

SEQUENCE LISTING

<110> CODIAK BIOSCIENCES, INC.

<120> PREPARATION OF THERAPEUTIC EXOSOMES USING MEMBRANE PROTEINS

<130> 37274-40714/PCT

<140>

<141>

<150> 62/656,956

<151> 2018-04-12

<150> 62/550,543

<151> 2017-08-25

<160> 46

<170> PatentIn version 3.5

<210> 1

<211> 879

<212> PRT

<213> Homo sapiens

<400> 1

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

Ala Leu Cys Arg Gly Arg Val Val Arg Val Pro Thr Ala Thr Leu Val
20 25 30

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

Asp Gly Pro Ser Glu Gln Asn Phe Asp Trp Ser Phe Ser Ser Leu Gly
50 55 60

Ser Ser Phe Val Glu Leu Ala Ser Thr Trp Glu Val Gly Phe Pro Ala
65 70 75 80

Gln Leu Tyr Gln Glu Arg Leu Gln Arg Gly Glu Ile Leu Leu Arg Arg
85 90 95

Thr Ala Asn Asp Ala Val Glu Leu His Ile Lys Asn Val Gln Pro Ser
100 105 110

Asp Gln Gly His Tyr Lys Cys Ser Thr Pro Ser Thr Asp Ala Thr Val
115 120 125

Gln Gly Asn Tyr Glu Asp Thr Val Gln Val Lys Val Leu Ala Asp Ser
130 135 140

Leu His Val Gly Pro Ser Ala Arg Pro Pro Pro Ser Leu Ser Leu Arg
145 150 155 160

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

Leu His Thr His Leu Ala Leu Leu Trp Glu Val His Arg Gly Pro Ala
180 185 190

Arg Arg Ser Val Leu Ala Leu Thr His Glu Gly Arg Phe His Pro Gly
195 200 205

Leu Gly Tyr Glu Gln Arg Tyr His Ser Gly Asp Val Arg Leu Asp Thr
210 215 220

Val Gly Ser Asp Ala Tyr Arg Leu Ser Val Ser Arg Ala Leu Ser Ala
225 230 235 240

Asp Gln Gly Ser Tyr Arg Cys Ile Val Ser Glu Trp Ile Ala Glu Gln
245 250 255

Gly Asn Trp Gln Glu Ile Gln Glu Lys Ala Val Glu Val Ala Thr Val
260 265 270

Val Ile Gln Pro Ser Val Leu Arg Ala Ala Val Pro Lys Asn Val Ser
275 280 285

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

Arg Ala Asp Asp Val Arg Pro Glu Val Thr Trp Ser Phe Ser Arg Met
305 310 315 320

Pro Asp Ser Thr Leu Pro Gly Ser Arg Val Leu Ala Arg Leu Asp Arg

325

330

335

Asp Ser Leu Val His Ser Ser Pro His Val Ala Leu Ser His Val Asp
 340 345 350

Ala Arg Ser Tyr His Leu Leu Val Arg Asp Val Ser Lys Glu Asn Ser
 355 360 365

Gly Tyr Tyr Tyr Cys His Val Ser Leu Trp Ala Pro Gly His Asn Arg
 370 375 380

Ser Trp His Lys Val Ala Glu Ala Val Ser Ser Pro Ala Gly Val Gly
 385 390 395 400

Val Thr Trp Leu Glu Pro Asp Tyr Gln Val Tyr Leu Asn Ala Ser Lys
 405 410 415

Val Pro Gly Phe Ala Asp Asp Pro Thr Glu Leu Ala Cys Arg Val Val
 420 425 430

Asp Thr Lys Ser Gly Glu Ala Asn Val Arg Phe Thr Val Ser Trp Tyr
 435 440 445

Tyr Arg Met Asn Arg Arg Ser Asp Asn Val Val Thr Ser Glu Leu Leu
 450 455 460

Ala Val Met Asp Gly Asp Trp Thr Leu Lys Tyr Gly Glu Arg Ser Lys
 465 470 475 480

Gln Arg Ala Gln Asp Gly Asp Phe Ile Phe Ser Lys Glu His Thr Asp
 485 490 495

Thr Phe Asn Phe Arg Ile Gln Arg Thr Thr Glu Glu Asp Arg Gly Asn
 500 505 510

Tyr Tyr Cys Val Val Ser Ala Trp Thr Lys Gln Arg Asn Asn Ser Trp
 515 520 525

Val Lys Ser Lys Asp Val Phe Ser Lys Pro Val Asn Ile Phe Trp Ala
 530 535 540

Leu Glu Asp Ser Val Leu Val Val Lys Ala Arg Gln Pro Lys Pro Phe
545 550 555 560

Phe Ala Ala Gly Asn Thr Phe Glu Met Thr Cys Lys Val Ser Ser Lys
565 570 575

Asn Ile Lys Ser Pro Arg Tyr Ser Val Leu Ile Met Ala Glu Lys Pro
580 585 590

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

Asp Gln Asp Ser Val Val Lys Leu Glu Asn Trp Thr Asp Ala Ser Arg
610 615 620

Val Asp Gly Val Val Leu Glu Lys Val Gln Glu Asp Glu Phe Arg Tyr
625 630 635 640

Arg Met Tyr Gln Thr Gln Val Ser Asp Ala Gly Leu Tyr Arg Cys Met
645 650 655

Val Thr Ala Trp Ser Pro Val Arg Gly Ser Leu Trp Arg Glu Ala Ala
660 665 670

Thr Ser Leu Ser Asn Pro Ile Glu Ile Asp Phe Gln Thr Ser Gly Pro
675 680 685

Ile Phe Asn Ala Ser Val His Ser Asp Thr Pro Ser Val Ile Arg Gly
690 695 700

Asp Leu Ile Lys Leu Phe Cys Ile Ile Thr Val Glu Gly Ala Ala Leu
705 710 715 720

Asp Pro Asp Asp Met Ala Phe Asp Val Ser Trp Phe Ala Val His Ser
725 730 735

Phe Gly Leu Asp Lys Ala Pro Val Leu Leu Ser Ser Leu Asp Arg Lys
740 745 750

Gly Ile Val Thr Thr Ser Arg Arg Asp Trp Lys Ser Asp Leu Ser Leu

755

760

765

Glu Arg Val Ser Val Leu Glu Phe Leu Leu Gln Val His Gly Ser Glu
 770 775 780

Asp Gln Asp Phe Gly Asn Tyr Tyr Cys Ser Val Thr Pro Trp Val Lys
 785 790 795 800

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

Val Phe Ile Thr Val Lys Met Asp Val Leu Asn Ala Phe Lys Tyr Pro
 820 825 830

Leu Leu Ile Gly Val Gly Leu Ser Thr Val Ile Gly Leu Leu Ser Cys
 835 840 845

Leu Ile Gly Tyr Cys Ser Ser His Trp Cys Cys Lys Lys Glu Val Gln
 850 855 860

Glu Thr Arg Arg Glu Arg Arg Arg Leu Met Ser Met Glu Met Asp
 865 870 875

<210> 2

<211> 731

<212> PRT

<213> Homo sapiens

<400> 2

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

Leu Ala Leu Leu Trp Glu Val His Arg Gly Pro Ala Arg Arg Ser Val
 35 40 45

Leu Ala Leu Thr His Glu Gly Arg Phe His Pro Gly Leu Gly Tyr Glu
 50 55 60

Gln Arg Tyr His Ser Gly Asp Val Arg Leu Asp Thr Val Gly Ser Asp

65

70

75

80

Ala Tyr Arg Leu Ser Val Ser Arg Ala Leu Ser Ala Asp Gln Gly Ser
 85 90 95

Tyr Arg Cys Ile Val Ser Glu Trp Ile Ala Glu Gln Gly Asn Trp Gln
 100 105 110

Glu Ile Gln Glu Lys Ala Val Glu Val Ala Thr Val Val Ile Gln Pro
 115 120 125

Ser Val Leu Arg Ala Ala Val Pro Lys Asn Val Ser Val Ala Glu Gly
 130 135 140

Lys Glu Leu Asp Leu Thr Cys Asn Ile Thr Thr Asp Arg Ala Asp Asp
 145 150 155 160

Val Arg Pro Glu Val Thr Trp Ser Phe Ser Arg Met Pro Asp Ser Thr
 165 170 175

Leu Pro Gly Ser Arg Val Leu Ala Arg Leu Asp Arg Asp Ser Leu Val
 180 185 190

His Ser Ser Pro His Val Ala Leu Ser His Val Asp Ala Arg Ser Tyr
 195 200 205

His Leu Leu Val Arg Asp Val Ser Lys Glu Asn Ser Gly Tyr Tyr Tyr
 210 215 220

Cys His Val Ser Leu Trp Ala Pro Gly His Asn Arg Ser Trp His Lys
 225 230 235 240

Val Ala Glu Ala Val Ser Ser Pro Ala Gly Val Gly Val Thr Trp Leu
 245 250 255

Glu Pro Asp Tyr Gln Val Tyr Leu Asn Ala Ser Lys Val Pro Gly Phe
 260 265 270

Ala Asp Asp Pro Thr Glu Leu Ala Cys Arg Val Val Asp Thr Lys Ser
 275 280 285

Gly Glu Ala Asn Val Arg Phe Thr Val Ser Trp Tyr Tyr Arg Met Asn
290 295 300

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

Gly Asp Trp Thr Leu Lys Tyr Gly Glu Arg Ser Lys Gln Arg Ala Gln
325 330 335

Asp Gly Asp Phe Ile Phe Ser Lys Glu His Thr Asp Thr Phe Asn Phe
340 345 350

Arg Ile Gln Arg Thr Thr Glu Glu Asp Arg Gly Asn Tyr Tyr Cys Val
355 360 365

Val Ser Ala Trp Thr Lys Gln Arg Asn Asn Ser Trp Val Lys Ser Lys
370 375 380

Asp Val Phe Ser Lys Pro Val Asn Ile Phe Trp Ala Leu Glu Asp Ser
385 390 395 400

Val Leu Val Val Lys Ala Arg Gln Pro Lys Pro Phe Phe Ala Ala Gly
405 410 415

Asn Thr Phe Glu Met Thr Cys Lys Val Ser Ser Lys Asn Ile Lys Ser
420 425 430

Pro Arg Tyr Ser Val Leu Ile Met Ala Glu Lys Pro Val Gly Asp Leu
435 440 445

Ser Ser Pro Asn Glu Thr Lys Tyr Ile Ile Ser Leu Asp Gln Asp Ser
450 455 460

Val Val Lys Leu Glu Asn Trp Thr Asp Ala Ser Arg Val Asp Gly Val
465 470 475 480

Val Leu Glu Lys Val Gln Glu Asp Glu Phe Arg Tyr Arg Met Tyr Gln
485 490 495

Thr Gln Val Ser Asp Ala Gly Leu Tyr Arg Cys Met Val Thr Ala Trp

500

505

510

Ser Pro Val Arg Gly Ser Leu Trp Arg Glu Ala Ala Thr Ser Leu Ser
 515 520 525

Asn Pro Ile Glu Ile Asp Phe Gln Thr Ser Gly Pro Ile Phe Asn Ala
 530 535 540

Ser Val His Ser Asp Thr Pro Ser Val Ile Arg Gly Asp Leu Ile Lys
 545 550 555 560

Leu Phe Cys Ile Ile Thr Val Glu Gly Ala Ala Leu Asp Pro Asp Asp
 565 570 575

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

Lys Ala Pro Val Leu Leu Ser Ser Leu Asp Arg Lys Gly Ile Val Thr
 595 600 605

Thr Ser Arg Arg Asp Trp Lys Ser Asp Leu Ser Leu Glu Arg Val Ser
 610 615 620

Val Leu Glu Phe Leu Leu Gln Val His Gly Ser Glu Asp Gln Asp Phe
 625 630 635 640

Gly Asn Tyr Tyr Cys Ser Val Thr Pro Trp Val Lys Ser Pro Thr Gly
 645 650 655

Ser Trp Gln Lys Glu Ala Glu Ile His Ser Lys Pro Val Phe Ile Thr
 660 665 670

Val Lys Met Asp Val Leu Asn Ala Phe Lys Tyr Pro Leu Leu Ile Gly
 675 680 685

Val Gly Leu Ser Thr Val Ile Gly Leu Leu Ser Cys Leu Ile Gly Tyr
 690 695 700

Cys Ser Ser His Trp Cys Cys Lys Lys Glu Val Gln Glu Thr Arg Arg
 705 710 715 720

Glu Arg Arg Arg Leu Met Ser Met Glu Met Asp
725 730

<210> 3
<211> 611
<212> PRT
<213> Homo sapiens

<400> 3
Val Ala Thr Val Val Ile Gln Pro Ser Val Leu Arg Ala Ala Val Pro
1 5 10 15

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

Ile Thr Thr Asp Arg Ala Asp Asp Val Arg Pro Glu Val Thr Trp Ser
35 40 45

Phe Ser Arg Met Pro Asp Ser Thr Leu Pro Gly Ser Arg Val Leu Ala
50 55 60

Arg Leu Asp Arg Asp Ser Leu Val His Ser Ser Pro His Val Ala Leu
65 70 75 80

Ser His Val Asp Ala Arg Ser Tyr His Leu Leu Val Arg Asp Val Ser
85 90 95

Lys Glu Asn Ser Gly Tyr Tyr Tyr Cys His Val Ser Leu Trp Ala Pro
100 105 110

Gly His Asn Arg Ser Trp His Lys Val Ala Glu Ala Val Ser Ser Pro
115 120 125

Ala Gly Val Gly Val Thr Trp Leu Glu Pro Asp Tyr Gln Val Tyr Leu
130 135 140

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

Cys Arg Val Val Asp Thr Lys Ser Gly Glu Ala Asn Val Arg Phe Thr
165 170 175

Val Ser Trp Tyr Tyr Arg Met Asn Arg Arg Ser Asp Asn Val Val Thr
180 185 190

Ser Glu Leu Leu Ala Val Met Asp Gly Asp Trp Thr Leu Lys Tyr Gly
195 200 205

Glu Arg Ser Lys Gln Arg Ala Gln Asp Gly Asp Phe Ile Phe Ser Lys
210 215 220

Glu His Thr Asp Thr Phe Asn Phe Arg Ile Gln Arg Thr Thr Glu Glu
225 230 235 240

Asp Arg Gly Asn Tyr Tyr Cys Val Val Ser Ala Trp Thr Lys Gln Arg
245 250 255

Asn Asn Ser Trp Val Lys Ser Lys Asp Val Phe Ser Lys Pro Val Asn
260 265 270

Ile Phe Trp Ala Leu Glu Asp Ser Val Leu Val Val Lys Ala Arg Gln
275 280 285

Pro Lys Pro Phe Phe Ala Ala Gly Asn Thr Phe Glu Met Thr Cys Lys
290 295 300

Val Ser Ser Lys Asn Ile Lys Ser Pro Arg Tyr Ser Val Leu Ile Met
305 310 315 320

Ala Glu Lys Pro Val Gly Asp Leu Ser Ser Pro Asn Glu Thr Lys Tyr
325 330 335

Ile Ile Ser Leu Asp Gln Asp Ser Val Val Lys Leu Glu Asn Trp Thr
340 345 350

Asp Ala Ser Arg Val Asp Gly Val Val Leu Glu Lys Val Gln Glu Asp
355 360 365

Glu Phe Arg Tyr Arg Met Tyr Gln Thr Gln Val Ser Asp Ala Gly Leu
370 375 380

Tyr Arg Cys Met Val Thr Ala Trp Ser Pro Val Arg Gly Ser Leu Trp

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

Glu Met Asp
610

<210> 4
<211> 485
<212> PRT
<213> Homo sapiens

<400> 4
Ser Pro Ala Gly Val Gly Val Thr Trp Leu Glu Pro Asp Tyr Gln Val
1 5 10 15

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

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

Phe Thr Val Ser Trp Tyr Tyr Arg Met Asn Arg Arg Ser Asp Asn Val
50 55 60

Val Thr Ser Glu Leu Leu Ala Val Met Asp Gly Asp Trp Thr Leu Lys
65 70 75 80

Tyr Gly Glu Arg Ser Lys Gln Arg Ala Gln Asp Gly Asp Phe Ile Phe
85 90 95

Ser Lys Glu His Thr Asp Thr Phe Asn Phe Arg Ile Gln Arg Thr Thr
100 105 110

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

Gln Arg Asn Asn Ser Trp Val Lys Ser Lys Asp Val Phe Ser Lys Pro
130 135 140

Val Asn Ile Phe Trp Ala Leu Glu Asp Ser Val Leu Val Val Lys Ala
145 150 155 160

Arg Gln Pro Lys Pro Phe Phe Ala Ala Gly Asn Thr Phe Glu Met Thr
165 170 175

Cys Lys Val Ser Ser Lys Asn Ile Lys Ser Pro Arg Tyr Ser Val Leu
180 185 190

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

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

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

Glu Asp Glu Phe Arg Tyr Arg Met Tyr Gln Thr Gln Val Ser Asp Ala
245 250 255

Gly Leu Tyr Arg Cys Met Val Thr Ala Trp Ser Pro Val Arg Gly Ser
260 265 270

Leu Trp Arg Glu Ala Ala Thr Ser Leu Ser Asn Pro Ile Glu Ile Asp
275 280 285

Phe Gln Thr Ser Gly Pro Ile Phe Asn Ala Ser Val His Ser Asp Thr
290 295 300

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

Val Glu Gly Ala Ala Leu Asp Pro Asp Asp Met Ala Phe Asp Val Ser
325 330 335

Trp Phe Ala Val His Ser Phe Gly Leu Asp Lys Ala Pro Val Leu Leu
340 345 350

Ser Ser Leu Asp Arg Lys Gly Ile Val Thr Thr Ser Arg Arg Asp Trp
355 360 365

Lys Ser Asp Leu Ser Leu Glu Arg Val Ser Val Leu Glu Phe Leu Leu
370 375 380

Gln Val His Gly Ser Glu Asp Gln Asp Phe Gly Asn Tyr Tyr Cys Ser

385 390 395 400
 Val Thr Pro Trp Val Lys Ser Pro Thr Gly Ser Trp Gln Lys Glu Ala
 405 410 415
 Glu Ile His Ser Lys Pro Val Phe Ile Thr Val Lys Met Asp Val Leu
 420 425 430
 Asn Ala Phe Lys Tyr Pro Leu Leu Ile Gly Val Gly Leu Ser Thr Val
 435 440 445
 Ile Gly Leu Leu Ser Cys Leu Ile Gly Tyr Cys Ser Ser His Trp Cys
 450 455 460
 Cys Lys Lys Glu Val Gln Glu Thr Arg Arg Glu Arg Arg Arg Leu Met
 465 470 475 480
 Ser Met Glu Met Asp
 485
 <210> 5
 <211> 343
 <212> PRT
 <213> Homo sapiens
 <400> 5
 Lys Pro Val Asn Ile Phe Trp Ala Leu Glu Asp Ser Val Leu Val Val
 1 5 10 15
 Lys Ala Arg Gln Pro Lys Pro Phe Phe Ala Ala Gly Asn Thr Phe Glu
 20 25 30
 Met Thr Cys Lys Val Ser Ser Lys Asn Ile Lys Ser Pro Arg Tyr Ser
 35 40 45
 Val Leu Ile Met Ala Glu Lys Pro Val Gly Asp Leu Ser Ser Pro Asn
 50 55 60
 Glu Thr Lys Tyr Ile Ile Ser Leu Asp Gln Asp Ser Val Val Lys Leu
 65 70 75 80
 Glu Asn Trp Thr Asp Ala Ser Arg Val Asp Gly Val Val Leu Glu Lys

85

90

95

Val Gln Glu Asp Glu Phe Arg Tyr Arg Met Tyr Gln Thr Gln Val Ser
 100 105 110

Asp Ala Gly Leu Tyr Arg Cys Met Val Thr Ala Trp Ser Pro Val Arg
 115 120 125

Gly Ser Leu Trp Arg Glu Ala Ala Thr Ser Leu Ser Asn Pro Ile Glu
 130 135 140

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

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

Ile Thr Val Glu Gly Ala Ala Leu Asp Pro Asp Asp Met Ala Phe Asp
 180 185 190

Val Ser Trp Phe Ala Val His Ser Phe Gly Leu Asp Lys Ala Pro Val
 195 200 205

Leu Leu Ser Ser Leu Asp Arg Lys Gly Ile Val Thr Thr Ser Arg Arg
 210 215 220

Asp Trp Lys Ser Asp Leu Ser Leu Glu Arg Val Ser Val Leu Glu Phe
 225 230 235 240

Leu Leu Gln Val His Gly Ser Glu Asp Gln Asp Phe Gly Asn Tyr Tyr
 245 250 255

Cys Ser Val Thr Pro Trp Val Lys Ser Pro Thr Gly Ser Trp Gln Lys
 260 265 270

Glu Ala Glu Ile His Ser Lys Pro Val Phe Ile Thr Val Lys Met Asp
 275 280 285

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

Thr Val Ile Gly Leu Leu Ser Cys Leu Ile Gly Tyr Cys Ser Ser His
305 310 315 320

Trp Cys Cys Lys Lys Glu Val Gln Glu Thr Arg Arg Glu Arg Arg Arg
325 330 335

Leu Met Ser Met Glu Met Asp
340

<210> 6
<211> 217
<212> PRT
<213> Homo sapiens

<400> 6
Val Arg Gly Ser Leu Trp Arg Glu Ala Ala Thr Ser Leu Ser Asn Pro
1 5 10 15

Ile Glu Ile Asp Phe Gln Thr Ser Gly Pro Ile Phe Asn Ala Ser Val
20 25 30

His Ser Asp Thr Pro Ser Val Ile Arg Gly Asp Leu Ile Lys Leu Phe
35 40 45

Cys Ile Ile Thr Val Glu Gly Ala Ala Leu Asp Pro Asp Asp Met Ala
50 55 60

Phe Asp Val Ser Trp Phe Ala Val His Ser Phe Gly Leu Asp Lys Ala
65 70 75 80

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

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

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

Tyr Tyr Cys Ser Val Thr Pro Trp Val Lys Ser Pro Thr Gly Ser Trp
130 135 140

Gln Lys Glu Ala Glu Ile His Ser Lys Pro Val Phe Ile Thr Val Lys
145 150 155 160

Met Asp Val Leu Asn Ala Phe Lys Tyr Pro Leu Leu Ile Gly Val Gly
165 170 175

Leu Ser Thr Val Ile Gly Leu Leu Ser Cys Leu Ile Gly Tyr Cys Ser
180 185 190

Ser His Trp Cys Cys Lys Lys Glu Val Gln Glu Thr Arg Arg Glu Arg
195 200 205

Arg Arg Leu Met Ser Met Glu Met Asp
210 215

<210> 7
<211> 66
<212> PRT
<213> Homo sapiens

<400> 7
Ser Lys Pro Val Phe Ile Thr Val Lys Met Asp Val Leu Asn Ala Phe
1 5 10 15

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

Leu Ser Cys Leu Ile Gly Tyr Cys Ser Ser His Trp Cys Cys Lys Lys
35 40 45

Glu Val Gln Glu Thr Arg Arg Glu Arg Arg Arg Leu Met Ser Met Glu
50 55 60

Met Asp
65

<210> 8
<211> 21
<212> PRT
<213> Homo sapiens

<400> 8
Met Gly Arg Leu Ala Ser Arg Pro Leu Leu Leu Ala Leu Leu Ser Leu

1 5 10 15

Ala Leu Cys Arg Gly
20

<210> 9
<211> 385
<212> PRT
<213> Homo sapiens

<400> 9
Met Ala Ala Ala Leu Phe Val Leu Leu Gly Phe Ala Leu Leu Gly Thr
1 5 10 15

His Gly Ala Ser Gly Ala Ala Gly Phe Val Gln Ala Pro Leu Ser Gln
20 25 30

Gln Arg Trp Val Gly Gly Ser Val Glu Leu His Cys Glu Ala Val Gly
35 40 45

Ser Pro Val Pro Glu Ile Gln Trp Trp Phe Glu Gly Gln Gly Pro Asn
50 55 60

Asp Thr Cys Ser Gln Leu Trp Asp Gly Ala Arg Leu Asp Arg Val His
65 70 75 80

Ile His Ala Thr Tyr His Gln His Ala Ala Ser Thr Ile Ser Ile Asp
85 90 95

Thr Leu Val Glu Glu Asp Thr Gly Thr Tyr Glu Cys Arg Ala Ser Asn
100 105 110

Asp Pro Asp Arg Asn His Leu Thr Arg Ala Pro Arg Val Lys Trp Val
115 120 125

Arg Ala Gln Ala Val Val Leu Val Leu Glu Pro Gly Thr Val Phe Thr
130 135 140

Thr Val Glu Asp Leu Gly Ser Lys Ile Leu Leu Thr Cys Ser Leu Asn
145 150 155 160

Asp Ser Ala Thr Glu Val Thr Gly His Arg Trp Leu Lys Gly Gly Val

165

170

175

Val Leu Lys Glu Asp Ala Leu Pro Gly Gln Lys Thr Glu Phe Lys Val
 180 185 190

Asp Ser Asp Asp Gln Trp Gly Glu Tyr Ser Cys Val Phe Leu Pro Glu
 195 200 205

Pro Met Gly Thr Ala Asn Ile Gln Leu His Gly Pro Pro Arg Val Lys
 210 215 220

Ala Val Lys Ser Ser Glu His Ile Asn Glu Gly Glu Thr Ala Met Leu
 225 230 235 240

Val Cys Lys Ser Glu Ser Val Pro Pro Val Thr Asp Trp Ala Trp Tyr
 245 250 255

Lys Ile Thr Asp Ser Glu Asp Lys Ala Leu Met Asn Gly Ser Glu Ser
 260 265 270

Arg Phe Phe Val Ser Ser Ser Gln Gly Arg Ser Glu Leu His Ile Glu
 275 280 285

Asn Leu Asn Met Glu Ala Asp Pro Gly Gln Tyr Arg Cys Asn Gly Thr
 290 295 300

Ser Ser Lys Gly Ser Asp Gln Ala Ile Ile Thr Leu Arg Val Arg Ser
 305 310 315 320

His Leu Ala Ala Leu Trp Pro Phe Leu Gly Ile Val Ala Glu Val Leu
 325 330 335

Val Leu Val Thr Ile Ile Phe Ile Tyr Glu Lys Arg Arg Lys Pro Glu
 340 345 350

Asp Val Leu Asp Asp Asp Asp Ala Gly Ser Ala Pro Leu Lys Ser Ser
 355 360 365

Gly Gln His Gln Asn Asp Lys Gly Lys Asn Val Arg Gln Arg Asn Ser
 370 375 380

Ser
385

<210> 10
<211> 247
<212> PRT
<213> Homo sapiens

<400> 10
Pro Gly Thr Val Phe Thr Thr Val Glu Asp Leu Gly Ser Lys Ile Leu
1 5 10 15

Leu Thr Cys Ser Leu Asn Asp Ser Ala Thr Glu Val Thr Gly His Arg
20 25 30

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

Lys Thr Glu Phe Lys Val Asp Ser Asp Asp Gln Trp Gly Glu Tyr Ser
50 55 60

Cys Val Phe Leu Pro Glu Pro Met Gly Thr Ala Asn Ile Gln Leu His
65 70 75 80

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

Gly Glu Thr Ala Met Leu Val Cys Lys Ser Glu Ser Val Pro Pro Val
100 105 110

Thr Asp Trp Ala Trp Tyr Lys Ile Thr Asp Ser Glu Asp Lys Ala Leu
115 120 125

Met Asn Gly Ser Glu Ser Arg Phe Phe Val Ser Ser Ser Gln Gly Arg
130 135 140

Ser Glu Leu His Ile Glu Asn Leu Asn Met Glu Ala Asp Pro Gly Gln
145 150 155 160

Tyr Arg Cys Asn Gly Thr Ser Ser Lys Gly Ser Asp Gln Ala Ile Ile
165 170 175

Thr Leu Arg Val Arg Ser His Leu Ala Ala Leu Trp Pro Phe Leu Gly
180 185 190

Ile Val Ala Glu Val Leu Val Leu Val Thr Ile Ile Phe Ile Tyr Glu
195 200 205

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

Ala Pro Leu Lys Ser Ser Gly Gln His Gln Asn Asp Lys Gly Lys Asn
225 230 235 240

Val Arg Gln Arg Asn Ser Ser
245

<210> 11
<211> 168
<212> PRT
<213> Homo sapiens

<400> 11
His Gly Pro Pro Arg Val Lys Ala Val Lys Ser Ser Glu His Ile Asn
1 5 10 15

Glu Gly Glu Thr Ala Met Leu Val Cys Lys Ser Glu Ser Val Pro Pro
20 25 30

Val Thr Asp Trp Ala Trp Tyr Lys Ile Thr Asp Ser Glu Asp Lys Ala
35 40 45

Leu Met Asn Gly Ser Glu Ser Arg Phe Phe Val Ser Ser Ser Gln Gly
50 55 60

Arg Ser Glu Leu His Ile Glu Asn Leu Asn Met Glu Ala Asp Pro Gly
65 70 75 80

Gln Tyr Arg Cys Asn Gly Thr Ser Ser Lys Gly Ser Asp Gln Ala Ile
85 90 95

Ile Thr Leu Arg Val Arg Ser His Leu Ala Ala Leu Trp Pro Phe Leu
100 105 110

Gly Ile Val Ala Glu Val Leu Val Leu Val Thr Ile Ile Phe Ile Tyr
115 120 125

Glu Lys Arg Arg Lys Pro Glu Asp Val Leu Asp Asp Asp Ala Gly
130 135 140

Ser Ala Pro Leu Lys Ser Ser Gly Gln His Gln Asn Asp Lys Gly Lys
145 150 155 160

Asn Val Arg Gln Arg Asn Ser Ser
165

<210> 12
<211> 66
<212> PRT
<213> Homo sapiens

<400> 12
Ser His Leu Ala Ala Leu Trp Pro Phe Leu Gly Ile Val Ala Glu Val
1 5 10 15

Leu Val Leu Val Thr Ile Ile Phe Ile Tyr Glu Lys Arg Arg Lys Pro
20 25 30

Glu Asp Val Leu Asp Asp Asp Asp Ala Gly Ser Ala Pro Leu Lys Ser
35 40 45

Ser Gly Gln His Gln Asn Asp Lys Gly Lys Asn Val Arg Gln Arg Asn
50 55 60

Ser Ser
65

<210> 13
<211> 18
<212> PRT
<213> Homo sapiens

<400> 13
Met Ala Ala Ala Leu Phe Val Leu Leu Gly Phe Ala Leu Leu Gly Thr
1 5 10 15

His Gly

<210> 14
<211> 613
<212> PRT
<213> Homo sapiens

<400> 14
Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu
1 5 10 15

Leu Leu Leu Met Leu Gly Met Gly Cys Trp Ala Arg Glu Val Leu Val
20 25 30

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

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

Phe Leu Tyr Arg Pro Glu Ala Pro Asp Thr Ala Leu Gly Ile Val Ser
65 70 75 80

Thr Lys Asp Thr Gln Phe Ser Tyr Ala Val Phe Lys Ser Arg Val Val
85 90 95

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

Lys Ile Ala Arg Leu Gln Ala Gln Asp Ala Gly Ile Tyr Glu Cys His
115 120 125

Thr Pro Ser Thr Asp Thr Arg Tyr Leu Gly Ser Tyr Ser Gly Lys Val
130 135 140

Glu Leu Arg Val Leu Pro Asp Val Leu Gln Val Ser Ala Ala Pro Pro
145 150 155 160

Gly Pro Arg Gly Arg Gln Ala Pro Thr Ser Pro Pro Arg Met Thr Val
165 170 175

His Glu Gly Gln Glu Leu Ala Leu Gly Cys Leu Ala Arg Thr Ser Thr

180

185

190

Gln Lys His Thr His Leu Ala Val Ser Phe Gly Arg Ser Val Pro Glu
 195 200 205

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

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

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

Val Gly Gly Ala Gln Ala Gly Asp Ala Gly Thr Tyr His Cys Thr Ala
 260 265 270

Ala Glu Trp Ile Gln Asp Pro Asp Gly Ser Trp Ala Gln Ile Ala Glu
 275 280 285

Lys Arg Ala Val Leu Ala His Val Asp Val Gln Thr Leu Ser Ser Gln
 290 295 300

Leu Ala Val Thr Val Gly Pro Gly Glu Arg Arg Ile Gly Pro Gly Glu
 305 310 315 320

Pro Leu Glu Leu Leu Cys Asn Val Ser Gly Ala Leu Pro Pro Ala Gly
 325 330 335

Arg His Ala Ala Tyr Ser Val Gly Trp Glu Met Ala Pro Ala Gly Ala
 340 345 350

Pro Gly Pro Gly Arg Leu Val Ala Gln Leu Asp Thr Glu Gly Val Gly
 355 360 365

Ser Leu Gly Pro Gly Tyr Glu Gly Arg His Ile Ala Met Glu Lys Val
 370 375 380

Ala Ser Arg Thr Tyr Arg Leu Arg Leu Glu Ala Ala Arg Pro Gly Asp
 385 390 395 400

Ala Gly Thr Tyr Arg Cys Leu Ala Lys Ala Tyr Val Arg Gly Ser Gly
405 410 415

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

His Val Arg Glu Glu Gly Val Val Leu Glu Ala Val Ala Trp Leu Ala
435 440 445

Gly Gly Thr Val Tyr Arg Gly Glu Thr Ala Ser Leu Leu Cys Asn Ile
450 455 460

Ser Val Arg Gly Gly Pro Pro Gly Leu Arg Leu Ala Ala Ser Trp Trp
465 470 475 480

Val Glu Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu
485 490 495

Val Gly Gly Val Gly Gln Asp Gly Val Ala Glu Leu Gly Val Arg Pro
500 505 510

Gly Gly Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg Ser His Arg
515 520 525

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

Ala Pro Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala
545 550 555 560

Gly Ser Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala
565 570 575

Leu Asp Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu
580 585 590

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

Arg Leu Arg Lys Arg

610

<210> 15

<211> 456

<212> PRT

<213> Homo sapiens

<400> 15

Ala Pro Pro Gly Pro Arg Gly Arg Gln Ala Pro Thr Ser Pro Pro Arg
1 5 10 15

Met Thr Val His Glu Gly Gln Glu Leu Ala Leu Gly Cys Leu Ala Arg
20 25 30

Thr Ser Thr Gln Lys His Thr His Leu Ala Val Ser Phe Gly Arg Ser
35 40 45

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

Ile Arg Ser Asp Leu Ala Val Glu Ala Gly Ala Pro Tyr Ala Glu Arg
65 70 75 80

Leu Ala Ala Gly Glu Leu Arg Leu Gly Lys Glu Gly Thr Asp Arg Tyr
85 90 95

Arg Met Val Val Gly Gly Ala Gln Ala Gly Asp Ala Gly Thr Tyr His
100 105 110

Cys Thr Ala Ala Glu Trp Ile Gln Asp Pro Asp Gly Ser Trp Ala Gln
115 120 125

Ile Ala Glu Lys Arg Ala Val Leu Ala His Val Asp Val Gln Thr Leu
130 135 140

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

Pro Gly Glu Pro Leu Glu Leu Leu Cys Asn Val Ser Gly Ala Leu Pro
165 170 175

Pro Ala Gly Arg His Ala Ala Tyr Ser Val Gly Trp Glu Met Ala Pro

180

185

190

Ala Gly Ala Pro Gly Pro Gly Arg Leu Val Ala Gln Leu Asp Thr Glu
 195 200 205

Gly Val Gly Ser Leu Gly Pro Gly Tyr Glu Gly Arg His Ile Ala Met
 210 215 220

Glu Lys Val Ala Ser Arg Thr Tyr Arg Leu Arg Leu Glu Ala Ala Arg
 225 230 235 240

Pro Gly Asp Ala Gly Thr Tyr Arg Cys Leu Ala Lys Ala Tyr Val Arg
 245 250 255

Gly Ser Gly Thr Arg Leu Arg Glu Ala Ala Ser Ala Arg Ser Arg Pro
 260 265 270

Leu Pro Val His Val Arg Glu Glu Gly Val Val Leu Glu Ala Val Ala
 275 280 285

Trp Leu Ala Gly Gly Thr Val Tyr Arg Gly Glu Thr Ala Ser Leu Leu
 290 295 300

Cys Asn Ile Ser Val Arg Gly Gly Pro Pro Gly Leu Arg Leu Ala Ala
 305 310 315 320

Ser Trp Trp Val Glu Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro
 325 330 335

Ala Gln Leu Val Gly Gly Val Gly Gln Asp Gly Val Ala Glu Leu Gly
 340 345 350

Val Arg Pro Gly Gly Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg
 355 360 365

Ser His Arg Leu Arg Leu His Ser Leu Gly Pro Glu Asp Glu Gly Val
 370 375 380

Tyr His Cys Ala Pro Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp
 385 390 395 400

Tyr Gln Ala Gly Ser Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr
405 410 415

Met His Ala Leu Asp Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly
420 425 430

Val Ala Leu Val Thr Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys
435 440 445

Phe Met Lys Arg Leu Arg Lys Arg
450 455

<210> 16
<211> 320
<212> PRT
<213> Homo sapiens

<400> 16
Ala His Val Asp Val Gln Thr Leu Ser Ser Gln Leu Ala Val Thr Val
1 5 10 15

Gly Pro Gly Glu Arg Arg Ile Gly Pro Gly Glu Pro Leu Glu Leu Leu
20 25 30

Cys Asn Val Ser Gly Ala Leu Pro Pro Ala Gly Arg His Ala Ala Tyr
35 40 45

Ser Val Gly Trp Glu Met Ala Pro Ala Gly Ala Pro Gly Pro Gly Arg
50 55 60

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

Tyr Glu Gly Arg His Ile Ala Met Glu Lys Val Ala Ser Arg Thr Tyr
85 90 95

Arg Leu Arg Leu Glu Ala Ala Arg Pro Gly Asp Ala Gly Thr Tyr Arg
100 105 110

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

Ala Ala Ser Ala Arg Ser Arg Pro Leu Pro Val His Val Arg Glu Glu
130 135 140

Gly Val Val Leu Glu Ala Val Ala Trp Leu Ala Gly Gly Thr Val Tyr
145 150 155 160

Arg Gly Glu Thr Ala Ser Leu Leu Cys Asn Ile Ser Val Arg Gly Gly
165 170 175

Pro Pro Gly Leu Arg Leu Ala Ala Ser Trp Trp Val Glu Arg Pro Glu
180 185 190

Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu Val Gly Gly Val Gly
195 200 205

Gln Asp Gly Val Ala Glu Leu Gly Val Arg Pro Gly Gly Gly Pro Val
210 215 220

Ser Val Glu Leu Val Gly Pro Arg Ser His Arg Leu Arg Leu His Ser
225 230 235 240

Leu Gly Pro Glu Asp Glu Gly Val Tyr His Cys Ala Pro Ser Ala Trp
245 250 255

Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala Gly Ser Ala Arg Ser
260 265 270

Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala Leu Asp Thr Leu Phe
275 280 285

Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu Val Thr Gly Ala Thr
290 295 300

Val Leu Gly Thr Ile Thr Cys Cys Phe Met Lys Arg Leu Arg Lys Arg
305 310 315 320

<210> 17

<211> 179

<212> PRT

<213> Homo sapiens

<400> 17

Arg Glu Glu Gly Val Val Leu Glu Ala Val Ala Trp Leu Ala Gly Gly
1 5 10 15

Thr Val Tyr Arg Gly Glu Thr Ala Ser Leu Leu Cys Asn Ile Ser Val
20 25 30

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

Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu Val Gly
50 55 60

Gly Val Gly Gln Asp Gly Val Ala Glu Leu Gly Val Arg Pro Gly Gly
65 70 75 80

Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg Ser His Arg Leu Arg
85 90 95

Leu His Ser Leu Gly Pro Glu Asp Glu Gly Val Tyr His Cys Ala Pro
100 105 110

Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala Gly Ser
115 120 125

Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala Leu Asp
130 135 140

Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu Val Thr
145 150 155 160

Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys Phe Met Lys Arg Leu
165 170 175

Arg Lys Arg

<210> 18

<211> 24

<212> PRT

<213> Homo sapiens

<400> 18

Val Ala Leu Val Thr Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys
1 5 10 15

Phe Met Lys Arg Leu Arg Lys Arg
20

<210> 19

<211> 27

<212> PRT

<213> Homo sapiens

<400> 19

Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu
1 5 10 15

Leu Leu Leu Met Leu Gly Met Gly Cys Trp Ala
20 25

<210> 20

<211> 1195

<212> PRT

<213> Homo sapiens

<400> 20

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

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

Thr Glu Gly Ser His Ile Thr Ile Trp Cys Asn Val Ser Gly Tyr Gln
35 40 45

Gly Pro Ser Glu Gln Asn Phe Gln Trp Ser Ile Tyr Leu Pro Ser Ser
50 55 60

Pro Glu Arg Glu Val Gln Ile Val Ser Thr Met Asp Ser Ser Phe Pro
65 70 75 80

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

Arg Val Gln Gly Asn Ser Thr Leu Leu His Ile Thr Asp Leu Gln Ala

100

105

110

Arg Asp Ala Gly Glu Tyr Glu Cys His Thr Pro Ser Thr Asp Lys Gln
 115 120 125

Tyr Phe Gly Ser Tyr Ser Ala Lys Met Asn Leu Val Val Ile Pro Asp
 130 135 140

Ser Leu Gln Thr Thr Ala Met Pro Gln Thr Leu His Arg Val Glu Gln
 145 150 155 160

Asp Pro Leu Glu Leu Thr Cys Glu Val Ala Ser Glu Thr Ile Gln His
 165 170 175

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

Val Glu Val Ile Ser Leu Ser Arg Asp Phe Met Leu His Ser Ser Ser
 195 200 205

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

Gly Arg Thr Thr Phe Arg Leu Thr Ile Phe His Leu Gln Pro Ser Asp
 225 230 235 240

Gln Gly Glu Phe Tyr Cys Glu Ala Ala Glu Trp Ile Gln Asp Pro Asp
 245 250 255

Gly Ser Trp Tyr Ala Met Thr Arg Lys Arg Ser Glu Gly Ala Val Val
 260 265 270

Asn Val Gln Pro Thr Asp Lys Glu Phe Thr Val Arg Leu Glu Thr Glu
 275 280 285

Lys Arg Leu His Thr Val Gly Glu Pro Val Glu Phe Arg Cys Ile Leu
 290 295 300

Glu Ala Gln Asn Val Pro Asp Arg Tyr Phe Ala Val Ser Trp Ala Phe
 305 310 315 320

Asn Ser Ser Leu Ile Ala Thr Met Gly Pro Asn Ala Val Pro Val Leu
325 330 335

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

Lys Glu Ser Asp Ser Val Phe Val Leu Lys Ile Tyr His Leu Arg Gln
355 360 365

Glu Asp Ser Gly Lys Tyr Asn Cys Arg Val Thr Glu Arg Glu Lys Thr
370 375 380

Val Thr Gly Glu Phe Ile Asp Lys Glu Ser Lys Arg Pro Lys Asn Ile
385 390 395 400

Pro Ile Ile Val Leu Pro Leu Lys Ser Ser Ile Ser Val Glu Val Ala
405 410 415

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

Ser Val Arg Thr Ala Gly Arg Pro Gln Gly Arg Phe Ser Val Ile Trp
435 440 445

Gln Leu Val Asp Arg Gln Asn Arg Arg Ser Asn Ile Met Trp Leu Asp
450 455 460

Arg Asp Gly Thr Val Gln Pro Gly Ser Ser Tyr Trp Glu Arg Ser Ser
465 470 475 480

Phe Gly Gly Val Gln Met Glu Gln Val Gln Pro Asn Ser Phe Ser Leu
485 490 495

Gly Ile Phe Asn Ser Arg Lys Glu Asp Glu Gly Gln Tyr Glu Cys His
500 505 510

Val Thr Glu Trp Val Arg Ala Val Asp Gly Glu Trp Gln Ile Val Gly
515 520 525

Glu Arg Arg Ala Ser Thr Pro Ile Ser Ile Thr Ala Leu Glu Met Gly

530

535

540

Phe Ala Val Thr Ala Ile Ser Arg Thr Pro Gly Val Thr Tyr Ser Asp
 545 550 555 560

Ser Phe Asp Leu Gln Cys Ile Ile Lys Pro His Tyr Pro Ala Trp Val
 565 570 575

Pro Val Ser Val Thr Trp Arg Phe Gln Pro Val Gly Thr Val Glu Phe
 580 585 590

His Asp Leu Val Thr Phe Thr Arg Asp Gly Gly Val Gln Trp Gly Asp
 595 600 605

Arg Ser Ser Ser Phe Arg Thr Arg Thr Ala Ile Glu Lys Ala Glu Ser
 610 615 620

Ser Asn Asn Val Arg Leu Ser Ile Ser Arg Ala Ser Asp Thr Glu Ala
 625 630 635 640

Gly Lys Tyr Gln Cys Val Ala Glu Leu Trp Arg Lys Asn Tyr Asn Asn
 645 650 655

Thr Trp Thr Arg Leu Ala Glu Arg Thr Ser Asn Leu Leu Glu Ile Arg
 660 665 670

Val Leu Gln Pro Val Thr Lys Leu Gln Val Ser Lys Ser Lys Arg Thr
 675 680 685

Leu Thr Leu Val Glu Asn Lys Pro Ile Gln Leu Asn Cys Ser Val Lys
 690 695 700

Ser Gln Thr Ser Gln Asn Ser His Phe Ala Val Leu Trp Tyr Val His
 705 710 715 720

Lys Pro Ser Asp Ala Asp Gly Lys Leu Ile Leu Lys Thr Thr His Asn
 725 730 735

Ser Ala Phe Glu Tyr Gly Thr Tyr Ala Glu Glu Glu Gly Leu Arg Ala
 740 745 750

Arg Leu Gln Phe Glu Arg His Val Ser Gly Gly Leu Phe Ser Leu Thr
755 760 765

Val Gln Arg Ala Glu Val Ser Asp Ser Gly Ser Tyr Tyr Cys His Val
770 775 780

Glu Glu Trp Leu Leu Ser Pro Asn Tyr Ala Trp Tyr Lys Leu Ala Glu
785 790 795 800

Glu Val Ser Gly Arg Thr Glu Val Thr Val Lys Gln Pro Asp Ser Arg
805 810 815

Leu Arg Leu Ser Gln Ala Gln Gly Asn Leu Ser Val Leu Glu Thr Arg
820 825 830

Gln Val Gln Leu Glu Cys Val Val Leu Asn Arg Thr Ser Ile Thr Ser
835 840 845

Gln Leu Met Val Glu Trp Phe Val Trp Lys Pro Asn His Pro Glu Arg
850 855 860

Glu Thr Val Ala Arg Leu Ser Arg Asp Ala Thr Phe His Tyr Gly Glu
865 870 875 880

Gln Ala Ala Lys Asn Asn Leu Lys Gly Arg Leu His Leu Glu Ser Pro
885 890 895

Ser Pro Gly Val Tyr Arg Leu Phe Ile Gln Asn Val Ala Val Gln Asp
900 905 910

Ser Gly Thr Tyr Ser Cys His Val Glu Glu Trp Leu Pro Ser Pro Ser
915 920 925

Gly Met Trp Tyr Lys Arg Ala Glu Asp Thr Ala Gly Gln Thr Ala Leu
930 935 940

Thr Val Met Arg Pro Asp Ala Ser Leu Gln Val Asp Thr Val Val Pro
945 950 955 960

Asn Ala Thr Val Ser Glu Lys Ala Ala Phe Gln Leu Asp Cys Ser Ile

965

970

975

Val Ser Arg Ser Ser Gln Asp Ser Arg Phe Ala Val Ala Trp Tyr Ser
 980 985 990

Leu Arg Thr Lys Ala Gly Gly Lys Arg Ser Ser Pro Gly Leu Glu Glu
 995 1000 1005

Gln Glu Glu Glu Arg Glu Glu Glu Glu Glu Glu Glu Asp Asp
 1010 1015 1020

Asp Asp Asp Asp Pro Thr Glu Arg Thr Ala Leu Leu Ser Val Gly
 1025 1030 1035

Pro Asp Ala Val Phe Gly Pro Glu Gly Ser Pro Trp Glu Gly Arg
 1040 1045 1050

Leu Arg Phe Gln Arg Leu Ser Pro Val Leu Tyr Arg Leu Thr Val
 1055 1060 1065

Leu Gln Ala Ser Pro Gln Asp Thr Gly Asn Tyr Ser Cys His Val
 1070 1075 1080

Glu Glu Trp Leu Pro Ser Pro Gln Lys Glu Trp Tyr Arg Leu Thr
 1085 1090 1095

Glu Glu Glu Ser Ala Pro Ile Gly Ile Arg Val Leu Asp Thr Ser
 1100 1105 1110

Pro Thr Leu Gln Ser Ile Ile Cys Ser Asn Asp Ala Leu Phe Tyr
 1115 1120 1125

Phe Val Phe Phe Tyr Pro Phe Pro Ile Phe Gly Ile Leu Ile Ile
 1130 1135 1140

Thr Ile Leu Leu Val Arg Phe Lys Ser Arg Asn Ser Ser Lys Asn
 1145 1150 1155

Ser Asp Gly Lys Asn Gly Val Pro Leu Leu Trp Ile Lys Glu Pro
 1160 1165 1170

His Leu Asn Tyr Ser Pro Thr Cys Leu Glu Pro Pro Val Leu Ser
1175 1180 1185

Ile His Pro Gly Ala Ile Asp
1190 1195

<210> 21
<211> 798
<212> PRT
<213> Homo sapiens

<400> 21
Met Asn Leu Gln Pro Ile Phe Trp Ile Gly Leu Ile Ser Ser Val Cys
1 5 10 15

Cys Val Phe Ala Gln Thr Asp Glu Asn Arg Cys Leu Lys Ala Asn Ala
20 25 30

Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
35 40 45

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
50 55 60

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
65 70 75 80

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

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile Thr
100 105 110

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro
115 120 125

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

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
145 150 155 160

Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
165 170 175

Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
180 185 190

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

Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
210 215 220

Leu Thr Asn Lys Gly Glu Val Phe Asn Glu Leu Val Gly Lys Gln Arg
225 230 235 240

Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
245 250 255

Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
260 265 270

Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
275 280 285

Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
290 295 300

Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
305 310 315 320

His Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala
325 330 335

Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
340 345 350

Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
355 360 365

Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu

370

375

380

Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
 385 390 395 400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
 405 410 415

Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
 420 425 430

Asn Lys Cys Pro Lys Lys Asp Ser Asp Ser Phe Lys Ile Arg Pro Leu
 435 440 445

Gly Phe Thr Glu Glu Val Glu Val Ile Leu Gln Tyr Ile Cys Glu Cys
 450 455 460

Glu Cys Gln Ser Glu Gly Ile Pro Glu Ser Pro Lys Cys His Glu Gly
 465 470 475 480

Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val
 485 490 495

Gly Arg His Cys Glu Cys Ser Thr Asp Glu Val Asn Ser Glu Asp Met
 500 505 510

Asp Ala Tyr Cys Arg Lys Glu Asn Ser Ser Glu Ile Cys Ser Asn Asn
 515 520 525

Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr
 530 535 540

Asn Glu Ile Tyr Ser Gly Lys Phe Cys Glu Cys Asp Asn Phe Asn Cys
 545 550 555 560

Asp Arg Ser Asn Gly Leu Ile Cys Gly Gly Asn Gly Val Cys Lys Cys
 565 570 575

Arg Val Cys Glu Cys Asn Pro Asn Tyr Thr Gly Ser Ala Cys Asp Cys
 580 585 590

Ser Leu Asp Thr Ser Thr Cys Glu Ala Ser Asn Gly Gln Ile Cys Asn
595 600 605

Gly Arg Gly Ile Cys Glu Cys Gly Val Cys Lys Cys Thr Asp Pro Lys
610 615 620

Phe Gln Gly Gln Thr Cys Glu Met Cys Gln Thr Cys Leu Gly Val Cys
625 630 635 640

Ala Glu His Lys Glu Cys Val Gln Cys Arg Ala Phe Asn Lys Gly Glu
645 650 655

Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
660 665 670

Val Glu Ser Arg Asp Lys Leu Pro Gln Pro Val Gln Pro Asp Pro Val
675 680 685

Ser His Cys Lys Glu Lys Asp Val Asp Asp Cys Trp Phe Tyr Phe Thr
690 695 700

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
705 710 715 720

Pro Glu Cys Pro Thr Gly Pro Asp Ile Ile Pro Ile Val Ala Gly Val
725 730 735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
740 745 750

Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
755 760 765

Glu Lys Met Asn Ala Lys Trp Asp Thr Gly Glu Asn Pro Ile Tyr Lys
770 775 780

Ser Ala Val Thr Thr Val Val Asn Pro Lys Tyr Glu Gly Lys
785 790 795

<211> 1032
<212> PRT
<213> Homo sapiens

<400> 22

Met Ala Trp Glu Ala Arg Arg Glu Pro Gly Pro Arg Arg Ala Ala Val
1 5 10 15

Arg Glu Thr Val Met Leu Leu Leu Cys Leu Gly Val Pro Thr Gly Arg
20 25 30

Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His
35 40 45

Asn Thr Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn
50 55 60

Arg Trp Leu Leu Val Gly Ala Pro Thr Ala Asn Trp Leu Ala Asn Ala
65 70 75 80

Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn
85 90 95

Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu
100 105 110

Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly
115 120 125

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

Gly His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu
145 150 155 160

Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu
165 170 175

Ser Lys Arg Ile Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly
180 185 190

Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys

195

200

205

Asp Leu Ile Val Met Gly Ala Pro Gly Ser Ser Tyr Trp Thr Gly Ser
 210 215 220

Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys Ala Phe Leu Asp
 225 230 235 240

Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly Tyr Ser Val Gly
 245 250 255

Ala Gly His Phe Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala
 260 265 270

Pro Gln His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser Ile Asp Glu
 275 280 285

Lys Glu Leu Asn Ile Leu His Glu Met Lys Gly Lys Lys Leu Gly Ser
 290 295 300

Tyr Phe Gly Ala Ser Val Cys Ala Val Asp Leu Asn Ala Asp Gly Phe
 305 310 315 320

Ser Asp Leu Leu Val Gly Ala Pro Met Gln Ser Thr Ile Arg Glu Glu
 325 330 335

Gly Arg Val Phe Val Tyr Ile Asn Ser Gly Ser Gly Ala Val Met Asn
 340 345 350

Ala Met Glu Thr Asn Leu Val Gly Ser Asp Lys Tyr Ala Ala Arg Phe
 355 360 365

Gly Glu Ser Ile Val Asn Leu Gly Asp Ile Asp Asn Asp Gly Phe Glu
 370 375 380

Asp Val Ala Ile Gly Ala Pro Gln Glu Asp Asp Leu Gln Gly Ala Ile
 385 390 395 400

Tyr Ile Tyr Asn Gly Arg Ala Asp Gly Ile Ser Ser Thr Phe Ser Gln
 405 410 415

Arg Ile Glu Gly Leu Gln Ile Ser Lys Ser Leu Ser Met Phe Gly Gln
420 425 430

Ser Ile Ser Gly Gln Ile Asp Ala Asp Asn Asn Gly Tyr Val Asp Val
435 440 445

Ala Val Gly Ala Phe Arg Ser Asp Ser Ala Val Leu Leu Arg Thr Arg
450 455 460

Pro Val Val Ile Val Asp Ala Ser Leu Ser His Pro Glu Ser Val Asn
465 470 475 480

Arg Thr Lys Phe Asp Cys Val Glu Asn Gly Trp Pro Ser Val Cys Ile
485 490 495

Asp Leu Thr Leu Cys Phe Ser Tyr Lys Gly Lys Glu Val Pro Gly Tyr
500 505 510

Ile Val Leu Phe Tyr Asn Met Ser Leu Asp Val Asn Arg Lys Ala Glu
515 520 525

Ser Pro Pro Arg Phe Tyr Phe Ser Ser Asn Gly Thr Ser Asp Val Ile
530 535 540

Thr Gly Ser Ile Gln Val Ser Ser Arg Glu Ala Asn Cys Arg Thr His
545 550 555 560

Gln Ala Phe Met Arg Lys Asp Val Arg Asp Ile Leu Thr Pro Ile Gln
565 570 575

Ile Glu Ala Ala Tyr His Leu Gly Pro His Val Ile Ser Lys Arg Ser
580 585 590

Thr Glu Glu Phe Pro Pro Leu Gln Pro Ile Leu Gln Gln Lys Lys Glu
595 600 605

Lys Asp Ile Met Lys Lys Thr Ile Asn Phe Ala Arg Phe Cys Ala His
610 615 620

Glu Asn Cys Ser Ala Asp Leu Gln Val Ser Ala Lys Ile Gly Phe Leu

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

Thr Gly Glu Cys His Phe Glu Asn Tyr Gln Arg Val Cys Ala Leu Glu
850 855 860

Gln Gln Lys Ser Ala Met Gln Thr Leu Lys Gly Ile Val Arg Phe Leu
865 870 875 880

Ser Lys Thr Asp Lys Arg Leu Leu Tyr Cys Ile Lys Ala Asp Pro His
885 890 895

Cys Leu Asn Phe Leu Cys Asn Phe Gly Lys Met Glu Ser Gly Lys Glu
900 905 910

Ala Ser Val His Ile Gln Leu Glu Gly Arg Pro Ser Ile Leu Glu Met
915 920 925

Asp Glu Thr Ser Ala Leu Lys Phe Glu Ile Arg Ala Thr Gly Phe Pro
930 935 940

Glu Pro Asn Pro Arg Val Ile Glu Leu Asn Lys Asp Glu Asn Val Ala
945 950 955 960

His Val Leu Leu Glu Gly Leu His His Gln Arg Pro Lys Arg Tyr Phe
965 970 975

Thr Ile Val Ile Ile Ser Ser Ser Leu Leu Leu Gly Leu Ile Val Leu
980 985 990

Leu Leu Ile Ser Tyr Val Met Trp Lys Ala Gly Phe Phe Lys Arg Gln
995 1000 1005

Tyr Lys Ser Ile Leu Gln Glu Glu Asn Arg Arg Asp Ser Trp Ser
1010 1015 1020

Tyr Ile Asn Ser Lys Ser Asn Asp Asp
1025 1030

<210> 23

<211> 661

<212> PRT

<213> Homo sapiens

<400> 23

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

Arg Gln Leu Pro Gly Ser His Ser Glu Ala Gly Val Gln Gly Leu Ser
20 25 30

Ala Gly Asp Asp Ser Glu Leu Gly Ser His Cys Val Ala Gln Thr Gly
35 40 45

Leu Glu Leu Leu Ala Ser Gly Asp Pro Leu Pro Ser Ala Ser Gln Asn
50 55 60

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

Gln Leu Leu Ala Ser Ser Asp Pro Pro Ala Leu Ala Ser Lys Asn Ala
85 90 95

Glu Val Thr Glu Thr Gly Phe His His Val Ser Gln Ala Asp Ile Glu
100 105 110

Phe Leu Thr Ser Ile Asp Pro Thr Ala Ser Ala Ser Gly Ser Ala Gly
115 120 125

Ile Thr Gly Thr Met Ser Gln Asp Thr Glu Val Asp Met Lys Glu Val
130 135 140

Glu Leu Asn Glu Leu Glu Pro Glu Lys Gln Pro Met Asn Ala Ala Ser
145 150 155 160

Gly Ala Ala Met Ser Leu Ala Gly Ala Glu Lys Asn Gly Leu Val Lys
165 170 175

Ile Lys Val Ala Glu Asp Glu Ala Glu Ala Ala Ala Ala Lys Phe
180 185 190

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

Trp Val Arg Thr Arg Trp Ala Leu Leu Leu Leu Phe Trp Leu Gly Trp

210

215

220

Leu Gly Met Leu Ala Gly Ala Val Val Ile Ile Val Arg Ala Pro Arg
 225 230 235 240

Cys Arg Glu Leu Pro Ala Gln Lys Trp Trp His Thr Gly Ala Leu Tyr
 245 250 255

Arg Ile Gly Asp Leu Gln Ala Phe Gln Gly His Gly Ala Gly Asn Leu
 260 265 270

Ala Gly Leu Lys Gly Arg Leu Asp Tyr Leu Ser Ser Leu Lys Val Lys
 275 280 285

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

Gln Thr Asp Leu Leu Gln Ile Asp Pro Asn Phe Gly Ser Lys Glu Asp
 305 310 315 320

Phe Asp Ser Leu Leu Gln Ser Ala Lys Lys Lys Ser Ile Arg Val Ile
 325 330 335

Leu Asp Leu Thr Pro Asn Tyr Arg Gly Glu Asn Ser Trp Phe Ser Thr
 340 345 350

Gln Val Asp Thr Val Ala Thr Lys Val Lys Asp Ala Leu Glu Phe Trp
 355 360 365

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

Lys Asp Ala Ser Ser Phe Leu Ala Glu Trp Gln Asn Ile Thr Lys Gly
 385 390 395 400

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

Gln Gln Ile Leu Ser Leu Leu Glu Ser Asn Lys Asp Leu Leu Leu Thr
 420 425 430

Ser Ser Tyr Leu Ser Asp Ser Gly Ser Thr Gly Glu His Thr Lys Ser
435 440 445

Leu Val Thr Gln Tyr Leu Asn Ala Thr Gly Asn Arg Trp Cys Ser Trp
450 455 460

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

Leu Arg Leu Tyr Gln Leu Met Leu Phe Thr Leu Pro Gly Thr Pro Val
485 490 495

Phe Ser Tyr Gly Asp Glu Ile Gly Leu Asp Ala Ala Ala Leu Pro Gly
500 505 510

Gln Pro Met Glu Ala Pro Val Met Leu Trp Asp Glu Ser Ser Phe Pro
515 520 525

Asp Ile Pro Gly Ala Val Ser Ala Asn Met Thr Val Lys Gly Gln Ser
530 535 540

Glu Asp Pro Gly Ser Leu Leu Ser Leu Phe Arg Arg Leu Ser Asp Gln
545 550 555 560

Arg Ser Lys Glu Arg Ser Leu Leu His Gly Asp Phe His Ala Phe Ser
565 570 575

Ala Gly Pro Gly Leu Phe Ser Tyr Ile Arg His Trp Asp Gln Asn Glu
580 585 590

Arg Phe Leu Val Val Leu Asn Phe Gly Asp Val Gly Leu Ser Ala Gly
595 600 605

Leu Gln Ala Ser Asp Leu Pro Ala Ser Ala Ser Leu Pro Ala Lys Ala
610 615 620

Asp Leu Leu Leu Ser Thr Gln Pro Gly Arg Glu Glu Gly Ser Pro Leu
625 630 635 640

Glu Leu Glu Arg Leu Lys Leu Glu Pro His Glu Gly Leu Leu Leu Arg

645

650

655

Phe Pro Tyr Ala Ala
660

<210> 24

<211> 1023

<212> PRT

<213> Homo sapiens

<400> 24

Met Gly Lys Gly Val Gly Arg Asp Lys Tyr Glu Pro Ala Ala Val Ser
1 5 10 15

Glu Gln Gly Asp Lys Lys Gly Lys Lys Gly Lys Lys Asp Arg Asp Met
20 25 30

Asp Glu Leu Lys Lys Glu Val Ser Met Asp Asp His Lys Leu Ser Leu
35 40 45

Asp Glu Leu His Arg Lys Tyr Gly Thr Asp Leu Ser Arg Gly Leu Thr
50 55 60

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

Thr Pro Pro Pro Thr Thr Pro Glu Trp Ile Lys Phe Cys Arg Gln Leu
85 90 95

Phe Gly Gly Phe Ser Met Leu Leu Trp Ile Gly Ala Ile Leu Cys Phe
100 105 110

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

Asn Leu Tyr Leu Gly Val Val Leu Ser Ala Val Val Ile Ile Thr Gly
130 135 140

Cys Phe Ser Tyr Tyr Gln Glu Ala Lys Ser Ser Lys Ile Met Glu Ser
145 150 155 160

Phe Lys Asn Met Val Pro Gln Gln Ala Leu Val Ile Arg Asn Gly Glu

165

170

175

Lys Met Ser Ile Asn Ala Glu Glu Val Val Val Gly Asp Leu Val Glu
 180 185 190

Val Lys Gly Gly Asp Arg Ile Pro Ala Asp Leu Arg Ile Ile Ser Ala
 195 200 205

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

Gln Thr Arg Ser Pro Asp Phe Thr Asn Glu Asn Pro Leu Glu Thr Arg
 225 230 235 240

Asn Ile Ala Phe Phe Ser Thr Asn Cys Val Glu Gly Thr Ala Arg Gly
 245 250 255

Ile Val Val Tyr Thr Gly Asp Arg Thr Val Met Gly Arg Ile Ala Thr
 260 265 270

Leu Ala Ser Gly Leu Glu Gly Gly Gln Thr Pro Ile Ala Ala Glu Ile
 275 280 285

Glu His Phe Ile His Ile Ile Thr Gly Val Ala Val Phe Leu Gly Val
 290 295 300

Ser Phe Phe Ile Leu Ser Leu Ile Leu Glu Tyr Thr Trp Leu Glu Ala
 305 310 315 320

Val Ile Phe Leu Ile Gly Ile Ile Val Ala Asn Val Pro Glu Gly Leu
 325 330 335

Leu Ala Thr Val Thr Val Cys Leu Thr Leu Thr Ala Lys Arg Met Ala
 340 345 350

Arg Lys Asn Cys Leu Val Lys Asn Leu Glu Ala Val Glu Thr Leu Gly
 355 360 365

Ser Thr Ser Thr Ile Cys Ser Asp Lys Thr Gly Thr Leu Thr Gln Asn
 370 375 380

Arg Met Thr Val Ala His Met Trp Phe Asp Asn Gln Ile His Glu Ala
385 390 395 400

Asp Thr Thr Glu Asn Gln Ser Gly Val Ser Phe Asp Lys Thr Ser Ala
405 410 415

Thr Trp Leu Ala Leu Ser Arg Ile Ala Gly Leu Cys Asn Arg Ala Val
420 425 430

Phe Gln Ala Asn Gln Glu Asn Leu Pro Ile Leu Lys Arg Ala Val Ala
435 440 445

Gly Asp Ala Ser Glu Ser Ala Leu Leu Lys Cys Ile Glu Leu Cys Cys
450 455 460

Gly Ser Val Lys Glu Met Arg Glu Arg Tyr Ala Lys Ile Val Glu Ile
465 470 475 480

Pro Phe Asn Ser Thr Asn Lys Tyr Gln Leu Ser Ile His Lys Asn Pro
485 490 495

Asn Thr Ser Glu Pro Gln His Leu Leu Val Met Lys Gly Ala Pro Glu
500 505 510

Arg Ile Leu Asp Arg Cys Ser Ser Ile Leu Leu His Gly Lys Glu Gln
515 520 525

Pro Leu Asp Glu Glu Leu Lys Asp Ala Phe Gln Asn Ala Tyr Leu Glu
530 535 540

Leu Gly Gly Leu Gly Glu Arg Val Leu Gly Phe Cys His Leu Phe Leu
545 550 555 560

Pro Asp Glu Gln Phe Pro Glu Gly Phe Gln Phe Asp Thr Asp Asp Val
565 570 575

Asn Phe Pro Ile Asp Asn Leu Cys Phe Val Gly Leu Ile Ser Met Ile
580 585 590

Asp Pro Pro Arg Ala Ala Val Pro Asp Ala Val Gly Lys Cys Arg Ser

595

600

605

Ala Gly Ile Lys Val Ile Met Val Thr Gly Asp His Pro Ile Thr Ala
 610 615 620

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

Val Glu Asp Ile Ala Ala Arg Leu Asn Ile Pro Val Ser Gln Val Asn
 645 650 655

Pro Arg Asp Ala Lys Ala Cys Val Val His Gly Ser Asp Leu Lys Asp
 660 665 670

Met Thr Ser Glu Gln Leu Asp Asp Ile Leu Lys Tyr His Thr Glu Ile
 675 680 685

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

Cys Gln Arg Gln Gly Ala Ile Val Ala Val Thr Gly Asp Gly Val Asn
 705 710 715 720

Asp Ser Pro Ala Leu Lys Lys Ala Asp Ile Gly Val Ala Met Gly Ile
 725 730 735

Ala Gly Ser Asp Val Ser Lys Gln Ala Ala Asp Met Ile Leu Leu Asp
 740 745 750

Asp Asn Phe Ala Ser Ile Val Thr Gly Val Glu Glu Gly Arg Leu Ile
 755 760 765

Phe Asp Asn Leu Lys Lys Ser Ile Ala Tyr Thr Leu Thr Ser Asn Ile
 770 775 780

Pro Glu Ile Thr Pro Phe Leu Ile Phe Ile Ile Ala Asn Ile Pro Leu
 785 790 795 800

Pro Leu Gly Thr Val Thr Ile Leu Cys Ile Asp Leu Gly Thr Asp Met
 805 810 815

Val Pro Ala Ile Ser Leu Ala Tyr Glu Gln Ala Glu Ser Asp Ile Met
820 825 830

Lys Arg Gln Pro Arg Asn Pro Lys Thr Asp Lys Leu Val Asn Glu Arg
835 840 845

Leu Ile Ser Met Ala Tyr Gly Gln Ile Gly Met Ile Gln Ala Leu Gly
850 855 860

Gly Phe Phe Thr Tyr Phe Val Ile Leu Ala Glu Asn Gly Phe Leu Pro
865 870 875 880

Ile His Leu Leu Gly Leu Arg Val Asp Trp Asp Asp Arg Trp Ile Asn
885 890 895

Asp Val Glu Asp Ser Tyr Gly Gln Gln Trp Thr Tyr Glu Gln Arg Lys
900 905 910

Ile Val Glu Phe Thr Cys His Thr Ala Phe Phe Val Ser Ile Val Val
915 920 925

Val Gln Trp Ala Asp Leu Val Ile Cys Lys Thr Arg Arg Asn Ser Val
930 935 940

Phe Gln Gln Gly Met Lys Asn Lys Ile Leu Ile Phe Gly Leu Phe Glu
945 950 955 960

Glu Thr Ala Leu Ala Ala Phe Leu Ser Tyr Cys Pro Gly Met Gly Val
965 970 975

Ala Leu Arg Met Tyr Pro Leu Lys Pro Thr Trp Trp Phe Cys Ala Phe
980 985 990

Pro Tyr Ser Leu Leu Ile Phe Val Tyr Asp Glu Val Arg Lys Leu Ile
995 1000 1005

Ile Arg Arg Arg Pro Gly Gly Trp Val Glu Lys Glu Thr Tyr Tyr
1010 1015 1020

<210> 25

<211> 1020
<212> PRT
<213> Homo sapiens

<400> 25

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

Glu Asn Gly Gly Gly Lys Lys Lys Gln Lys Glu Lys Glu Leu Asp Glu
20 25 30

Leu Lys Lys Glu Val Ala Met Asp Asp His Lys Leu Ser Leu Asp Glu
35 40 45

Leu Gly Arg Lys Tyr Gln Val Asp Leu Ser Lys Gly Leu Thr Asn Gln
50 55 60

Arg Ala Gln Asp Val Leu Ala Arg Asp Gly Pro Asn Ala Leu Thr Pro
65 70 75 80

Pro Pro Thr Thr Pro Glu Trp Val Lys Phe Cys Arg Gln Leu Phe Gly
85 90 95

Gly Phe Ser Ile Leu Leu Trp Ile Gly Ala Ile Leu Cys Phe Leu Ala
100 105 110

Tyr Gly Ile Gln Ala Ala Met Glu Asp Glu Pro Ser Asn Asp Asn Leu
115 120 125

Tyr Leu Gly Val Val Leu Ala Ala Val Val Ile Val Thr Gly Cys Phe
130 135 140

Ser Tyr Tyr Gln Glu Ala Lys Ser Ser Lys Ile Met Asp Ser Phe Lys
145 150 155 160

Asn Met Val Pro Gln Gln Ala Leu Val Ile Arg Glu Gly Glu Lys Met
165 170 175

Gln Ile Asn Ala Glu Glu Val Val Val Gly Asp Leu Val Glu Val Lys
180 185 190

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

195

200

205

Cys Lys Val Asp Asn Ser Ser Leu Thr Gly Glu Ser Glu Pro Gln Thr
 210 215 220

Arg Ser Pro Glu Phe Thr His Glu Asn Pro Leu Glu Thr Arg Asn Ile
 225 230 235 240

Cys Phe Phe Ser Thr Asn Cys Val Glu Gly Thr Ala Arg Gly Ile Val
 245 250 255

Ile Ala Thr Gly Asp Arg Thr Val Met Gly Arg Ile Ala Thr Leu Ala
 260 265 270

Ser Gly Leu Glu Val Gly Arg Thr Pro Ile Ala Met Glu Ile Glu His
 275 280 285

Phe Ile Gln Leu Ile Thr Gly Val Ala Val Phe Leu Gly Val Ser Phe
 290 295 300

Phe Val Leu Ser Leu Ile Leu Gly Tyr Ser Trp Leu Glu Ala Val Ile
 305 310 315 320

Phe Leu Ile Gly Ile Ile Val Ala Asn Val Pro Glu Gly Leu Leu Ala
 325 330 335

Thr Val Thr Val Cys Leu Thr Leu Thr Ala Lys Arg Met Ala Arg Lys
 340 345 350

Asn Cys Leu Val Lys Asn Leu Glu Ala Val Glu Thr Leu Gly Ser Thr
 355 360 365

Ser Thr Ile Cys Ser Asp Lys Thr Gly Thr Leu Thr Gln Asn Arg Met
 370 375 380

Thr Val Ala His Met Trp Phe Asp Asn Gln Ile His Glu Ala Asp Thr
 385 390 395 400

Thr Glu Asp Gln Ser Gly Ala Thr Phe Asp Lys Arg Ser Pro Thr Trp
 405 410 415

Thr Ala Leu Ser Arg Ile Ala Gly Leu Cys Asn Arg Ala Val Phe Lys
420 425 430

Ala Gly Gln Glu Asn Ile Ser Val Ser Lys Arg Asp Thr Ala Gly Asp
435 440 445

Ala Ser Glu Ser Ala Leu Leu Lys Cys Ile Glu Leu Ser Cys Gly Ser
450 455 460

Val Arg Lys Met Arg Asp Arg Asn Pro Lys Val Ala Glu Ile Pro Phe
465 470 475 480

Asn Ser Thr Asn Lys Tyr Gln Leu Ser Ile His Glu Arg Glu Asp Ser
485 490 495

Pro Gln Ser His Val Leu Val Met Lys Gly Ala Pro Glu Arg Ile Leu
500 505 510

Asp Arg Cys Ser Thr Ile Leu Val Gln Gly Lys Glu Ile Pro Leu Asp
515 520 525

Lys Glu Met Gln Asp Ala Phe Gln Asn Ala Tyr Met Glu Leu Gly Gly
530 535 540

Leu Gly Glu Arg Val Leu Gly Phe Cys Gln Leu Asn Leu Pro Ser Gly
545 550 555 560

Lys Phe Pro Arg Gly Phe Lys Phe Asp Thr Asp Glu Leu Asn Phe Pro
565 570 575

Thr Glu Lys Leu Cys Phe Val Gly Leu Met Ser Met Ile Asp Pro Pro
580 585 590

Arg Ala Ala Val Pro Asp Ala Val Gly Lys Cys Arg Ser Ala Gly Ile
595 600 605

Lys Val Ile Met Val Thr Gly Asp His Pro Ile Thr Ala Lys Ala Ile
610 615 620

Ala Lys Gly Val Gly Ile Ile Ser Glu Gly Asn Glu Thr Val Glu Asp

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

Met Ala Tyr Gly Gln Ile Gly Met Ile Gln Ala Leu Gly Gly Phe Phe
850 855 860

Thr Tyr Phe Val Ile Leu Ala Glu Asn Gly Phe Leu Pro Ser Arg Leu
865 870 875 880

Leu Gly Ile Arg Leu Asp Trp Asp Asp Arg Thr Met Asn Asp Leu Glu
885 890 895

Asp Ser Tyr Gly Gln Glu Trp Thr Tyr Glu Gln Arg Lys Val Val Glu
900 905 910

Phe Thr Cys His Thr Ala Phe Phe Ala Ser Ile Val Val Val Gln Trp
915 920 925

Ala Asp Leu Ile Ile Cys Lys Thr Arg Arg Asn Ser Val Phe Gln Gln
930 935 940

Gly Met Lys Asn Lys Ile Leu Ile Phe Gly Leu Leu Glu Glu Thr Ala
945 950 955 960

Leu Ala Ala Phe Leu Ser Tyr Cys Pro Gly Met Gly Val Ala Leu Arg
965 970 975

Met Tyr Pro Leu Lys Val Thr Trp Trp Phe Cys Ala Phe Pro Tyr Ser
980 985 990

Leu Leu Ile Phe Ile Tyr Asp Glu Val Arg Lys Leu Ile Leu Arg Arg
995 1000 1005

Tyr Pro Gly Gly Trp Val Glu Lys Glu Thr Tyr Tyr
1010 1015 1020

<210> 26

<211> 1026

<212> PRT

<213> Homo sapiens

<400> 26

Met Gly Ser Gly Gly Ser Asp Ser Tyr Arg Ile Ala Thr Ser Gln Asp
1 5 10 15

Lys Lys Asp Asp Lys Asp Ser Pro Lys Lys Asn Lys Gly Lys Glu Arg
20 25 30

Arg Asp Leu Asp Asp Leu Lys Lys Glu Val Ala Met Thr Glu His Lys
35 40 45

Met Ser Val Glu Glu Val Cys Arg Lys Tyr Asn Thr Asp Cys Val Gln
50 55 60

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

Asn Ala Leu Thr Pro Pro Pro Thr Thr Pro Glu Trp Val Lys Phe Cys
85 90 95

Arg Gln Leu Phe Gly Gly Phe Ser Ile Leu Leu Trp Ile Gly Ala Ile
100 105 110

Leu Cys Phe Leu Ala Tyr Gly Ile Gln Ala Gly Thr Glu Asp Asp Pro
115 120 125

Ser Gly Asp Asn Leu Tyr Leu Gly Ile Val Leu Ala Ala Val Val Ile
130 135 140

Ile Thr Gly Cys Phe Ser Tyr Tyr Gln Glu Ala Lys Ser Ser Lys Ile
145 150 155 160

Met Glu Ser Phe Lys Asn Met Val Pro Gln Gln Ala Leu Val Ile Arg
165 170 175

Glu Gly Glu Lys Met Gln Val Asn Ala Glu Glu Val Val Val Gly Asp
180 185 190

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

Ile Ser Ala His Gly Cys Lys Val Asp Asn Ser Ser Leu Thr Gly Glu
210 215 220

Ser Glu Pro Gln Thr Arg Ser Pro Asp Cys Thr His Asp Asn Pro Leu

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

Asp Val Ala Gly Asp Ala Ser Glu Ser Ala Leu Leu Lys Cys Ile Glu
450 455 460

Leu Ser Ser Gly Ser Val Lys Leu Met Arg Glu Arg Asn Lys Lys Val
465 470 475 480

Ala Glu Ile Pro Phe Asn Ser Thr Asn Lys Tyr Gln Leu Ser Ile His
485 490 495

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

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

Lys Glu Gln Pro Leu Asp Glu Glu Met Lys Glu Ala Phe Gln Asn Ala
530 535 540

Tyr Leu Glu Leu Gly Gly Leu Gly Glu Arg Val Leu Gly Phe Cys His
545 550 555 560

Tyr Tyr Leu Pro Glu Glu Gln Phe Pro Lys Gly Phe Ala Phe Asp Cys
565 570 575

Asp Asp Val Asn Phe Thr Thr Asp Asn Leu Cys Phe Val Gly Leu Met
580 585 590

Ser Met Ile Asp Pro Pro Arg Ala Ala Val Pro Asp Ala Val Gly Lys
595 600 605

Cys Arg Ser Ala Gly Ile Lys Val Ile Met Val Thr Gly Asp His Pro
610 615 620

Ile Thr Ala Lys Ala Ile Ala Lys Gly Val Gly Ile Ile Ser Glu Gly
625 630 635 640

Asn Glu Thr Val Glu Asp Ile Ala Ala Arg Leu Asn Ile Pro Val Ser
645 650 655

Gln Val Asn Pro Arg Asp Ala Lys Ala Cys Val Ile His Gly Thr Asp

660

665

670

Leu Lys Asp Phe Thr Ser Glu Gln Ile Asp Glu Ile Leu Gln Asn His
 675 680 685

Thr Glu Ile Val Phe Ala Arg Thr Ser Pro Gln Gln Lys Leu Ile Ile
 690 695 700

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

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

Met Gly Ile Ala Gly Ser Asp Val Ser Lys Gln Ala Ala Asp Met Ile
 740 745 750

Leu Leu Asp Asp Asn Phe Ala Ser Ile Val Thr Gly Val Glu Glu Gly
 755 760 765

Arg Leu Ile Phe Asp Asn Leu Lys Lys Ser Ile Ala Tyr Thr Leu Thr
 770 775 780

Ser Asn Ile Pro Glu Ile Thr Pro Phe Leu Leu Phe Ile Met Ala Asn
 785 790 795 800

Ile Pro Leu Pro Leu Gly Thr Ile Thr Ile Leu Cys Ile Asp Leu Gly
 805 810 815

Thr Asp Met Val Pro Ala Ile Ser Leu Ala Tyr Glu Ala Ala Glu Ser
 820 825 830

Asp Ile Met Lys Arg Gln Pro Arg Asn Pro Arg Thr Asp Lys Leu Val
 835 840 845

Asn Glu Arg Leu Ile Ser Met Ala Tyr Gly Gln Ile Gly Met Ile Gln
 850 855 860

Ala Leu Gly Gly Phe Phe Ser Tyr Phe Val Ile Leu Ala Glu Asn Gly
 865 870 875 880

Phe Leu Pro Gly Asn Leu Val Gly Ile Arg Leu Asn Trp Asp Asp Arg
885 890 895

Thr Val Asn Asp Leu Glu Asp Ser Tyr Gly Gln Gln Trp Thr Tyr Glu
900 905 910

Gln Arg Lys Val Val Glu Phe Thr Cys His Thr Ala Phe Phe Val Ser
915 920 925

Ile Val Val Val Gln Trp Ala Asp Leu Ile Ile Cys Lys Thr Arg Arg
930 935 940

Asn Ser Val Phe Gln Gln Gly Met Lys Asn Lys Ile Leu Ile Phe Gly
945 950 955 960

Leu Phe Glu Glu Thr Ala Leu Ala Ala Phe Leu Ser Tyr Cys Pro Gly
965 970 975

Met Asp Val Ala Leu Arg Met Tyr Pro Leu Lys Pro Ser Trp Trp Phe
980 985 990

Cys Ala Phe Pro Tyr Ser Phe Leu Ile Phe Val Tyr Asp Glu Ile Arg
995 1000 1005

Lys Leu Ile Leu Arg Arg Asn Pro Gly Gly Trp Val Glu Lys Glu
1010 1015 1020

Thr Tyr Tyr
1025

<210> 27
<211> 1029
<212> PRT
<213> Homo sapiens

<400> 27
Met Gly Leu Trp Gly Lys Lys Gly Thr Val Ala Pro His Asp Gln Ser
1 5 10 15

Pro Arg Arg Arg Pro Lys Lys Gly Leu Ile Lys Lys Lys Met Val Lys
20 25 30

Arg Glu Lys Gln Lys Arg Asn Met Glu Glu Leu Lys Lys Glu Val Val
35 40 45

Met Asp Asp His Lys Leu Thr Leu Glu Glu Leu Ser Thr Lys Tyr Ser
50 55 60

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

Thr Arg Gly Gly Pro Asn Thr Val Thr Pro Pro Pro Thr Thr Pro Glu
85 90 95

Trp Val Lys Phe Cys Lys Gln Leu Phe Gly Gly Phe Ser Leu Leu Leu
100 105 110

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

Phe Asn Glu Glu Pro Thr Lys Asp Asn Leu Tyr Leu Ser Ile Val Leu
130 135 140

Ser Val Val Val Ile Val Thr Gly Cys Phe Ser Tyr Tyr Gln Glu Ala
145 150 155 160

Lys Ser Ser Lys Ile Met Glu Ser Phe Lys Asn Met Val Pro Gln Gln
165 170 175

Ala Leu Val Ile Arg Gly Gly Glu Lys Met Gln Ile Asn Val Gln Glu
180 185 190

Val Val Leu Gly Asp Leu Val Glu Ile Lys Gly Gly Asp Arg Val Pro
195 200 205

Ala Asp Leu Arg Leu Ile Ser Ala Gln Gly Cys Lys Val Asp Asn Ser
210 215 220

Ser Leu Thr Gly Glu Ser Glu Pro Gln Ser Arg Ser Pro Asp Phe Thr
225 230 235 240

His Glu Asn Pro Leu Glu Thr Arg Asn Ile Cys Phe Phe Ser Thr Asn

245

250

255

Cys Val Glu Gly Thr Ala Arg Gly Ile Val Ile Ala Thr Gly Asp Ser
 260 265 270

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

Gln Thr Pro Ile Ala Ala Glu Ile Glu His Phe Ile His Leu Ile Thr
 290 295 300

Val Val Ala Val Phe Leu Gly Val Thr Phe Phe Ala Leu Ser Leu Leu
 305 310 315 320

Leu Gly Tyr Gly Trp Leu Glu Ala Ile Ile Phe Leu Ile Gly Ile Ile
 325 330 335

Val Ala Asn Val Pro Glu Gly Leu Leu Ala Thr Val Thr Val Cys Leu
 340 345 350

Thr Leu Thr Ala Lys Arg Met Ala Arg Lys Asn Cys Leu Val Lys Asn
 355 360 365

Leu Glu Ala Val Glu Thr Leu Gly Ser Thr Ser Thr Ile Cys Ser Asp
 370 375 380

Lys Thr Gly Thr Leu Thr Gln Asn Arg Met Thr Val Ala His Met Trp
 385 390 395 400

Phe Asp Met Thr Val Tyr Glu Ala Asp Thr Thr Glu Glu Gln Thr Gly
 405 410 415

Lys Thr Phe Thr Lys Ser Ser Asp Thr Trp Phe Met Leu Ala Arg Ile
 420 425 430

Ala Gly Leu Cys Asn Arg Ala Asp Phe Lys Ala Asn Gln Glu Ile Leu
 435 440 445

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

Leu Lys Phe Ile Glu Gln Ser Tyr Ser Ser Val Ala Glu Met Arg Glu
465 470 475 480

Lys Asn Pro Lys Val Ala Glu Ile Pro Phe Asn Ser Thr Asn Lys Tyr
485 490 495

Gln Met Ser Ile His Leu Arg Glu Asp Ser Ser Gln Thr His Val Leu
500 505 510

Met Met Lys Gly Ala Pro Glu Arg Ile Leu Glu Phe Cys Ser Thr Phe
515 520 525

Leu Leu Asn Gly Gln Glu Tyr Ser Met Asn Asp Glu Met Lys Glu Ala
530 535 540

Phe Gln Asn Ala Tyr Leu Glu Leu Gly Gly Leu Gly Glu Arg Val Leu
545 550 555 560

Gly Phe Cys Phe Leu Asn Leu Pro Ser Ser Phe Ser Lys Gly Phe Pro
565 570 575

Phe Asn Thr Asp Glu Ile Asn Phe Pro Met Asp Asn Leu Cys Phe Val
580 585 590

Gly Leu Ile Ser Met Ile Asp Pro Pro Arg Ala Ala Val Pro Asp Ala
595 600 605

Val Ser Lys Cys Arg Ser Ala Gly Ile Lys Val Ile Met Val Thr Gly
610 615 620

Asp His Pro Ile Thr Ala Lys Ala Ile Ala Lys Gly Val Gly Ile Ile
625 630 635 640

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

Pro Ile Ser Lys Val Asp Ala Ser Ala Ala Lys Ala Ile Val Val His
660 665 670

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

675

680

685

Gln Asn His Pro Glu Ile Val Phe Ala Arg Thr Ser Pro Gln Gln Lys
 690 695 700

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

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

Gly Ile Ala Met Gly Ile Ser Gly Ser Asp Val Ser Lys Gln Ala Ala
 740 745 750

Asp Met Ile Leu Leu Asp Asp Asn Phe Ala Ser Ile Val Thr Gly Val
 755 760 765

Glu Glu Gly Arg Leu Ile Phe Asp Asn Leu Lys Lys Ser Ile Met Tyr
 770 775 780

Thr Leu Thr Ser Asn Ile Pro Glu Ile Thr Pro Phe Leu Met Phe Ile
 785 790 795 800

Ile Leu Gly Ile Pro Leu Pro Leu Gly Thr Ile Thr Ile Leu Cys Ile
 805 810 815

Asp Leu Gly Thr Asp Met Val Pro Ala Ile Ser Leu Ala Tyr Glu Ser
 820 825 830

Ala Glu Ser Asp Ile Met Lys Arg Leu Pro Arg Asn Pro Lys Thr Asp
 835 840 845

Asn Leu Val Asn His Arg Leu Ile Gly Met Ala Tyr Gly Gln Ile Gly
 850 855 860

Met Ile Gln Ala Leu Ala Gly Phe Phe Thr Tyr Phe Val Ile Leu Ala
 865 870 875 880

Glu Asn Gly Phe Arg Pro Val Asp Leu Leu Gly Ile Arg Leu His Trp
 885 890 895

Glu Asp Lys Tyr Leu Asn Asp Leu Glu Asp Ser Tyr Gly Gln Gln Trp
900 905 910

Thr Tyr Glu Gln Arg Lys Val Val Glu Phe Thr Cys Gln Thr Ala Phe
915 920 925

Phe Val Thr Ile Val Val Val Gln Trp Ala Asp Leu Ile Ile Ser Lys
930 935 940

Thr Arg Arg Asn Ser Leu Phe Gln Gln Gly Met Arg Asn Lys Val Leu
945 950 955 960

Ile Phe Gly Ile Leu Glu Glu Thr Leu Leu Ala Ala Phe Leu Ser Tyr
965 970 975

Thr Pro Gly Met Asp Val Ala Leu Arg Met Tyr Pro Leu Lys Ile Thr
980 985 990

Trp Trp Leu Cys Ala Ile Pro Tyr Ser Ile Leu Ile Phe Val Tyr Asp
995 1000 1005

Glu Ile Arg Lys Leu Leu Ile Arg Gln His Pro Asp Gly Trp Val
1010 1015 1020

Glu Arg Glu Thr Tyr Tyr
1025

<210> 28
<211> 279
<212> PRT
<213> Homo sapiens

<400> 28
Met Thr Lys Asn Glu Lys Lys Ser Leu Asn Gln Ser Leu Ala Glu Trp
1 5 10 15

Lys Leu Phe Ile Tyr Asn Pro Thr Thr Gly Glu Phe Leu Gly Arg Thr
20 25 30

Ala Lys Ser Trp Gly Leu Ile Leu Leu Phe Tyr Leu Val Phe Tyr Gly
35 40 45

Phe Leu Ala Ala Leu Phe Ser Phe Thr Met Trp Val Met Leu Gln Thr
50 55 60

Leu Asn Asp Glu Val Pro Lys Tyr Arg Asp Gln Ile Pro Ser Pro Gly
65 70 75 80

Leu Met Val Phe Pro Lys Pro Val Thr Ala Leu Glu Tyr Thr Phe Ser
85 90 95

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

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

Pro Asp Gly Ala Leu Phe Glu Gln Lys Gly Pro Val Tyr Val Ala Cys
130 135 140

Gln Phe Pro Ile Ser Leu Leu Gln Ala Cys Ser Gly Met Asn Asp Pro
145 150 155 160

Asp Phe Gly Tyr Ser Gln Gly Asn Pro Cys Ile Leu Val Lys Met Asn
165 170 175

Arg Ile Ile Gly Leu Lys Pro Glu Gly Val Pro Arg Ile Asp Cys Val
180 185 190

Ser Lys Asn Glu Asp Ile Pro Asn Val Ala Val Tyr Pro His Asn Gly
195 200 205

Met Ile Asp Leu Lys Tyr Phe Pro Tyr Tyr Gly Lys Lys Leu His Val
210 215 220

Gly Tyr Leu Gln Pro Leu Val Ala Val Gln Val Ser Phe Ala Pro Asn
225 230 235 240

Asn Thr Gly Lys Glu Val Thr Val Glu Cys Lys Ile Asp Gly Ser Ala
245 250 255

Asn Leu Lys Ser Gln Asp Asp Arg Asp Lys Phe Leu Gly Arg Val Met

260

265

270

Phe Lys Ile Thr Ala Arg Ala
275

<210> 29

<211> 1258

<212> PRT

<213> Homo sapiens

<400> 29

Met Gly Asp Met Ala Asn Asn Ser Val Ala Tyr Ser Gly Val Lys Asn
1 5 10 15

Ser Leu Lys Glu Ala Asn His Asp Gly Asp Phe Gly Ile Thr Leu Ala
20 25 30

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

Ile Gln Glu Ser Tyr Gly Asp Val Tyr Gly Ile Cys Thr Lys Leu Lys
50 55 60

Thr Ser Pro Asn Glu Gly Leu Ser Gly Asn Pro Ala Asp Leu Glu Arg
65 70 75 80

Arg Glu Ala Val Phe Gly Lys Asn Phe Ile Pro Pro Lys Lys Pro Lys
85 90 95

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

Ile Leu Glu Ile Ala Ala Ile Val Ser Leu Gly Leu Ser Phe Tyr Gln
115 120 125

Pro Pro Glu Gly Asp Asn Ala Leu Cys Gly Glu Val Ser Val Gly Glu
130 135 140

Glu Glu Gly Glu Gly Glu Thr Gly Trp Ile Glu Gly Ala Ala Ile Leu
145 150 155 160

Leu Ser Val Val Cys Val Val Leu Val Thr Ala Phe Asn Asp Trp Ser

165

170

175

Lys Glu Lys Gln Phe Arg Gly Leu Gln Ser Arg Ile Glu Gln Glu Gln
 180 185 190

Lys Phe Thr Val Ile Arg Gly Gly Gln Val Ile Gln Ile Pro Val Ala
 195 200 205

Asp Ile Thr Val Gly Asp Ile Ala Gln Val Lys Tyr Gly Asp Leu Leu
 210 215 220

Pro Ala Asp Gly Ile Leu Ile Gln Gly Asn Asp Leu Lys Ile Asp Glu
 225 230 235 240

Ser Ser Leu Thr Gly Glu Ser Asp His Val Lys Lys Ser Leu Asp Lys
 245 250 255

Asp Pro Leu Leu Leu Ser Gly Thr His Val Met Glu Gly Ser Gly Arg
 260 265 270

Met Val Val Thr Ala Val Gly Val Asn Ser Gln Thr Gly Ile Ile Phe
 275 280 285

Thr Leu Leu Gly Ala Gly Gly Glu Glu Glu Glu Lys Lys Asp Glu Lys
 290 295 300

Lys Lys Glu Lys Lys Asn Lys Lys Gln Asp Gly Ala Ile Glu Asn Arg
 305 310 315 320

Asn Lys Ala Lys Ala Gln Asp Gly Ala Ala Met Glu Met Gln Pro Leu
 325 330 335

Lys Ser Glu Glu Gly Gly Asp Gly Asp Glu Lys Asp Lys Lys Lys Ala
 340 345 350

Asn Leu Pro Lys Lys Glu Lys Ser Val Leu Gln Gly Lys Leu Thr Lys
 355 360 365

Leu Ala Val Gln Ile Gly Lys Ala Gly Leu Leu Met Ser Ala Ile Thr
 370 375 380

Val Ile Ile Leu Val Leu Tyr Phe Val Ile Asp Thr Phe Trp Val Gln
385 390 395 400

Lys Arg Pro Trp Leu Ala Glu Cys Thr Pro Ile Tyr Ile Gln Tyr Phe
405 410 415

Val Lys Phe Phe Ile Ile Gly Val Thr Val Leu Val Val Ala Val Pro
420 425 430

Glu Gly Leu Pro Leu Ala Val Thr Ile Ser Leu Ala Tyr Ser Val Lys
435 440 445

Lys Met Met Lys Asp Asn Asn Leu Val Arg His Leu Asp Ala Cys Glu
450 455 460

Thr Met Gly Asn Ala Thr Ala Ile Cys Ser Asp Lys Thr Gly Thr Leu
465 470 475 480

Thr Met Asn Arg Met Thr Val Val Gln Ala Tyr Ile Asn Glu Lys His
485 490 495

Tyr Lys Lys Val Pro Glu Pro Glu Ala Ile Pro Pro Asn Ile Leu Ser
500 505 510

Tyr Leu Val Thr Gly Ile Ser Val Asn Cys Ala Tyr Thr Ser Lys Ile
515 520 525

Leu Pro Pro Glu Lys Glu Gly Gly Leu Pro Arg His Val Gly Asn Lys
530 535 540

Thr Glu Cys Ala Leu Leu Gly Leu Leu Leu Asp Leu Lys Arg Asp Tyr
545 550 555 560

Gln Asp Val Arg Asn Glu Ile Pro Glu Glu Ala Leu Tyr Lys Val Tyr
565 570 575

Thr Phe Asn Ser Val Arg Lys Ser Met Ser Thr Val Leu Lys Asn Ser
580 585 590

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

595

600

605

Lys Lys Cys Phe Lys Ile Leu Ser Ala Asn Gly Glu Ala Lys Val Phe
 610 615 620

Arg Pro Arg Asp Arg Asp Ile Val Lys Thr Val Ile Glu Pro Met
 625 630 635 640

Ala Ser Glu Gly Leu Arg Thr Ile Cys Leu Ala Phe Arg Asp Phe Pro
 645 650 655

Ala Gly Glu Pro Glu Pro Glu Trp Asp Asn Glu Asn Asp Ile Val Thr
 660 665 670

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

Glu Val Pro Asp Ala Ile Lys Lys Cys Gln Arg Ala Gly Ile Thr Val
 690 695 700

Arg Met Val Thr Gly Asp Asn Ile Asn Thr Ala Arg Ala Ile Ala Thr
 705 710 715 720

Lys Cys Gly Ile Leu His Pro Gly Glu Asp Phe Leu Cys Leu Glu Gly
 725 730 735

Lys Asp Phe Asn Arg Arg Ile Arg Asn Glu Lys Gly Glu Ile Glu Gln
 740 745 750

Glu Arg Ile Asp Lys Ile Trp Pro Lys Leu Arg Val Leu Ala Arg Ser
 755 760 765

Ser Pro Thr Asp Lys His Thr Leu Val Lys Gly Ile Ile Asp Ser Thr
 770 775 780

Val Ser Asp Gln Arg Gln Val Val Ala Val Thr Gly Asp Gly Thr Asn
 785 790 795 800

Asp Gly Pro Ala Leu Lys Lys Ala Asp Val Gly Phe Ala Met Gly Ile
 805 810 815

Ala Gly Thr Asp Val Ala Lys Glu Ala Ser Asp Ile Ile Leu Thr Asp
820 825 830

Asp Asn Phe Thr Ser Ile Val Lys Ala Val Met Trp Gly Arg Asn Val
835 840 845

Tyr Asp Ser Ile Ser Lys Phe Leu Gln Phe Gln Leu Thr Val Asn Val
850 855 860

Val Ala Val Ile Val Ala Phe Thr Gly Ala Cys Ile Thr Gln Asp Ser
865 870 875 880

Pro Leu Lys Ala Val Gln Met Leu Trp Val Asn Leu Ile Met Asp Thr
885 890 895

Leu Ala Ser Leu Ala Leu Ala Thr Glu Pro Pro Thr Glu Ser Leu Leu
900 905 910

Leu Arg Lys Pro Tyr Gly Arg Asn Lys Pro Leu Ile Ser Arg Thr Met
915 920 925

Met Lys Asn Ile Leu Gly His Ala Phe Tyr Gln Leu Val Val Val Phe
930 935 940

Thr Leu Leu Phe Ala Gly Glu Lys Phe Phe Asp Ile Asp Ser Gly Arg
945 950 955 960

Asn Ala Pro Leu His Ala Pro Pro Ser Glu His Tyr Thr Ile Val Phe
965 970 975

Asn Thr Phe Val Leu Met Gln Leu Phe Asn Glu Ile Asn Ala Arg Lys
980 985 990

Ile His Gly Glu Arg Asn Val Phe Glu Gly Ile Phe Asn Asn Ala Ile
995 1000 1005

Phe Cys Thr Ile Val Leu Gly Thr Phe Val Val Gln Ile Ile Ile
1010 1015 1020

Val Gln Phe Gly Gly Lys Pro Phe Ser Cys Ser Glu Leu Ser Ile

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

Leu Thr Ile Glu Met Asn Lys Ser Ala Thr Ser Ser Ser Pro Gly
1235 1240 1245

Ser Pro Leu His Ser Leu Glu Thr Ser Leu
1250 1255

<210> 30
<211> 1272
<212> PRT
<213> Homo sapiens

<400> 30
Met Gly Asp Met Thr Asn Ser Asp Phe Tyr Ser Lys Asn Gln Arg Asn
1 5 10 15

Glu Ser Ser His Gly Gly Glu Phe Gly Cys Thr Met Glu Glu Leu Arg
20 25 30

Ser Leu Met Glu Leu Arg Gly Thr Glu Ala Val Val Lys Ile Lys Glu
35 40 45

Thr Tyr Gly Asp Thr Glu Ala Ile Cys Arg Arg Leu Lys Thr Ser Pro
50 55 60

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

Ile Phe Gly Gln Asn Phe Ile Pro Pro Lys Lys Pro Lys Thr Phe Leu
85 90 95

Gln Leu Val Trp Glu Ala Leu Gln Asp Val Thr Leu Ile Ile Leu Glu
100 105 110

Ile Ala Ala Ile Ile Ser Leu Gly Leu Ser Phe Tyr His Pro Pro Gly
115 120 125

Glu Gly Asn Glu Gly Cys Ala Thr Ala Gln Gly Gly Ala Glu Asp Glu
130 135 140

Gly Glu Ala Glu Ala Gly Trp Ile Glu Gly Ala Ala Ile Leu Leu Ser
145 150 155 160

Val Ile Cys Val Val Leu Val Thr Ala Phe Asn Asp Trp Ser Lys Glu
165 170 175

Lys Gln Phe Arg Gly Leu Gln Ser Arg Ile Glu Gln Glu Gln Lys Phe
180 185 190

Thr Val Val Arg Ala Gly Gln Val Val Gln Ile Pro Val Ala Glu Ile
195 200 205

Val Val Gly Asp Ile Ala Gln Val Lys Tyr Gly Asp Leu Leu Pro Ala
210 215 220

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

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

Met Leu Leu Ser Gly Thr His Val Met Glu Gly Ser Gly Arg Met Leu
260 265 270

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

Leu Gly Ala Gly Gly Glu Glu Glu Glu Lys Lys Asp Lys Lys Gly Val
290 295 300

Lys Lys Gly Asp Gly Leu Gln Leu Pro Ala Ala Asp Gly Ala Ala Ala
305 310 315 320

Ser Asn Ala Ala Asp Ser Ala Asn Ala Ser Leu Val Asn Gly Lys Met
325 330 335

Gln Asp Gly Asn Val Asp Ala Ser Gln Ser Lys Ala Lys Gln Gln Asp
340 345 350

Gly Ala Ala Ala Met Glu Met Gln Pro Leu Lys Ser Ala Glu Gly Gly
355 360 365

Asp Ala Asp Asp Arg Lys Lys Ala Ser Met His Lys Lys Glu Lys Ser

370

375

380

Val Leu Gln Gly Lys Leu Thr Lys Leu Ala Val Gln Ile Gly Lys Ala
 385 390 395 400

Gly Leu Val Met Ser Ala Ile Thr Val Ile Ile Leu Val Leu Tyr Phe
 405 410 415

Thr Val Asp Thr Phe Val Val Asn Lys Lys Pro Trp Leu Pro Glu Cys
 420 425 430

Thr Pro Val Tyr Val Gln Tyr Phe Val Lys Phe Phe Ile Ile Gly Val
 435 440 445

Thr Val Leu Val Val Ala Val Pro Glu Gly Leu Pro Leu Ala Val Thr
 450 455 460

Ile Ser Leu Ala Tyr Ser Val Lys Lys Met Met Lys Asp Asn Asn Leu
 465 470 475 480

Val Arg His Leu Asp Ala Cys Glu Thr Met Gly Asn Ala Thr Ala Ile
 485 490 495

Cys Ser Asp Lys Thr Gly Thr Leu Thr Thr Asn Arg Met Thr Val Val
 500 505 510

Gln Ala Tyr Val Gly Asp Val His Tyr Lys Glu Ile Pro Asp Pro Ser
 515 520 525

Ser Ile Asn Thr Lys Thr Met Glu Leu Leu Ile Asn Ala Ile Ala Ile
 530 535 540

Asn Ser Ala Tyr Thr Thr Lys Ile Leu Pro Pro Glu Lys Glu Gly Ala
 545 550 555 560

Leu Pro Arg Gln Val Gly Asn Lys Thr Glu Cys Gly Leu Leu Gly Phe
 565 570 575

Val Leu Asp Leu Lys Gln Asp Tyr Glu Pro Val Arg Ser Gln Met Pro
 580 585 590

Glu Glu Lys Leu Tyr Lys Val Tyr Thr Phe Asn Ser Val Arg Lys Ser
595 600 605

Met Ser Thr Val Ile Lys Leu Pro Asp Glu Ser Phe Arg Met Tyr Ser
610 615 620

Lys Gly Ala Ser Glu Ile Val Leu Lys Lys Cys Cys Lys Ile Leu Asn
625 630 635 640

Gly Ala Gly Glu Pro Arg Val Phe Arg Pro Arg Asp Arg Asp Glu Met
645 650 655

Val Lys Lys Val Ile Glu Pro Met Ala Cys Asp Gly Leu Arg Thr Ile
660 665 670

Cys Val Ala Tyr Arg Asp Phe Pro Ser Ser Pro Glu Pro Asp Trp Asp
675 680 685

Asn Glu Asn Asp Ile Leu Asn Glu Leu Thr Cys Ile Cys Val Val Gly
690 695 700

Ile Glu Asp Pro Val Arg Pro Glu Val Pro Glu Ala Ile Arg Lys Cys
705 710 715 720

Gln Arg Ala Gly Ile Thr Val Arg Met Val Thr Gly Asp Asn Ile Asn
725 730 735

Thr Ala Arg Ala Ile Ala Ile Lys Cys Gly Ile Ile His Pro Gly Glu
740 745 750

Asp Phe Leu Cys Leu Glu Gly Lys Glu Phe Asn Arg Arg Ile Arg Asn
755 760 765

Glu Lys Gly Glu Ile Glu Gln Glu Arg Ile Asp Lys Ile Trp Pro Lys
770 775 780

Leu Arg Val Leu Ala Arg Ser Ser Pro Thr Asp Lys His Thr Leu Val
785 790 795 800

Lys Gly Ile Ile Asp Ser Thr His Thr Glu Gln Arg Gln Val Val Ala

805

810

815

Val Thr Gly Asp Gly Thr Asn Asp Gly Pro Ala Leu Lys Lys Ala Asp
 820 825 830

Val Gly Phe Ala Met Gly Ile Ala Gly Thr Asp Val Ala Lys Glu Ala
 835 840 845

Ser Asp Ile Ile Leu Thr Asp Asp Asn Phe Ser Ser Ile Val Lys Ala
 850 855 860

Val Met Trp Gly Arg Asn Val Tyr Asp Ser Ile Ser Lys Phe Leu Gln
 865 870 875 880

Phe Gln Leu Thr Val Asn Val Val Ala Val Ile Val Ala Phe Thr Gly
 885 890 895

Ala Cys Ile Thr Gln Asp Ser Pro Leu Lys Ala Val Gln Met Leu Trp
 900 905 910

Val Asn Leu Ile Met Asp Thr Phe Ala Ser Leu Ala Leu Ala Thr Glu
 915 920 925

Pro Pro Thr Glu Thr Leu Leu Leu Arg Lys Pro Tyr Gly Arg Asn Lys
 930 935 940

Pro Leu Ile Ser Arg Thr Met Met Lys Asn Ile Leu Gly His Ala Val
 945 950 955 960

Tyr Gln Leu Ala Leu Ile Phe Thr Leu Leu Phe Val Gly Glu Lys Met
 965 970 975

Phe Gln Ile Asp Ser Gly Arg Asn Ala Pro Leu His Ser Pro Pro Ser
 980 985 990

Glu His Tyr Thr Ile Ile Phe Asn Thr Phe Val Met Met Gln Leu Phe
 995 1000 1005

Asn Glu Ile Asn Ala Arg Lys Ile His Gly Glu Arg Asn Val Phe
 1010 1015 1020

Asp Gly Ile Phe Arg Asn Pro Ile Phe Cys Thr Ile Val Leu Gly
1025 1030 1035

Thr Phe Ala Ile Gln Ile Val Ile Val Gln Phe Gly Gly Lys Pro
1040 1045 1050

Phe Ser Cys Ser Pro Leu Gln Leu Asp Gln Trp Met Trp Cys Ile
1055 1060 1065

Phe Ile Gly Leu Gly Glu Leu Val Trp Gly Gln Val Ile Ala Thr
1070 1075 1080

Ile Pro Thr Ser Arg Leu Lys Phe Leu Lys Glu Ala Gly Arg Leu
1085 1090 1095

Thr Gln Lys Glu Glu Ile Pro Glu Glu Glu Leu Asn Glu Asp Val
1100 1105 1110

Glu Glu Ile Asp His Ala Glu Arg Glu Leu Arg Arg Gly Gln Ile
1115 1120 1125

Leu Trp Phe Arg Gly Leu Asn Arg Ile Gln Thr Gln Ile Glu Val
1130 1135 1140

Val Asn Thr Phe Lys Ser Gly Ala Ser Phe Gln Gly Ala Leu Arg
1145 1150 1155

Arg Gln Ser Ser Val Thr Ser Gln Ser Gln Asp Ile Arg Val Val
1160 1165 1170

Lys Ala Phe Arg Ser Ser Leu Tyr Glu Gly Leu Glu Lys Pro Glu
1175 1180 1185

Ser Arg Thr Ser Ile His Asn Phe Met Ala His Pro Glu Phe Arg
1190 1195 1200

Ile Glu Asp Ser Gln Pro His Ile Pro Leu Ile Asp Asp Thr Asp
1205 1210 1215

Leu Glu Glu Asp Ala Ala Leu Lys Gln Asn Ser Ser Pro Pro Ser

1220

1225

1230

Ser Leu Asn Lys Asn Asn Ser Ala Ile Asp Ser Gly Ile Asn Leu
 1235 1240 1245

Thr Thr Asp Thr Ser Lys Ser Ala Thr Ser Ser Ser Pro Gly Ser
 1250 1255 1260

Pro Ile His Ser Leu Glu Thr Ser Leu
 1265 1270

<210> 31

<211> 874

<212> PRT

<213> Homo sapiens

<400> 31

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

Glu Leu Arg Thr Leu Met Glu Leu Arg Gly Ala Glu Ala Leu Gln Lys
 35 40 45

Ile Glu Glu Ala Tyr Gly Asp Val Ser Gly Leu Cys Arg Arg Leu Lys
 50 55 60

Thr Ser Pro Thr Glu Gly Leu Ala Asp Asn Thr Asn Asp Leu Glu Lys
 65 70 75 80

Arg Arg Gln Ile Tyr Gly Gln Asn Phe Ile Pro Pro Lys Gln Pro Lys
 85 90 95

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

Ile Leu Glu Val Ala Ala Ile Val Ser Leu Gly Leu Ser Phe Tyr Ala
 115 120 125

Pro Pro Gly Glu Glu Ser Glu Ala Cys Gly Asn Val Ser Gly Gly Ala

130

135

140

Glu Asp Glu Gly Glu Ala Glu Ala Gly Trp Ile Glu Gly Ala Ala Ile
 145 150 155 160

Leu Leu Ser Val Ile Cys Val Val Leu Val Thr Ala Phe Asn Asp Trp
 165 170 175

Ser Lys Glu Lys Gln Phe Arg Gly Leu Gln Ser Arg Ile Glu Gln Glu
 180 185 190

Gln Lys Phe Thr Val Ile Arg Asn Gly Gln Leu Leu Gln Val Pro Val
 195 200 205

Ala Ala Leu Val Val Gly Asp Ile Ala Gln Val Lys Tyr Gly Asp Leu
 210 215 220

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

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

Lys Asp Pro Met Leu Leu Ser Gly Thr His Val Met Glu Gly Ser Gly
 260 265 270

Arg Met Val Val Thr Ala Val Gly Val Asn Ser Gln Thr Gly Ile Ile
 275 280 285

Phe Thr Leu Leu Gly Ala Gly Gly Glu Glu Glu Glu Lys Lys Asp Lys
 290 295 300

Lys Gly Lys Gln Gln Asp Gly Ala Met Glu Ser Ser Gln Thr Lys Ala
 305 310 315 320

Lys Lys Gln Asp Gly Ala Val Ala Met Glu Met Gln Pro Leu Lys Ser
 325 330 335

Ala Glu Gly Gly Glu Met Glu Glu Arg Glu Lys Lys Lys Ala Asn Ala
 340 345 350

Pro Lys Lys Glu Lys Ser Val Leu Gln Gly Lys Leu Thr Lys Leu Ala
355 360 365

Val Gln Ile Gly Lys Ala Gly Leu Val Met Ser Ala Ile Thr Val Ile
370 375 380

Ile Leu Val Leu Tyr Phe Val Ile Glu Thr Phe Val Val Glu Gly Arg
385 390 395 400

Thr Trp Leu Ala Glu Cys Thr Pro Val Tyr Val Gln Tyr Phe Val Lys
405 410 415

Phe Phe Ile Ile Gly Val Thr Val Leu Val Val Ala Val Pro Glu Gly
420 425 430

Leu Pro Leu Ala Val Thr Ile Ser Leu Ala Tyr Ser Val Lys Lys Met
435 440 445

Met Lys Asp Asn Asn Leu Val Arg His Leu Asp Ala Cys Glu Thr Met
450 455 460

Gly Asn Ala Thr Ala Ile Cys Ser Asp Lys Thr Gly Thr Leu Thr Thr
465 470 475 480

Asn Arg Met Thr Val Val Gln Ser Tyr Leu Gly Asp Thr His Tyr Lys
485 490 495

Glu Ile Pro Ala Pro Ser Ala Leu Thr Pro Lys Ile Leu Asp Leu Leu
500 505 510

Val His Ala Ile Ser Ile Asn Ser Ala Tyr Thr Thr Lys Ile Leu Pro
515 520 525

Pro Glu Lys Glu Gly Ala Leu Pro Arg Gln Val Gly Asn Lys Thr Glu
530 535 540

Cys Ala Leu Leu Gly Phe Val Leu Asp Leu Lys Arg Asp Phe Gln Pro
545 550 555 560

Val Arg Glu Gln Ile Pro Glu Asp Lys Leu Tyr Lys Val Tyr Thr Phe

565

570

575

Asn Ser Val Arg Lys Ser Met Ser Thr Val Ile Arg Met Pro Asp Gly
 580 585 590

Gly Phe Arg Leu Phe Ser Lys Gly Ala Ser Glu Ile Leu Leu Lys Lys
 595 600 605

Cys Thr Asn Ile Leu Asn Ser Asn Gly Glu Leu Arg Gly Phe Arg Pro
 610 615 620

Arg Asp Arg Asp Asp Met Val Arg Lys Ile Ile Glu Pro Met Ala Cys
 625 630 635 640

Asp Gly Leu Arg Thr Ile Cys Ile Ala Tyr Arg Asp Phe Ser Ala Gly
 645 650 655

Gln Glu Pro Asp Trp Asp Asn Glu Asn Glu Val Val Gly Asp Leu Thr
 660 665 670

Cys Ile Ala Val Val Gly Ile Glu Asp Pro Val Arg Pro Glu Val Pro
 675 680 685

Glu Ala Ile Arg Lys Cys Gln Arg Ala Gly Ile Thr Val Arg Met Val
 690 695 700

Thr Gly Asp Asn Ile Asn Thr Ala Arg Ala Ile Ala Ala Lys Cys Gly
 705 710 715 720

Ile Ile Gln Pro Gly Glu Asp Phe Leu Cys Leu Glu Gly Lys Glu Phe
 725 730 735

Asn Arg Arg Ile Arg Asn Glu Lys Gly Glu Ile Glu Gln Glu Arg Leu
 740 745 750

Asp Lys Val Trp Pro Lys Leu Arg Val Leu Ala Arg Ser Ser Pro Thr
 755 760 765

Asp Lys His Thr Leu Val Lys Gly Ile Ile Asp Ser Thr Thr Gly Glu
 770 775 780

Gln Arg Gln Val Val Ala Val Thr Gly Asp Gly Thr Asn Asp Gly Pro
785 790 795 800

Ala Leu Lys Lys Ala Asp Val Gly Phe Ala Met Gly Ile Ala Gly Thr
805 810 815

Asp Val Ala Lys Glu Ala Ser Asp Ile Ile Leu Thr Asp Asp Asn Phe
820 825 830

Thr Ser Ile Val Lys Ala Val Met Trp Gly Arg Asn Val Tyr Asp Ser
835 840 845

Ile Ser Lys Phe Leu Gln Phe Gln Leu Thr Val Asn Val Val Ala Val
850 855 860

Ile Val Ala Phe Thr Gly Ala Cys Ile Thr
865 870

<210> 32
<211> 1241
<212> PRT
<213> Homo sapiens

<400> 32
Met Thr Asn Pro Ser Asp Arg Val Leu Pro Ala Asn Ser Met Ala Glu
1 5 10 15

Ser Arg Glu Gly Asp Phe Gly Cys Thr Val Met Glu Leu Arg Lys Leu
20 25 30

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

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

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

Gly His Asn Val Ile Pro Pro Lys Lys Pro Lys Thr Phe Leu Glu Leu
85 90 95

Val Trp Glu Ala Leu Gln Asp Val Thr Leu Ile Ile Leu Glu Ile Ala
100 105 110

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

Asn Glu Leu Cys Gly Gln Val Ala Thr Thr Pro Glu Asp Glu Asn Glu
130 135 140

Ala Gln Ala Gly Trp Ile Glu Gly Ala Ala Ile Leu Phe Ser Val Ile
145 150 155 160

Ile Val Val Leu Val Thr Ala Phe Asn Asp Trp Ser Lys Glu Lys Gln
165 170 175

Phe Arg Gly Leu Gln Cys Arg Ile Glu Gln Glu Gln Lys Phe Ser Ile
180 185 190

Ile Arg Asn Gly Gln Leu Ile Gln Leu Pro Val Ala Glu Ile Val Val
195 200 205

Gly Asp Ile Ala Gln Val Lys Tyr Gly Asp Leu Leu Pro Ala Asp Gly
210 215 220

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

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

Leu Ser Gly Thr His Val Met Glu Gly Ser Gly Arg Met Val Val Thr
260 265 270

Ala Val Gly Val Asn Ser Gln Thr Gly Ile Ile Leu Thr Leu Leu Gly
275 280 285

Val Asn Glu Asp Asp Glu Gly Glu Lys Lys Lys Lys Gly Lys Lys Gln
290 295 300

Gly Val Pro Glu Asn Arg Asn Lys Ala Lys Thr Gln Asp Gly Val Ala

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

Arg Gln Val Gly Asn Lys Thr Glu Cys Ala Leu Leu Gly Phe Val Thr
530 535 540

Asp Leu Lys Gln Asp Tyr Gln Ala Val Arg Asn Glu Val Pro Glu Glu
545 550 555 560

Lys Leu Tyr Lys Val Tyr Thr Phe Asn Ser Val Arg Lys Ser Met Ser
565 570 575

Thr Val Ile Arg Asn Pro Asn Gly Gly Phe Arg Met Tyr Ser Lys Gly
580 585 590

Ala Ser Glu Ile Ile Leu Arg Lys Cys Asn Arg Ile Leu Asp Arg Lys
595 600 605

Gly Glu Ala Val Pro Phe Lys Asn Lys Asp Arg Asp Asp Met Val Arg
610 615 620

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

Ala Tyr Arg Asp Phe Asp Asp Thr Glu Pro Ser Trp Asp Asn Glu Asn
645 650 655

Glu Ile Leu Thr Glu Leu Thr Cys Ile Ala Val Val Gly Ile Glu Asp
660 665 670

Pro Val Arg Pro Glu Val Pro Asp Ala Ile Ala Lys Cys Lys Gln Ala
675 680 685

Gly Ile Thr Val Arg Met Val Thr Gly Asp Asn Ile Asn Thr Ala Arg
690 695 700

Ala Ile Ala Thr Lys Cys Gly Ile Leu Thr Pro Gly Asp Asp Phe Leu
705 710 715 720

Cys Leu Glu Gly Lys Glu Phe Asn Arg Leu Ile Arg Asn Glu Lys Gly
725 730 735

Glu Val Glu Gln Glu Lys Leu Asp Lys Ile Trp Pro Lys Leu Arg Val

740

745

750

Leu Ala Arg Ser Ser Pro Thr Asp Lys His Thr Leu Val Lys Gly Ile
 755 760 765

Ile Asp Ser Thr Val Gly Glu His Arg Gln Val Val Ala Val Thr Gly
 770 775 780

Asp Gly Thr Asn Asp Gly Pro Ala Leu Lys Lys Ala Asp Val Gly Phe
 785 790 795 800

Ala Met Gly Ile Ala Gly Thr Asp Val Ala Lys Glu Ala Ser Asp Ile
 805 810 815

Ile Leu Thr Asp Asp Asn Phe Thr Ser Ile Val Lys Ala Val Met Trp
 820 825 830

Gly Arg Asn Val Tyr Asp Ser Ile Ser Lys Phe Leu Gln Phe Gln Leu
 835 840 845

Thr Val Asn Val Val Ala Val Ile Val Ala Phe Thr Gly Ala Cys Ile
 850 855 860

Thr Gln Asp Ser Pro Leu Lys Ala Val Gln Met Leu Trp Val Asn Leu
 865 870 875 880

Ile Met Asp Thr Phe Ala Ser Leu Ala Leu Ala Thr Glu Pro Pro Thr
 885 890 895

Glu Ser Leu Leu Lys Arg Arg Pro Tyr Gly Arg Asn Lys Pro Leu Ile
 900 905 910

Ser Arg Thr Met Met Lys Asn Ile Leu Gly His Ala Phe Tyr Gln Leu
 915 920 925

Ile Val Ile Phe Ile Leu Val Phe Ala Gly Glu Lys Phe Phe Asp Ile
 930 935 940

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

Thr Ile Val Phe Asn Thr Phe Val Leu Met Gln Leu Phe Asn Glu Ile
965 970 975

Asn Ser Arg Lys Ile His Gly Glu Lys Asn Val Phe Ser Gly Ile Tyr
980 985 990

Arg Asn Ile Ile Phe Cys Ser Val Val Leu Gly Thr Phe Ile Cys Gln
995 1000 1005

Ile Phe Ile Val Glu Phe Gly Gly Lys Pro Phe Ser Cys Thr Ser
1010 1015 1020

Leu Ser Leu Ser Gln Trp Leu Trp Cys Leu Phe Ile Gly Ile Gly
1025 1030 1035

Glu Leu Leu Trp Gly Gln Phe Ile Ser Ala Ile Pro Thr Arg Ser
1040 1045 1050

Leu Lys Phe Leu Lys Glu Ala Gly His Gly Thr Thr Lys Glu Glu
1055 1060 1065

Ile Thr Lys Asp Ala Glu Gly Leu Asp Glu Ile Asp His Ala Glu
1070 1075 1080

Met Glu Leu Arg Arg Gly Gln Ile Leu Trp Phe Arg Gly Leu Asn
1085 1090 1095

Arg Ile Gln Thr Gln Ile Asp Val Ile Asn Thr Phe Gln Thr Gly
1100 1105 1110

Ala Ser Phe Lys Gly Val Leu Arg Arg Gln Asn Met Gly Gln His
1115 1120 1125

Leu Asp Val Lys Leu Val Pro Ser Ser Ser Tyr Ile Lys Val Val
1130 1135 1140

Lys Ala Phe His Ser Ser Leu His Glu Ser Ile Gln Lys Pro Tyr
1145 1150 1155

Asn Gln Lys Ser Ile His Ser Phe Met Thr His Pro Glu Phe Ala

1160

1165

1170

Ile Glu Glu Glu Leu Pro Arg Thr Pro Leu Leu Asp Glu Glu Glu
 1175 1180 1185

Glu Glu Asn Pro Asp Lys Ala Ser Lys Phe Gly Thr Arg Val Leu
 1190 1195 1200

Leu Leu Asp Gly Glu Val Thr Pro Tyr Ala Asn Thr Asn Asn Asn
 1205 1210 1215

Ala Val Asp Cys Asn Gln Val Gln Leu Pro Gln Ser Asp Ser Ser
 1220 1225 1230

Leu Gln Ser Leu Glu Thr Ser Val
 1235 1240

<210> 33

<211> 193

<212> PRT

<213> Homo sapiens

<400> 33

Gly Pro Ile Phe Asn Ala Ser Val His Ser Asp Thr Pro Ser Val Ile
 1 5 10 15

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

Ala Leu Asp Pro Asp Asp Met Ala Phe Asp Val Ser Trp Phe Ala Val
 35 40 45

His Ser Phe Gly Leu Asp Lys Ala Pro Val Leu Leu Ser Ser Leu Asp
 50 55 60

Arg Lys Gly Ile Val Thr Thr Ser Arg Arg Asp Trp Lys Ser Asp Leu
 65 70 75 80

Ser Leu Glu Arg Val Ser Val Leu Glu Phe Leu Leu Gln Val His Gly
 85 90 95

Ser Glu Asp Gln Asp Phe Gly Asn Tyr Tyr Cys Ser Val Thr Pro Trp

100

105

110

Val Lys Ser Pro Thr Gly Ser Trp Gln Lys Glu Ala Glu Ile His Ser
 115 120 125

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

Tyr Pro Leu Leu Ile Gly Val Gly Leu Ser Thr Val Ile Gly Leu Leu
 145 150 155 160

Ser Cys Leu Ile Gly Tyr Cys Ser Ser His Trp Cys Cys Lys Lys Glu
 165 170 175

Val Gln Glu Thr Arg Arg Glu Arg Arg Arg Leu Met Ser Met Glu Met
 180 185 190

Asp

<210> 34

<211> 1021

<212> PRT

<213> Homo sapiens

<400> 34

Met Ala Gly Ile Ser Tyr Val Ala Ser Phe Phe Leu Leu Leu Thr Lys
 1 5 10 15

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

Arg Ala Glu Gly Tyr Pro Val Ser Ile Gly Cys Asn Val Thr Gly His
 35 40 45

Gln Gly Pro Ser Glu Gln His Phe Gln Trp Ser Val Tyr Leu Pro Thr
 50 55 60

Asn Pro Thr Gln Glu Val Gln Ile Ile Ser Thr Lys Asp Ala Ala Phe
 65 70 75 80

Ser Tyr Ala Val Tyr Thr Gln Arg Val Arg Ser Gly Asp Val Tyr Val

85

90

95

Glu Arg Val Gln Gly Asn Ser Val Leu Leu His Ile Ser Lys Leu Gln
 100 105 110

Met Lys Asp Ala Gly Glu Tyr Glu Cys His Thr Pro Asn Thr Asp Glu
 115 120 125

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

Asp Thr Leu Ser Ala Thr Met Ser Ser Gln Thr Leu Gly Lys Glu Glu
 145 150 155 160

Gly Glu Pro Leu Ala Leu Thr Cys Glu Ala Ser Lys Ala Thr Ala Gln
 165 170 175

His Thr His Leu Ser Val Thr Trp Tyr Leu Thr Gln Asp Gly Gly Gly
 180 185 190

Ser Gln Ala Thr Glu Ile Ile Ser Leu Ser Lys Asp Phe Ile Leu Val
 195 200 205

Pro Gly Pro Leu Tyr Thr Glu Arg Phe Ala Ala Ser Asp Val Gln Leu
 210 215 220

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

Ser Ser Asp Gln Gly Gln Leu Phe Cys Glu Ala Thr Glu Trp Ile Gln
 245 250 255

Asp Pro Asp Glu Thr Trp Met Phe Ile Thr Lys Lys Gln Thr Asp Gln
 260 265 270

Thr Thr Leu Arg Ile Gln Pro Ala Val Lys Asp Phe Gln Val Asn Ile
 275 280 285

Thr Ala Asp Ser Leu Phe Ala Glu Gly Lys Pro Leu Glu Leu Val Cys
 290 295 300

Leu Val Val Ser Ser Gly Arg Asp Pro Gln Leu Gln Gly Ile Trp Phe
305 310 315 320

Phe Asn Gly Thr Glu Ile Ala His Ile Asp Ala Gly Gly Val Leu Gly
325 330 335

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

Ser Lys Leu Gly Pro Lys Ala Phe Ser Leu Lys Ile Phe Ser Leu Gly
355 360 365

Pro Glu Asp Glu Gly Ala Tyr Arg Cys Val Val Ala Glu Val Met Lys
370 375 380

Thr Arg Thr Gly Ser Trp Gln Val Leu Gln Arg Lys Gln Ser Pro Asp
385 390 395 400

Ser His Val His Leu Arg Lys Pro Ala Ala Arg Ser Val Val Met Ser
405 410 415

Thr Lys Asn Lys Gln Gln Val Val Trp Glu Gly Glu Thr Leu Ala Phe
420 425 430

Leu Cys Lys Ala Gly Gly Ala Glu Ser Pro Leu Ser Val Ser Trp Trp
435 440 445

His Ile Pro Arg Asp Gln Thr Gln Pro Glu Phe Val Ala Gly Met Gly
450 455 460

Gln Asp Gly Ile Val Gln Leu Gly Ala Ser Tyr Gly Val Pro Ser Tyr
465 470 475 480

His Gly Asn Thr Arg Leu Glu Lys Met Asp Trp Ala Thr Phe Gln Leu
485 490 495

Glu Ile Thr Phe Thr Ala Ile Thr Asp Ser Gly Thr Tyr Glu Cys Arg
500 505 510

Val Ser Glu Lys Ser Arg Asn Gln Ala Arg Asp Leu Ser Trp Thr Gln

515

520

525

Lys Ile Ser Val Thr Val Lys Ser Leu Glu Ser Ser Leu Gln Val Ser
 530 535 540

Leu Met Ser Arg Gln Pro Gln Val Met Leu Thr Asn Thr Phe Asp Leu
 545 550 555 560

Ser Cys Val Val Arg Ala Gly Tyr Ser Asp Leu Lys Val Pro Leu Thr
 565 570 575

Val Thr Trp Gln Phe Gln Pro Ala Ser Ser His Ile Phe His Gln Leu
 580 585 590

Ile Arg Ile Thr His Asn Gly Thr Ile Glu Trp Gly Asn Phe Leu Ser
 595 600 605

Arg Phe Gln Lys Lys Thr Lys Val Ser Gln Ser Leu Phe Arg Ser Gln
 610 615 620

Leu Leu Val His Asp Ala Thr Glu Glu Glu Thr Gly Val Tyr Gln Cys
 625 630 635 640

Glu Val Glu Val Tyr Asp Arg Asn Ser Leu Tyr Asn Asn Arg Pro Pro
 645 650 655

Arg Ala Ser Ala Ile Ser His Pro Leu Arg Ile Ala Val Thr Leu Pro
 660 665 670

Glu Ser Lys Leu Lys Val Asn Ser Arg Ser Gln Val Gln Glu Leu Ser
 675 680 685

Ile Asn Ser Asn Thr Asp Ile Glu Cys Ser Ile Leu Ser Arg Ser Asn
 690 695 700

Gly Asn Leu Gln Leu Ala Ile Ile Trp Tyr Phe Ser Pro Val Ser Thr
 705 710 715 720

Asn Ala Ser Trp Leu Lys Ile Leu Glu Met Asp Gln Thr Asn Val Ile
 725 730 735

Lys Thr Gly Asp Glu Phe His Thr Pro Gln Arg Lys Gln Lys Phe His
740 745 750

Thr Glu Lys Val Ser Gln Asp Leu Phe Gln Leu His Ile Leu Asn Val
755 760 765

Glu Asp Ser Asp Arg Gly Lys Tyr His Cys Ala Val Glu Glu Trp Leu
770 775 780

Leu Ser Thr Asn Gly Thr Trp His Lys Leu Gly Glu Lys Lys Ser Gly
785 790 795 800

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

Lys Val Tyr Trp Thr Glu Asn Val Thr Glu His Arg Glu Val Ala Ile
820 825 830

Arg Cys Ser Leu Glu Ser Val Gly Ser Ser Ala Thr Leu Tyr Ser Val
835 840 845

Met Trp Tyr Trp Asn Arg Glu Asn Ser Gly Ser Lys Leu Leu Val His
850 855 860

Leu Gln His Asp Gly Leu Leu Glu Tyr Gly Glu Glu Gly Leu Arg Arg
865 870 875 880

His Leu His Cys Tyr Arg Ser Ser Ser Thr Asp Phe Val Leu Lys Leu
885 890 895

His Gln Val Glu Met Glu Asp Ala Gly Met Tyr Trp Cys Arg Val Ala
900 905 910

Glu Trp Gln Leu His Gly His Pro Ser Lys Trp Ile Asn Gln Ala Ser
915 920 925

Asp Glu Ser Gln Arg Met Val Leu Thr Val Leu Pro Ser Glu Pro Thr
930 935 940

Leu Pro Ser Arg Ile Cys Ser Ser Ala Pro Leu Leu Tyr Phe Leu Phe

945		950		955		960
Ile Cys Pro Phe Val Leu Leu Leu Leu Leu Leu Ile Ser Leu Leu Cys						
		965		970		975
Leu Tyr Trp Lys Ala Arg Lys Leu Ser Thr Leu Arg Ser Asn Thr Arg						
		980		985		990
Lys Glu Lys Ala Leu Trp Val Asp Leu Lys Glu Ala Gly Gly Val Thr						
		995		1000		1005
Thr Asn Arg Arg Glu Asp Glu Glu Glu Asp Glu Gly Asn						
		1010		1015		1020

<210> 35
 <211> 20
 <212> PRT
 <213> Homo sapiens

<400> 35
 Met Ala Gly Ile Ser Tyr Val Ala Ser Phe Phe Leu Leu Leu Thr Lys
 1 5 10 15

Leu Ser Ile Gly
 20

<210> 36
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 36
 cgttggcagt ccgccttaac

20

<210> 37
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 37
catagtcact gacgttgacg 20

<210> 38
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 38
ttgtggagct tgcaagcacc 20

<210> 39
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 39
gttctttatg tggagctcca 20

<210> 40
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 40
tatcccttgc tgatcggcgt 20

<210> 41
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 41

gctgcagtac ccgatgagac

20

<210> 42

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 42

Glu His Ser Ala Gly Gly Gly Gly Ser Asp Tyr Lys Asp Asp Asp Asp
1 5 10 15

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

Thr Ser Gly Pro Ile Phe
35

<210> 43

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 43

Glu His Ser Ala Gly Gly Gly Gly Ser Asp Tyr Lys Asp Asp Asp Asp
1 5 10 15

Lys Gly Gly Gly Gly Ser Ile Glu Ile Asp Phe Gln Thr Ser Gly Pro
20 25 30

Ile Phe

<210> 44

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic

polypeptide

<400> 44

Glu His Ser Ala Gly Gly Gly Gly Ser Asp Tyr Lys Asp Asp Asp Asp
1 5 10 15

Lys Gly Gly Gly Gly Ser Phe Gln Thr Ser Gly Pro Ile Phe
20 25 30

<210> 45

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 45

Glu His Ser Ala Gly Gly Gly Gly Ser Asp Tyr Lys Asp Asp Asp Asp
1 5 10 15

Lys Gly Gly Gly Gly Ser Gly Pro Ile Phe
20 25

<210> 46

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 46

Phe Ile Thr Val Lys Met Asp Thr Leu Asp Pro Arg Ser Phe Leu Leu
1 5 10 15

Arg Asn Pro Asn Asp Lys Tyr Glu Pro Phe Trp Glu Asp Glu Glu Lys
20 25 30

Asn Glu Ser Gly Ser Asp Lys Thr His Thr
35 40