100 105 110

Thr Leu Ala Asp Tyr Leu Ala Lys Glu Leu Glu Asn Asp Leu Asn Glu
 115 120 125

Thr Leu Arg Ser Leu Tyr Asn His Pro Val Pro Lys Ala Asn Thr Pro
 130 135 140

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

Leu	Lys	Asp	Gln	Pro	Ala	Leu	Val	Pro	His	Ser	Tyr	Phe	Ile	Ala	Pro
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Asp	Val	Thr	Gly	Leu	Pro	Thr	Ile	Pro	Glu	Ser	Arg	Asn	Leu	Thr	Glu
			180					185					190		
Tyr	Phe	Val	Ala	Val	Asp	Val	Asn	Asn	Met	Leu	Gln	Leu	Tyr	Ala	Ser
		195					200					205			
Met	Leu	His	Glu	Arg	Arg	Ile	Val	Ile	Ile	Ser	Ser	Lys	Leu	Ser	Thr
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Leu	Thr	Ala	Cys	Ile	His	Gly	Ser	Ala	Ala	Leu	Leu	Tyr	Pro	Met	Tyr
225					230					235					240
Trp	Gln	His	Ile	Tyr	Ile	Pro	Val	Leu	Pro	Pro	His	Leu	Leu	Asp	Tyr
			245						250					255	
Cys	Cys	Ala	Pro	Met	Pro	Tyr	Leu	Ile	Gly	Ile	His	Ser	Ser	Leu	Ile
			260					265					270		
Glu	Arg	Val	Lys	Asn	Lys	Ser	Leu	Glu	Asp	Val	Val	Met	Leu	Asn	Val
		275					280					285			
Asp	Thr	Asn	Thr	Leu	Glu	Ser	Pro	Phe	Ser	Asp	Leu	Asn	Asn	Leu	Pro
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Ser	Asp	Val	Val	Ser	Ala	Leu	Lys	Asn	Lys	Leu	Lys	Lys	Gln	Ser	Thr
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Ala	Thr	Gly	Asp	Gly	Val	Ala	Arg	Ala	Phe	Leu	Arg	Ala	Gln	Ala	Ala
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Leu	Phe	Gly	Ser	Tyr	Arg	Asp	Ala	Leu	Arg	Tyr	Lys	Pro	Gly	Glu	Pro
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Ile	Thr	Phe	Cys	Glu	Glu	Ser	Phe	Val	Lys	His	Arg	Ser	Ser	Val	Met
		355					360					365			
Lys	Gln	Phe	Leu	Glu	Thr	Ala	Ile	Asn	Leu	Gln	Leu	Phe	Lys	Gln	Phe
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Ile	Asp	Gly	Arg	Leu	Ala	Lys	Leu	Asn	Ala	Gly	Arg	Gly	Phe	Ser	Asp
385					390					395					400
Val	Phe	Glu	Glu	Glu	Ile	Thr	Ser	Gly	Gly	Phe	Cys	Gly	Gly	Lys	Asp
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Lys Leu Gln Tyr Asp Tyr Pro Phe Ser Gln
 420 425

<210> 49
 <211> 426
 <212> PRT
 <213> Homo sapiens

<400> 49

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

Trp Lys Phe Pro Glu Asp Phe Gly Asp Gln Glu Ile Leu Gln Ser Val
 35 40 45

Pro Lys Phe Cys Phe Pro Phe Asp Val Glu Arg Val Ser Gln Asn Gln
 50 55 60

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

Arg Phe Gly Phe Cys Arg Leu Thr Ser Gly Gly Thr Ile Cys Leu Cys
 85 90 95

Ile Leu Ser Tyr Leu Pro Trp Phe Glu Val Tyr Tyr Lys Leu Leu Asn
 100 105 110

Thr Leu Ala Asp Tyr Leu Ala Lys Glu Leu Glu Asn Asp Leu Asn Glu
 115 120 125

Thr Leu Arg Ser Leu Tyr Asn His Pro Val Pro Lys Ala Asn Thr Pro
 130 135 140

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

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

Asp Val Thr Gly Leu Pro Thr Ile Pro Glu Ser Arg Asn Leu Thr Glu
 180 185 190

Tyr Phe Val Ala Val Asp Val Asn Asn Met Leu Gln Leu Tyr Ala Ser

195

200

205

Met Leu His Glu Arg Arg Ile Val Ile Ile Ser Ser Lys Leu Ser Thr
 210 215 220

Leu Thr Ala Cys Ile His Gly Ser Ala Ala Leu Leu Tyr Pro Met Tyr
 225 230 235 240

Trp Gln His Ile Tyr Ile Pro Val Leu Pro Pro His Leu Leu Asp Tyr
 245 250 255

Cys Cys Ala Pro Met Pro Tyr Leu Ile Gly Ile His Ser Ser Leu Ile
 260 265 270

Glu Arg Val Lys Asn Lys Ser Leu Glu Asp Val Val Met Leu Asn Val
 275 280 285

Asp Thr Asn Thr Leu Glu Ser Pro Phe Ser Asp Leu Asn Asn Leu Pro
 290 295 300

Ser Asp Val Val Ser Ala Leu Lys Asn Lys Leu Lys Lys Gln Ser Thr
 305 310 315 320

Ala Thr Gly Asp Gly Val Ala Arg Ala Phe Leu Arg Ala Gln Ala Ala
 325 330 335

Leu Phe Gly Ser Tyr Arg Asp Ala Leu Arg Tyr Lys Pro Gly Glu Pro
 340 345 350

Ile Thr Phe Cys Glu Glu Ser Phe Val Lys His Arg Ser Ser Val Met
 355 360 365

Lys Gln Phe Leu Glu Thr Ala Ile Asn Leu Gln Leu Phe Lys Gln Phe
 370 375 380

Ile Asp Gly Arg Leu Ala Lys Leu Asn Ala Gly Arg Gly Phe Ser Asp
 385 390 395 400

Val Phe Glu Glu Glu Ile Thr Ser Gly Gly Phe Cys Gly Gly Lys Asp
 405 410 415

Lys Leu Gln Tyr Asp Tyr Pro Phe Ser Gln
 420 425

<210> 50
 <211> 396
 <212> PRT

<213> Homo sapiens

<400> 50

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

Glu Ile Leu Gln Ser Val Pro Lys Phe Cys Phe Pro Phe Asp Val Glu
 35 40 45

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

Asp Ile Glu Ser Lys Gln Arg Phe Gly Phe Cys Arg Leu Thr Ser Gly
 65 70 75 80

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

Tyr Tyr Lys Leu Leu Asn Thr Leu Ala Asp Tyr Leu Ala Lys Glu Leu
 100 105 110

Glu Asn Asp Leu Asn Glu Thr Leu Arg Ser Leu Tyr Asn His Pro Val
 115 120 125

Pro Lys Ala Asn Thr Pro Val Asn Leu Ser Val His Ser Tyr Phe Ile
 130 135 140

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

Thr Glu Tyr Phe Val Ala Val Asp Val Asn Asn Met Leu Gln Leu Tyr
 165 170 175

Ala Ser Met Leu His Glu Arg Arg Ile Val Ile Ile Ser Ser Lys Leu
 180 185 190

Ser Thr Leu Thr Ala Cys Ile His Gly Ser Ala Ala Leu Leu Tyr Pro
 195 200 205

Met Tyr Trp Gln His Ile Tyr Ile Pro Val Leu Pro Pro His Leu Leu
 210 215 220

Asp Tyr Cys Cys Ala Pro Met Pro Tyr Leu Ile Gly Ile His Ser Ser
 225 230 235 240

Leu Ile Glu Arg Val Lys Asn Lys Ser Leu Glu Asp Val Val Met Leu
 245 250 255

Asn Val Asp Thr Asn Thr Leu Glu Ser Pro Phe Ser Asp Leu Asn Asn
 260 265 270

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

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

Ala Ala Leu Phe Gly Ser Tyr Arg Asp Ala Leu Arg Tyr Lys Pro Gly
 305 310 315 320

Glu Pro Ile Thr Phe Cys Glu Glu Ser Phe Val Lys His Arg Ser Ser
 325 330 335

Val Met Lys Gln Phe Leu Glu Thr Ala Ile Asn Leu Gln Leu Phe Lys
 340 345 350

Gln Phe Ile Asp Gly Arg Leu Ala Lys Leu Asn Ala Gly Arg Gly Phe
 355 360 365

Ser Asp Val Phe Glu Glu Glu Ile Thr Ser Gly Gly Phe Cys Gly Gly
 370 375 380

Lys Asp Lys Leu Gln Tyr Asp Tyr Pro Phe Ser Gln
 385 390 395

<210> 51
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 <212> DNA

<213> Homo sapiens

<400> 52

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<210> 53
<211> 2007
<212> DNA
<213> Homo sapiens

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<210> 54
 <211> 2197
 <212> DNA
 <213> Homo sapiens

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<210> 55

<211> 211

<212> PRT

<213> Homo sapiens

<400> 55

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Thr Gln Lys Gly Thr Ala Arg Gly Val Val Gly Phe Lys Gly Cys Ser
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Ser Ser Ser Ser Tyr Pro Ala Gln Ile Ser Tyr Leu Val Ser Pro Pro
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Gly Val Ser Ile Ala Ser Tyr Ser Arg Val Cys Arg Ser Tyr Leu Cys
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Asn Asn Leu Thr Asn Leu Glu Pro Phe Val Lys Leu Lys Ala Ser Thr
 85 90 95

Pro Lys Ser Ile Thr Ser Ala Ser Cys Ser Cys Pro Thr Cys Val Gly
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Glu His Met Lys Asp Cys Leu Pro Asn Phe Val Thr Thr Asn Ser Cys
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Pro Leu Ala Ala Ser Thr Cys Tyr Ser Ser Thr Leu Lys Phe Gln Ala
 130 135 140

Gly Phe Leu Asn Thr Thr Phe Leu Leu Met Gly Cys Ala Arg Glu His
 145 150 155 160

Asn Gln Leu Leu Ala Asp Phe His His Ile Gly Ser Ile Lys Val Thr
 165 170 175

Glu Val Leu Asn Ile Leu Glu Lys Ser Gln Ile Val Gly Ala Ala Ser
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Ser Arg Gln Asp Pro Ala Trp Gly Val Val Leu Gly Leu Leu Phe Ala
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Phe Arg Asp
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<210> 56
 <211> 246
 <212> PRT
 <213> Homo sapiens

<400> 56

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Thr Ala Ser Arg Phe Arg Ala Val Ala Phe His Asn Trp Lys Trp Leu
 35 40 45

Leu Met Arg Asn Met Val Cys Lys Leu Gln Glu Gly Cys Glu Glu Thr
 50 55 60

Leu Val Phe Ile Glu Thr Gly Thr Ala Arg Gly Val Val Gly Phe Lys
 65 70 75 80

Gly Cys Ser Ser Ser Ser Ser Tyr Pro Ala Gln Ile Ser Tyr Leu Val
 85 90 95

Ser Pro Pro Gly Val Ser Ile Ala Ser Tyr Ser Arg Val Cys Arg Ser
 100 105 110

Tyr Leu Cys Asn Asn Leu Thr Asn Leu Glu Pro Phe Val Lys Leu Lys
 115 120 125

Ala Ser Thr Pro Lys Ser Ile Thr Ser Ala Ser Cys Ser Cys Pro Thr
 130 135 140

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

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

Phe Gln Ala Gly Phe Leu Asn Thr Thr Phe Leu Leu Met Gly Cys Ala
 180 185 190

Arg Glu His Asn Gln Leu Leu Ala Asp Phe His His Ile Gly Ser Ile
 195 200 205

Lys Val Thr Glu Val Leu Asn Ile Leu Glu Lys Ser Gln Ile Val Gly
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Ala Ala Ser Ser Arg Gln Asp Pro Ala Trp Gly Val Val Leu Gly Leu
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Leu Phe Ala Phe Arg Asp
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<210> 57

<211> 705

<212> DNA

<213> Homo sapiens

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<210> 58
 <211> 2022
 <212> DNA
 <213> Homo sapiens

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<210> 59
 <211> 542
 <212> PRT
 <213> Homo sapiens

<400> 59

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Glu Glu Arg Thr Arg Lys Leu Lys Thr His Leu Gln His Leu Arg Trp
 35 40 45

Lys Gly Ala Lys Asn Thr Asp Trp Glu His Lys Glu Lys Cys Cys Ala
 50 55 60

Arg Cys Gln Gln Val Leu Gly Phe Leu Leu His Arg Gly Ala Val Cys
65 70 75 80

Arg Gly Cys Ser His Arg Val Cys Ala Gln Cys Arg Val Phe Leu Arg
85 90 95

Gly Thr His Ala Trp Lys Cys Thr Val Cys Phe Glu Asp Arg Asn Val
100 105 110

Lys Ile Lys Thr Gly Glu Trp Phe Tyr Glu Glu Arg Ala Lys Lys Phe
115 120 125

Pro Thr Gly Gly Lys His Glu Thr Val Gly Gly Gln Leu Leu Gln Ser
130 135 140

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

Val Ser Glu Ser Gln Cys Ser Arg Ser Pro Gly Arg Lys Val Ser Ala
165 170 175

Pro Asp Ile Leu Lys Pro Leu Asn Gln Glu Asp Pro Lys Cys Ser Thr
180 185 190

Asn Pro Ile Leu Lys Gln Gln Asn Leu Pro Ser Ser Pro Ala Pro Ser
195 200 205

Thr Ile Phe Ser Gly Gly Phe Arg His Gly Ser Leu Ile Ser Ile Asp
210 215 220

Ser Thr Cys Thr Glu Met Gly Asn Phe Asp Asn Ala Asn Val Thr Gly
225 230 235 240

Glu Ile Glu Phe Ala Ile His Tyr Cys Phe Lys Thr His Ser Leu Glu
245 250 255

Ile Cys Ile Lys Ala Cys Lys Asn Leu Ala Tyr Gly Glu Glu Lys Lys
260 265 270

Lys Lys Cys Asn Pro Tyr Val Lys Thr Tyr Leu Leu Pro Asp Arg Ser
275 280 285

Ser Gln Gly Lys Arg Lys Thr Gly Val Gln Arg Asn Thr Val Asp Pro
290 295 300

Thr Phe Gln Glu Thr Leu Lys Tyr Gln Val Ala Pro Ala Gln Leu Val

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Arg	Val	Phe	Leu	Gly	Glu	Val	Ile	Ile	Pro	Leu	Ala	Thr	Trp	Asp	Phe
			340					345					350		
Glu	Asp	Ser	Thr	Thr	Gln	Ser	Phe	Arg	Trp	His	Pro	Leu	Arg	Ala	Lys
		355					360					365			
Ala	Glu	Lys	Tyr	Glu	Asp	Ser	Val	Pro	Gln	Ser	Asn	Gly	Glu	Leu	Thr
	370					375					380				
Val	Arg	Ala	Lys	Leu	Val	Leu	Pro	Ser	Arg	Pro	Arg	Lys	Leu	Gln	Glu
385					390					395					400
Ala	Gln	Glu	Gly	Thr	Asp	Gln	Pro	Ser	Leu	His	Gly	Gln	Leu	Cys	Leu
				405					410					415	
Val	Val	Leu	Gly	Ala	Lys	Asn	Leu	Pro	Val	Arg	Pro	Asp	Gly	Thr	Leu
		420						425					430		
Asn	Ser	Phe	Val	Lys	Gly	Cys	Leu	Thr	Leu	Pro	Asp	Gln	Gln	Lys	Leu
		435					440					445			
Arg	Leu	Lys	Ser	Pro	Val	Leu	Arg	Lys	Gln	Ala	Cys	Pro	Gln	Trp	Lys
	450					455					460				
His	Ser	Phe	Val	Phe	Ser	Gly	Val	Thr	Pro	Ala	Gln	Leu	Arg	Gln	Ser
465					470				475						480
Ser	Leu	Glu	Leu	Thr	Val	Trp	Asp	Gln	Ala	Leu	Phe	Gly	Met	Asn	Asp
				485				490						495	
Arg	Leu	Leu	Gly	Gly	Thr	Arg	Leu	Gly	Ser	Lys	Gly	Asp	Thr	Ala	Val
			500					505					510		
Gly	Gly	Asp	Ala	Cys	Ser	Leu	Ser	Lys	Leu	Gln	Trp	Gln	Lys	Val	Leu
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<210> 60
 <211> 610
 <212> PRT

<213> Homo sapiens

<400> 60

Met Ala Gln Glu Ile Asp Leu Ser Ala Leu Lys Glu Leu Glu Arg Glu
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Ala Ile Leu Gln Val Leu Tyr Arg Asp Gln Ala Val Gln Asn Thr Glu
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Glu Glu Arg Thr Arg Lys Leu Lys Thr His Leu Gln His Leu Arg Trp
 35 40 45

Lys Gly Ala Lys Asn Thr Asp Trp Glu His Lys Glu Lys Cys Cys Ala
 50 55 60

Arg Cys Gln Gln Val Leu Gly Phe Leu Leu His Arg Gly Ala Val Cys
 65 70 75 80

Arg Gly Cys Ser His Arg Val Cys Ala Gln Cys Arg Val Phe Leu Arg
 85 90 95

Gly Thr His Ala Trp Lys Cys Thr Val Cys Phe Glu Asp Arg Asn Val
 100 105 110

Lys Ile Lys Thr Gly Glu Trp Phe Tyr Glu Glu Arg Ala Lys Lys Phe
 115 120 125

Pro Thr Gly Gly Lys His Glu Thr Val Gly Gly Gln Leu Leu Gln Ser
 130 135 140

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

Val Ser Glu Ser Gln Cys Ser Arg Ser Pro Gly Arg Leu Gln Glu Phe
 165 170 175

Gly Gln Phe Arg Gly Phe Asn Lys Ser Val Glu Asn Leu Phe Leu Ser
 180 185 190

Leu Ala Thr His Val Lys Lys Leu Ser Lys Ser Gln Asn Asp Met Thr
 195 200 205

Ser Glu Lys His Leu Leu Ala Thr Gly Pro Arg Gln Cys Val Gly Gln
 210 215 220

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

Lys Val Ser Ala Pro Asp Ile Leu Lys Pro Leu Asn Gln Glu Asp Pro
 245 250 255

Lys Cys Ser Thr Asn Pro Ile Leu Lys Gln Gln Asn Leu Pro Ser Ser
 260 265 270

Pro Ala Pro Ser Thr Ile Phe Ser Gly Gly Phe Arg His Gly Ser Leu
 275 280 285

Ile Ser Ile Asp Ser Thr Cys Thr Glu Met Gly Asn Phe Asp Asn Ala
 290 295 300

Asn Val Thr Gly Glu Ile Glu Phe Ala Ile His Tyr Cys Phe Lys Thr
 305 310 315 320

His Ser Leu Glu Ile Cys Ile Lys Ala Cys Lys Asn Leu Ala Tyr Gly
 325 330 335

Glu Glu Lys Lys Lys Lys Cys Asn Pro Tyr Val Lys Thr Tyr Leu Leu
 340 345 350

Pro Asp Arg Ser Ser Gln Gly Lys Arg Lys Thr Gly Val Gln Arg Asn
 355 360 365

Thr Val Asp Pro Thr Phe Gln Glu Thr Leu Lys Tyr Gln Val Ala Pro
 370 375 380

Ala Gln Leu Val Thr Arg Gln Leu Gln Val Ser Val Trp His Leu Gly
 385 390 395 400

Thr Leu Ala Arg Arg Val Phe Leu Gly Glu Val Ile Ile Pro Leu Ala
 405 410 415

Thr Trp Asp Phe Glu Asp Ser Thr Thr Gln Ser Phe Arg Trp His Pro
 420 425 430

Leu Arg Ala Lys Ala Glu Lys Tyr Glu Asp Ser Val Pro Gln Ser Asn
 435 440 445

Gly Glu Leu Thr Val Arg Ala Lys Leu Val Leu Pro Ser Arg Pro Arg
 450 455 460

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

Gln Leu Cys Leu Val Val Leu Gly Ala Lys Asn Leu Pro Val Arg Pro
485 490 495

Gln Gln Lys Leu Arg Leu Lys Ser Pro Val Leu Arg Lys Gln Ala Cys
515 520 525

Leu Arg Gln Ser Ser Leu Glu Leu Thr Val Trp Asp Gln Ala Leu Phe
545 550 555 560

Asp Thr Ala Val Gly Gly Asp Ala Cys Ser Leu Ser Lys Leu Gln Trp
580 585 590

Leu His
610

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<210> 61
<211> 542
<212> PRT
<213> Homo sapiens
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<400> 61

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Ala Ile Leu Gln Val Leu Tyr Arg Asp Gln Ala Val Gln Asn Thr Glu
20 25 30

Glu Glu Arg Thr Arg Lys Leu Lys Thr His Leu Gln His Leu Arg Trp
35 40 45

Lys Gly Ala Lys Asn Thr Asp Trp Glu His Lys Glu Lys Cys Cys Ala
50 55 60

Arg Cys Gln Gln Val Leu Gly Phe Leu Leu His Arg Gly Ala Val Cys
65 70 75 80

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

325

330

335

Arg Val Phe Leu Gly Glu Val Ile Ile Pro Leu Ala Thr Trp Asp Phe
 340 345 350

Glu Asp Ser Thr Thr Gln Ser Phe Arg Trp His Pro Leu Arg Ala Lys
 355 360 365

Ala Glu Lys Tyr Glu Asp Ser Val Pro Gln Ser Asn Gly Glu Leu Thr
 370 375 380

Val Arg Ala Lys Leu Val Leu Pro Ser Arg Pro Arg Lys Leu Gln Glu
 385 390 395 400

Ala Gln Glu Gly Thr Asp Gln Pro Ser Leu His Gly Gln Leu Cys Leu
 405 410 415

Val Val Leu Gly Ala Lys Asn Leu Pro Val Arg Pro Asp Gly Thr Leu
 420 425 430

Asn Ser Phe Val Lys Gly Cys Leu Thr Leu Pro Asp Gln Gln Lys Leu
 435 440 445

Arg Leu Lys Ser Pro Val Leu Arg Lys Gln Ala Cys Pro Gln Trp Lys
 450 455 460

His Ser Phe Val Phe Ser Gly Val Thr Pro Ala Gln Leu Arg Gln Ser
 465 470 475 480

Ser Leu Glu Leu Thr Val Trp Asp Gln Ala Leu Phe Gly Met Asn Asp
 485 490 495

Arg Leu Leu Gly Gly Thr Arg Leu Gly Ser Lys Gly Asp Thr Ala Val
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Gly Gly Asp Ala Cys Ser Leu Ser Lys Leu Gln Trp Gln Lys Val Leu
 515 520 525

Ser Ser Pro Asn Leu Trp Thr Asp Met Thr Leu Val Leu His
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<210> 62

<211> 2277

<212> DNA

<213> Homo sapiens

<400> 62

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tattggtatc tgtgtatatt tacgttaaac acaattatgt tacctaagcc tctggtgggt 2220
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<210> 63

<211> 2131

<212> DNA

<213> Homo sapiens

<400> 63

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tgagcgcttg gtccatgcag tgaagctctt ccaacctggg tcaacgaaaa cggagaagaa 180
atggcccaag aaatagatct gagtgctctc aaggagttag aacgcgaggc cattctccag 240
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<210> 64

<211> 1927

<212> DNA

<213> Homo sapiens

<400> 64

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ctgcactgac atgaaggcct caaggttcca ggttgacgca ggcgtgaggc actgtgcgtc     1860
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gtctcca                                           1927

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<210> 65
<211> 173
<212> PRT
<213> Homo sapiens

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<400> 65
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Met His Trp Lys Met Leu Leu Leu Leu Leu Tyr Tyr Asn Ala Glu
1          5          10          15

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Ala Ser Met Cys His Arg Trp Ser Arg Ala Val Leu Phe Pro Ala Ala
20          25          30

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His Arg Pro Lys Arg Ser Ser Ser Leu Pro Leu Asn Pro Val Leu Gln
35          40          45

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Thr Ser Leu Glu Glu Val Glu Leu Leu Tyr Glu Phe Leu Leu Ala Glu

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50		55		60
Leu Glu Ile Ser Pro Asp Leu Gln Ile Ser Ile Lys Asp Glu Glu Leu				
65		70		75 80
Ala Ser Leu Arg Lys Ala Ser Asp Phe Arg Thr Val Cys Asn Asn Val				
	85		90	95
Ile Pro Lys Ser Ile Pro Asp Ile Arg Arg Leu Ser Ala Ser Leu Ser				
	100		105	110
Ser His Pro Gly Ile Leu Lys Lys Glu Asp Phe Glu Arg Thr Val Leu				
	115		120	125
Thr Leu Ala Tyr Thr Ala Tyr Arg Thr Ala Leu Ser His Gly His Gln				
	130		135	140
Lys Asp Ile Trp Ala Gln Ser Leu Val Ser Leu Phe Gln Ala Leu Arg				
145		150		155 160
His Asp Leu Met Arg Ser Ser Gln Pro Gly Val Pro Pro				
	165		170	

<210> 66
 <211> 1645
 <212> DNA
 <213> Homo sapiens

<400> 66
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<212> PRT

<213> Homo sapiens

<400> 67

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Leu Ala Glu Pro Gly Leu Gly Arg Val His His Leu Ala Leu Lys Asp
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Asp Val Arg His Lys Val His Leu Asn Thr Phe Gly Phe Phe Lys Asp
50          55          60

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Gly Tyr Met Val Val Asn Val Ser Ser Leu Ser Leu Asn Glu Pro Glu
65          70          75          80

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Asp Lys Asp Val Thr Ile Gly Phe Ser Leu Asp Arg Thr Lys Asn Asp
85          90          95

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

Ile Ile Phe Ser Arg Asp Glu Lys Val Leu Gly Gln Ser Gln Glu Pro
 145 150 155 160

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

Gly Gly Lys Ser Lys Arg Ser Thr Val Asp Ser Lys Ala Met Gly Glu
 180 185 190

Lys Ser Phe Ser Val His Asn Asn Gly Gly Ala Val Ser Phe Gln Phe
 195 200 205

Phe Phe Asn Ile Ser Thr Asp Asp Gln Glu Gly Leu Tyr Ser Leu Tyr
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Phe His Lys Cys Leu Gly Lys Glu Leu Pro Ser Asp Lys Phe Thr Phe
 225 230 235 240

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

Ala Gly Glu Ile Pro Leu Pro Lys Leu Tyr Ile Ser Met Ala Phe Phe
 260 265 270

Phe Phe Leu Ser Gly Thr Ile Trp Ile His Ile Leu Arg Lys Arg Arg
 275 280 285

Asn Asp Val Phe Lys Ile His Trp Leu Met Ala Ala Leu Pro Phe Thr
 290 295 300

Lys Ser Leu Ser Leu Val Phe His Ala Ile Asp Tyr His Tyr Ile Ser
 305 310 315 320

Ser Gln Gly Phe Pro Ile Glu Gly Trp Ala Val Val Tyr Tyr Ile Thr
 325 330 335

His Leu Leu Lys Gly Ala Leu Leu Phe Ile Thr Ile Ala Leu Ile Gly

340

345

350

Thr Gly Trp Ala Phe Ile Lys His Ile Leu Ser Asp Lys Asp Lys Lys
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Ile Phe Met Ile Val Ile Pro Leu Gln Val Leu Ala Asn Val Ala Tyr
 370 375 380

Ile Ile Ile Glu Ser Thr Glu Glu Gly Thr Thr Glu Tyr Gly Leu Trp
 385 390 395 400

Lys Asp Ser Leu Phe Leu Val Asp Leu Leu Cys Cys Gly Ala Ile Leu
 405 410 415

Phe Pro Val Val Trp Ser Ile Arg His Leu Gln Glu Ala Ser Ala Thr
 420 425 430

Asp Gly Lys Ala Ala Ile Asn Leu Ala Lys Leu Lys Leu Phe Arg His
 435 440 445

Tyr Tyr Val Leu Ile Val Cys Tyr Ile Tyr Phe Thr Arg Ile Ile Ala
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Phe Leu Leu Lys Leu Ala Val Pro Phe Gln Trp Lys Trp Leu Tyr Gln
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Leu Leu Asp Glu Thr Ala Thr Leu Val Phe Phe Val Leu Thr Gly Tyr
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Lys Phe Arg Pro Ala Ser Asp Asn Pro Tyr Leu Gln Leu Ser Gln Glu
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Glu Glu Asp Leu Glu Met Glu Ser Val Val Thr Thr Ser Gly Val Met
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Gln Gly Glu Trp Glu Gly Ala Val
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<212> PRT

<213> Homo sapiens

<400> 68

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 Leu Ala Glu Pro Gly Leu Gly Arg Val His His Leu Ala Leu Lys Asp
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 Asp Val Arg His Lys Val His Leu Asn Thr Phe Gly Phe Phe Lys Asp
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 Gly Tyr Met Val Val Asn Val Ser Ser Leu Ser Leu Asn Glu Pro Glu
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 Asp Lys Asp Val Thr Ile Gly Phe Ser Leu Asp Arg Thr Lys Asn Asp
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 Gly Phe Ser Ser Tyr Leu Asp Glu Asp Val Asn Tyr Cys Ile Leu Lys
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 Lys Gln Ser Val Ser Val Thr Leu Leu Ile Leu Asp Ile Ser Arg Ser
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 Glu Val Arg Val Lys Ser Pro Pro Glu Ala Gly Thr Gln Leu Pro Lys
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 Ile Ile Phe Ser Arg Asp Glu Lys Val Leu Gly Gln Ser Gln Glu Pro
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 Asn Val Asn Pro Ala Ser Ala Gly Asn Gln Thr Gln Lys Thr Gln Asp
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 Gly Gly Lys Ser Lys Arg Ser Thr Val Asp Ser Lys Ala Met Gly Glu
 180 185 190

 Lys Ser Phe Ser Val His Asn Asn Gly Gly Ala Val Ser Phe Gln Phe
 195 200 205

 Phe Phe Asn Ile Ser Thr Asp Asp Gln Glu Gly Leu Tyr Ser Leu Tyr
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 Phe His Lys Cys Leu Gly Lys Glu Leu Pro Ser Asp Lys Phe Thr Phe
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 Ser Leu Asp Ile Glu Ile Thr Glu Lys Asn Pro Asp Ser Tyr Leu Ser
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Ala Gly Glu Ile Pro Leu Pro Lys Leu Tyr Ile Ser Met Ala Phe Phe
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Phe Phe Leu Ser Gly Thr Ile Trp Ile His Ile Leu Arg Lys Arg Arg
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Asn Asp Val Phe Lys Ile His Trp Leu Met Ala Ala Leu Pro Phe Thr
 290 295 300

Lys Ser Leu Ser Leu Val Phe His Ala Ile Asp Tyr His Tyr Ile Ser
 305 310 315 320

Ser Gln Gly Phe Pro Ile Glu Gly Trp Ala Val Val Tyr Tyr Ile Thr
 325 330 335

His Leu Leu Lys Gly Ala Leu Leu Phe Ile Thr Ile Ala Leu Ile Gly
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Thr Gly Trp Ala Phe Ile Lys His Ile Leu Ser Asp Lys Asp Lys Lys
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Ile Phe Met Ile Val Ile Pro Leu Gln Val Leu Ala Asn Val Ala Tyr
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Ile Ile Ile Glu Ser Thr Glu Glu Gly Thr Thr Glu Tyr Gly Leu Trp
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Lys Asp Ser Leu Phe Leu Val Asp Leu Leu Cys Cys Gly Ala Ile Leu
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Phe Pro Val Val Trp Ser Ile Arg His Leu Gln Glu Ala Ser Ala Thr
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Asp Gly Lys Gly Asp Ser Met Gly Pro Leu Gln Gln Arg Ala Asn Leu
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Arg Ala Gly Ser Arg Ile Glu Ser His His Phe Ala Gln Ala Asp Leu
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Glu Leu Leu Ala Ser Ser Cys Pro Pro Ala Ser Val Ser Gln Arg Ala
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Gly Ile Thr Ala Ala Ile Asn Leu Ala Lys Leu Lys Leu Phe Arg His
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175

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

Glu Glu Asp Leu Glu Met Glu Ser Val Val Thr Thr Ser Gly Val Met
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Glu Ser Met Lys Lys Val Lys Lys Val Thr Asn Gly Ser Val Glu Pro
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Gln Gly Glu Trp Glu Gly Ala Val
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<210> 69

<211> 600

<212> PRT

<213> Homo sapiens

<400> 69

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Leu Ala Glu Pro Gly Leu Gly Arg Val His His Leu Ala Leu Lys Asp
35 40 45

Asp Val Arg His Lys Val His Leu Asn Thr Phe Gly Phe Phe Lys Asp
50 55 60

Gly Tyr Met Val Val Asn Val Ser Ser Leu Ser Leu Asn Glu Pro Glu
65 70 75 80

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

Gly Gly Lys Ser Lys Arg Ser Thr Val Asp Ser Lys Ala Met Gly Glu
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Lys Ser Phe Ser Val His Asn Asn Gly Gly Ala Val Ser Phe Gln Phe
 195 200 205

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

Phe Phe Leu Ser Gly Thr Ile Trp Ile His Ile Leu Arg Lys Arg Arg
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Asn Asp Val Phe Lys Ile His Trp Leu Met Ala Ala Leu Pro Phe Thr
 290 295 300

Lys Ser Leu Ser Leu Val Phe His Ala Ile Asp Tyr His Tyr Ile Ser
 305 310 315 320

Ser Gln Gly Phe Pro Ile Glu Gly Trp Ala Val Val Tyr Tyr Ile Thr
 325 330 335

His Leu Leu Lys Gly Ala Leu Leu Phe Ile Thr Ile Ala Leu Ile Gly
 340 345 350

Thr Gly Trp Ala Phe Ile Lys His Ile Leu Ser Asp Lys Asp Lys Lys

355

360

365

Ile Phe Met Ile Val Ile Pro Leu Gln Val Leu Ala Asn Val Ala Tyr
 370 375 380

Ile Ile Ile Glu Ser Thr Glu Glu Gly Thr Thr Glu Tyr Gly Leu Trp
 385 390 395 400

Lys Asp Ser Leu Phe Leu Val Asp Leu Leu Cys Cys Gly Ala Ile Leu
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Phe Pro Val Val Trp Ser Ile Arg His Leu Gln Glu Ala Ser Ala Thr
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Asp Gly Lys Gly Asp Ser Met Gly Pro Leu Gln Gln Arg Ala Asn Leu
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Arg Ala Gly Ser Arg Ile Glu Ser His His Phe Ala Gln Ala Asp Leu
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Glu Leu Leu Ala Ser Ser Cys Pro Pro Ala Ser Val Ser Gln Arg Ala
 465 470 475 480

Gly Ile Thr Ala Ala Ile Asn Leu Ala Lys Leu Lys Leu Phe Arg His
 485 490 495

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

Glu Glu Asp Leu Glu Met Glu Ser Val Val Thr Thr Ser Gly Val Met
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Glu Ser Met Lys Lys Val Lys Lys Val Thr Asn Gly Ser Val Glu Pro
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Gln Gly Glu Trp Glu Gly Ala Val
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 <211> 6874
 <212> DNA
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<210> 73

<211> 431

<212> PRT

<213> Homo sapiens

<400> 73

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1           5           10          15

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```

Ser Lys Arg Leu Gln Gly Arg Leu Pro Gly Leu Arg Val Arg Cys Ile

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20

25

30

Phe Leu Ala Trp Leu Gly Val Phe Ala Gly Ser Trp Leu Val Tyr Val
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His Tyr Ser Ser Tyr Ser Glu Arg Cys Arg Gly His Val Cys Gln Val
 50 55 60

Val Ile Cys Asp Gln Tyr Arg Lys Gly Ile Ile Ser Gly Ser Val Cys
 65 70 75 80

Gln Asp Leu Cys Glu Leu His Met Val Glu Trp Arg Thr Cys Leu Ser
 85 90 95

Val Ala Pro Gly Gln Gln Val Tyr Ser Gly Leu Trp Arg Asp Lys Asp
 100 105 110

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

Ser Asp Ala Ala Pro Arg Arg Glu Leu Val Leu Phe Asp Lys Pro Thr
 130 135 140

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

Lys Ala Asn Leu Gly Asp Leu Pro Ser Leu Pro Ala Leu Val Gly Gln
 165 170 175

Val Leu Leu Met Ala Asp Phe Asn Lys Asp Asn Arg Val Ser Leu Ala
 180 185 190

Glu Ala Lys Ser Val Trp Ala Leu Leu Gln Arg Asn Glu Phe Leu Leu
 195 200 205

Leu Leu Ser Leu Gln Glu Lys Glu His Ala Ser Arg Leu Leu Gly Tyr
 210 215 220

Cys Gly Asp Leu Tyr Leu Thr Glu Gly Val Pro His Gly Ala Trp His
 225 230 235 240

Ala Ala Ala Leu Pro Pro Leu Leu Arg Pro Leu Leu Pro Pro Ala Leu
 245 250 255

Gln Gly Ala Leu Gln Gln Trp Leu Gly Pro Ala Trp Pro Trp Arg Ala
 260 265 270

Lys Ile Ala Ile Gly Leu Leu Glu Phe Val Glu Glu Leu Phe His Gly
 275 280 285

Ser Tyr Gly Thr Phe Tyr Met Cys Glu Thr Thr Leu Ala Asn Val Gly
 290 295 300

Tyr Thr Ala Thr Tyr Asp Phe Lys Met Ala Asp Leu Gln Gln Val Ala
 305 310 315 320

Pro Glu Ala Thr Val Arg Arg Phe Leu Gln Gly Arg Arg Cys Glu His
 325 330 335

Ser Thr Asp Cys Thr Tyr Gly Arg Asp Cys Arg Ala Pro Cys Asp Arg
 340 345 350

Leu Met Arg Gln Cys Lys Gly Asp Leu Ile Gln Pro Asn Leu Ala Lys
 355 360 365

Val Cys Ala Leu Leu Arg Gly Tyr Leu Leu Pro Gly Ala Pro Ala Asp
 370 375 380

Leu Arg Glu Glu Leu Gly Thr Gln Leu Arg Thr Cys Thr Thr Leu Ser
 385 390 395 400

Gly Leu Ala Ser Gln Val Glu Ala His His Ser Leu Val Leu Ser His
 405 410 415

Leu Lys Thr Leu Leu Trp Lys Lys Ile Ser Asn Thr Lys Tyr Ser
 420 425 430

<210> 74

<211> 344

<212> PRT

<213> Homo sapiens

<400> 74

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

Glu Glu Thr Leu Asp Ser Lys Ala Arg Ser Asp Ala Ala Pro Arg Arg
 35 40 45

Glu Leu Val Leu Phe Asp Lys Pro Thr Arg Gly Thr Ser Ile Lys Glu
 50 55 60

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

Gln Leu Arg Thr Cys Thr Thr Leu Ser Gly Leu Ala Ser Gln Val Glu
 305 310 315 320

Ala His His Ser Leu Val Leu Ser His Leu Lys Thr Leu Leu Trp Lys
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Lys Ile Ser Asn Thr Lys Tyr Ser
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<210> 75

<211> 1645

<212> DNA

<213> Homo sapiens

<400> 75

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gtcctactcg gagcgctgtc gcggccatgt ctgccagggtg gtcatttgtg accagtaccg      300
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<210> 76

<211> 2410

<212> DNA

<213> Homo sapiens

<400> 76

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<210> 77
<211> 409
<212> PRT
<213> Homo sapiens

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<400> 77
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Met Glu Glu Ser Trp Glu Ala Ala Pro Gly Gly Gln Ala Gly Ala Glu
1          5          10          15

```

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Leu Pro Met Glu Pro Val Gly Ser Leu Val Pro Thr Leu Glu Gln Pro
20          25          30

```

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Gln Val Pro Ala Lys Val Arg Gln Pro Glu Gly Pro Glu Ser Ser Pro
35          40          45

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Ser Pro Ala Gly Ala Val Glu Lys Ala Ala Gly Ala Gly Leu Glu Pro
50          55          60

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Ser Ser Lys Lys Lys Pro Pro Ser Pro Arg Pro Gly Ser Pro Arg Val
 65 70 75 80

 Pro Pro Leu Ser Leu Gly Tyr Gly Val Cys Pro Glu Pro Pro Ser Pro
 85 90 95

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

 Glu Pro Ala Pro Ser Ala Trp Ala Pro Met Glu Leu Gln Val Asp Val
 115 120 125

 Arg Val Lys Pro Val Gly Ala Ala Gly Gly Ser Ser Thr Pro Ser Pro
 130 135 140

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

 Phe Ser Arg His Ala Asp Pro Ala His Gln Leu Leu Leu Arg Ala Pro
 165 170 175

 Ser Gln Gly Gly Thr Trp Gly Arg Arg Ser Pro Leu Ala Ala Ala Arg
 180 185 190

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

 Ser Ala Gly Ser Pro Gly Ser Pro Thr Cys Cys Arg Cys Lys Glu Leu
 210 215 220

 Gly Leu Glu Lys Glu Asp Ala Ala Leu Leu Pro Arg Ala Gly Leu Asp
 225 230 235 240

 Gly Asp Glu Lys Leu Pro Arg Ala Val Thr Leu Thr Gly Leu Pro Met
 245 250 255

 Tyr Val Lys Ser Leu Tyr Trp Ala Leu Ala Phe Met Ala Val Leu Leu
 260 265 270

 Ala Val Ser Gly Val Val Ile Val Val Leu Ala Ser Arg Ala Gly Ala
 275 280 285

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

 Tyr Tyr Phe Ser Ala Glu Ala Gln Ala Trp Glu Ala Ser Gln Ala Phe

198

Glu Pro Ala Pro Ser Ala Trp Ala Pro Met Glu Leu Gln Val Asp Val
 115 120 125

Arg Val Lys Pro Val Gly Ala Ala Gly Gly Ser Ser Thr Pro Ser Pro
 130 135 140

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

Phe Ser Arg His Ala Asp Pro Ala His Gln Leu Leu Leu Arg Ala Pro
 165 170 175

Ser Gln Gly Gly Thr Trp Gly Arg Arg Ser Pro Leu Ala Ala Ala Arg
 180 185 190

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

Ser Ala Gly Ser Pro Gly Ser Pro Thr Cys Cys Arg Cys Lys Glu Leu
 210 215 220

Gly Leu Glu Lys Glu Asp Ala Ala Leu Leu Pro Arg Ala Gly Leu Asp
 225 230 235 240

Gly Asp Glu Lys Leu Pro Arg Ala Val Thr Leu Thr Asp Ser Leu Arg
 245 250 255

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

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

Arg Gly Pro Ser Asp Leu Gly Ser Ala Trp Ser Ser Ala Cys Gln Ala
 290 295 300

Asp Ala Ala Pro Pro Thr Gly Glu Ala Ser
 305 310

<210> 79

<211> 1544

<212> DNA

<213> Homo sapiens

<400> 79

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<210> 80

<211> 1192

<212> DNA

<213> Homo sapiens

<400> 80

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ccaatggagc cctggtggaag cctggtcccc acgctggagc agccgcaggt gcccgcgaaag 180
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<210> 81
<211> 518
<212> PRT
<213> Homo sapiens

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<400> 81
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Met Leu Ala Ala Ala Ser Lys Tyr Arg His Gly Asn Met Val Phe Phe
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Asp Val Leu Gly Leu Phe Val Ile Ala Tyr Pro Ser Arg Ile Gly Ser
          20           25           30

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Ile Ile Asn Tyr Met Val Val Met Gly Val Val Leu Tyr Leu Gly Lys
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Lys Phe Leu Gln Pro Lys His Lys Thr Gly Asn Tyr Lys Lys Asp Phe
          50           55           60

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Leu Cys Gly Leu Gly Ile Thr Leu Ile Ser Trp Phe Thr Ser Leu Val
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Thr Val Leu Ile Ile Ala Val Phe Ile Ser Leu Ile Gly Gln Ser Leu

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Ser Trp Tyr Asn His Phe Tyr Val Ser Val Cys Leu Tyr Gly Thr Ala
 100 105 110

Thr Val Ala Lys Ile Ile Leu Ile His Thr Leu Ala Lys Arg Phe Tyr
 115 120 125

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

Ser Leu Phe Val His Cys Cys Phe Leu Val Thr Leu Thr Tyr Gln Gly
 145 150 155 160

Leu Cys Ser Ala Phe Ile Ser Ala Val Trp Val Ala Phe Pro Leu Leu
 165 170 175

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

Lys Phe Ile Ala Phe Tyr Leu Leu Gly Met Phe Ile Pro Tyr Leu Tyr
 195 200 205

Ala Leu Tyr Leu Ile Trp Ala Val Phe Glu Met Phe Thr Pro Ile Leu
 210 215 220

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

Leu Ala Gly Cys Thr Met Ile Leu Ser Ser Tyr Phe Ile Asn Phe Ile
 245 250 255

Tyr Leu Ala Lys Ser Thr Lys Lys Thr Met Leu Thr Leu Thr Leu Val
 260 265 270

Cys Ala Ile Thr Phe Leu Leu Val Cys Ser Gly Thr Phe Phe Pro Tyr
 275 280 285

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

Met Thr Arg Thr Phe His Asp Leu Glu Gly Asn Ala Val Lys Arg Asp
 305 310 315 320

Ser Gly Ile Trp Ile Asn Gly Phe Asp Tyr Thr Gly Ile Ser His Ile
 325 330 335

Thr Pro His Ile Pro Glu Ile Asn Asp Ser Ile Arg Ala His Cys Glu
 340 345 350

Glu Asn Ala Pro Leu Cys Gly Phe Pro Trp Tyr Leu Pro Val His Phe
 355 360 365

Leu Ile Arg Lys Asn Trp Tyr Leu Pro Ala Pro Glu Val Ser Pro Arg
 370 375 380

Asn Pro Pro His Phe Arg Leu Ile Ser Lys Glu Gln Thr Pro Trp Asp
 385 390 395 400

Ser Ile Lys Leu Thr Phe Glu Ala Thr Gly Pro Ser His Met Ser Phe
 405 410 415

Tyr Val Arg Ala His Lys Gly Ser Thr Leu Ser Gln Trp Ser Leu Gly
 420 425 430

Asn Gly Thr Pro Val Thr Ser Lys Gly Gly Asp Tyr Phe Val Phe Tyr
 435 440 445

Ser His Gly Leu Gln Ala Ser Ala Trp Gln Phe Trp Ile Glu Val Gln
 450 455 460

Val Ser Glu Glu His Pro Glu Gly Met Val Thr Val Ala Ile Ala Ala
 465 470 475 480

His Tyr Leu Ser Gly Glu Asp Lys Arg Ser Pro Gln Leu Asp Ala Leu
 485 490 495

Lys Glu Lys Phe Pro Asp Trp Thr Phe Pro Ser Ala Trp Val Cys Thr
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Tyr Asp Leu Phe Val Phe
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<210> 82

<211> 904

<212> PRT

<213> Homo sapiens

<400> 82

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Thr	Arg	Lys	Arg	Ser	Pro	Gly	Gly	Ser	Gly	Gly	Ala	Ser	Arg	Gly	Ala
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Gly	Thr	Gly	Leu	Ser	Glu	Val	Arg	Ala	Ala	Leu	Gly	Leu	Ala	Leu	Tyr
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Leu	Ile	Ala	Leu	Arg	Thr	Leu	Val	Gln	Leu	Ser	Leu	Gln	Gln	Leu	Val
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Leu	Arg	Gly	Ala	Ala	Gly	His	Arg	Gly	Glu	Phe	Asp	Ala	Leu	Gln	Ala
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Arg	Asp	Tyr	Leu	Glu	His	Ile	Thr	Ser	Ile	Gly	Pro	Arg	Thr	Thr	Gly
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Ser	Pro	Glu	Asn	Glu	Ile	Leu	Thr	Val	His	Tyr	Leu	Leu	Glu	Gln	Ile
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Lys	Leu	Ile	Glu	Val	Gln	Ser	Asn	Ser	Leu	His	Lys	Ile	Ser	Val	Asp
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Val	Gln	Arg	Pro	Thr	Gly	Ser	Phe	Ser	Ile	Asp	Phe	Leu	Gly	Gly	Phe
				165					170					175	
Thr	Ser	Tyr	Tyr	Asp	Asn	Ile	Thr	Asn	Val	Val	Val	Lys	Leu	Glu	Pro
			180					185					190		
Arg	Asp	Gly	Ala	Gln	His	Ala	Val	Leu	Ala	Asn	Cys	His	Phe	Asp	Ser
		195					200					205			
Val	Ala	Asn	Ser	Pro	Gly	Ala	Ser	Asp	Asp	Ala	Val	Ser	Cys	Ser	Val
	210					215					220				
Met	Leu	Glu	Val	Leu	Arg	Val	Leu	Ser	Thr	Ser	Ser	Glu	Ala	Leu	His
225					230					235					240
His	Ala	Val	Ile	Phe	Leu	Phe	Asn	Gly	Ala	Glu	Glu	Asn	Val	Leu	Gln
				245					250					255	
Ala	Ser	His	Gly	Phe	Ile	Thr	Gln	His	Pro	Trp	Ala	Ser	Leu	Ile	Arg
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204

Ala Phe Ile Asn Leu Glu Ala Ala Gly Val Gly Gly Lys Glu Leu Val
 275 280 285

Phe Gln Thr Gly Pro Glu Asn Pro Trp Leu Val Gln Ala Tyr Val Ser
 290 295 300

Ala Ala Lys His Pro Phe Ala Ser Val Val Ala Gln Glu Val Phe Gln
 305 310 315 320

Ser Gly Ile Ile Pro Ser Asp Thr Asp Phe Arg Ile Tyr Arg Asp Phe
 325 330 335

Gly Asn Ile Pro Gly Ile Asp Leu Ala Phe Ile Glu Asn Gly Tyr Ile
 340 345 350

Tyr His Thr Lys Tyr Asp Thr Ala Asp Arg Ile Leu Thr Asp Ser Ile
 355 360 365

Gln Arg Ala Gly Asp Asn Ile Leu Ala Val Leu Lys His Leu Ala Thr
 370 375 380

Ser Asp Met Leu Ala Ala Ala Ser Lys Tyr Arg His Gly Asn Met Val
 385 390 395 400

Phe Phe Asp Val Leu Gly Leu Phe Val Ile Ala Tyr Pro Ser Arg Ile
 405 410 415

Gly Ser Ile Ile Asn Tyr Met Val Val Met Gly Val Val Leu Tyr Leu
 420 425 430

Gly Lys Lys Phe Leu Gln Pro Lys His Lys Thr Gly Asn Tyr Lys Lys
 435 440 445

Asp Phe Leu Cys Gly Leu Gly Ile Thr Leu Ile Ser Trp Phe Thr Ser
 450 455 460

Leu Val Thr Val Leu Ile Ile Ala Val Phe Ile Ser Leu Ile Gly Gln
 465 470 475 480

Ser Leu Ser Trp Tyr Asn His Phe Tyr Val Ser Val Cys Leu Tyr Gly
 485 490 495

Thr Ala Thr Val Ala Lys Ile Ile Leu Ile His Thr Leu Ala Lys Arg
 500 505 510

Phe Tyr Tyr Met Asn Ala Ser Ala Gln Tyr Leu Gly Glu Val Phe Phe
 515 520 525

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

206

Pro Arg Asn Pro Pro His Phe Arg Leu Ile Ser Lys Glu Gln Thr Pro
 770 775 780

Trp Asp Ser Ile Lys Leu Thr Phe Glu Ala Thr Gly Pro Ser His Met
 785 790 795 800

Ser Phe Tyr Val Arg Ala His Lys Gly Ser Thr Leu Ser Gln Trp Ser
 805 810 815

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

Phe Tyr Ser His Gly Leu Gln Ala Ser Ala Trp Gln Phe Trp Ile Glu
 835 840 845

Val Gln Val Ser Glu Glu His Pro Glu Gly Met Val Thr Val Ala Ile
 850 855 860

Ala Ala His Tyr Leu Ser Gly Glu Asp Lys Arg Ser Pro Gln Leu Asp
 865 870 875 880

Ala Leu Lys Glu Lys Phe Pro Asp Trp Thr Phe Pro Ser Ala Trp Val
 885 890 895

Cys Thr Tyr Asp Leu Phe Val Phe
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<210> 83
 <211> 419
 <212> PRT
 <213> Homo sapiens

<400> 83

Met Val Val Met Gly Val Val Leu Tyr Leu Gly Lys Lys Phe Leu Gln
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Pro Lys His Lys Thr Gly Asn Tyr Lys Lys Asp Phe Leu Cys Gly Leu
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Gly Ile Thr Leu Ile Ser Trp Phe Thr Ser Leu Val Thr Val Leu Ile
 35 40 45

Ile Ala Val Phe Ile Ser Leu Ile Gly Gln Ser Leu Ser Trp Tyr Asn
 50 55 60

His Phe Tyr Val Ser Val Cys Leu Tyr Gly Thr Ala Thr Val Ala Lys
 65 70 75 80

Ile Ile Leu Ile His Thr Leu Ala Lys Arg Phe Tyr Tyr Met Asn Ala
 85 90 95

Ser Ala Gln Tyr Leu Gly Glu Val Phe Phe Asp Ile Ser Leu Phe Val
 100 105 110

His Cys Cys Phe Leu Val Thr Leu Thr Tyr Gln Gly Leu Cys Ser Ala
 115 120 125

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

Val His Lys Asp Phe Lys Gln His Gly Ala Gln Gly Lys Phe Ile Ala
 145 150 155 160

Phe Tyr Leu Leu Gly Met Phe Ile Pro Tyr Leu Tyr Ala Leu Tyr Leu
 165 170 175

Ile Trp Ala Val Phe Glu Met Phe Thr Pro Ile Leu Gly Arg Ser Gly
 180 185 190

Ser Glu Ile Pro Pro Asp Val Val Leu Ala Ser Ile Leu Ala Gly Cys
 195 200 205

Thr Met Ile Leu Ser Ser Tyr Phe Ile Asn Phe Ile Tyr Leu Ala Lys
 210 215 220

Ser Thr Lys Lys Thr Met Leu Thr Leu Thr Leu Val Cys Ala Ile Thr
 225 230 235 240

Phe Leu Leu Val Cys Ser Gly Thr Phe Phe Pro Tyr Ser Ser Asn Pro
 245 250 255

Ala Asn Pro Lys Pro Lys Arg Val Phe Leu Gln His Met Thr Arg Thr
 260 265 270

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

Ile Asn Gly Phe Asp Tyr Thr Gly Ile Ser His Ile Thr Pro His Ile
 290 295 300

Pro Glu Ile Asn Asp Ser Ile Arg Ala His Cys Glu Glu Asn Ala Pro
 305 310 315 320

Leu Cys Gly Phe Pro Trp Tyr Leu Pro Val His Phe Leu Ile Arg Lys

325

330

335

Asn Trp Tyr Leu Pro Ala Pro Glu Val Ser Pro Arg Asn Pro Pro His
 340 345 350

Phe Arg Leu Ile Ser Lys Glu Gln Thr Pro Trp Asp Ser Ile Lys Leu
 355 360 365

Thr Phe Glu Ala Thr Ala Cys Leu Pro Ile Leu Gln Ile Leu Asp Leu
 370 375 380

Pro Ala Ser Thr Ile Met Thr Lys Pro Tyr Val Leu Leu Cys Ser Ser
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Pro Gln Arg Val Asn Thr Phe Ser Val Val Ser Trp Gln Trp His Pro
 405 410 415

Ser His Lys

<210> 84
 <211> 4974
 <212> DNA
 <213> Homo sapiens

<400> 84
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<210> 85

<211> 5338

<212> DNA

<213> Homo sapiens

<400> 85

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