

SEQUENCE LISTING

<110> PolyBioCept AB

<120> EXPANSION OF LYMPHOCYTES WITH A CYTOKINE COMPOSITION FOR ACTIVE CELLULAR IMMUNOTHERAPY

<130> 7027/P/1003-W02

<150> DE 10 2014 211 167.6

<151> 2014-06-11

<160> 15

<170> PatentIn version 3.5

<210> 1

<211> 153

<212> PRT

<213> Homo sapiens

<400> 1

Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
1 5 10 15

Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
20 25 30

Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
35 40 45

Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
50 55 60

Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
65 70 75 80

Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
85 90 95

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

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

Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
130 135 140

Cys Gln Ser Ile Ile Ser Thr Leu Thr
145 150

<210> 2
<211> 162
<212> PRT
<213> Homo sapiens

<400> 2

Met Arg Ile Ser Lys Pro His Leu Arg Ser Ile Ser Ile Gln Cys Tyr
1 5 10 15

Leu Cys Leu Leu Leu Asn Ser His Phe Leu Thr Glu Ala Gly Ile His
20 25 30

Val Phe Ile Leu Gly Cys Phe Ser Ala Gly Leu Pro Lys Thr Glu Ala
35 40 45

Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp Leu Ile
50 55 60

Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His
65 70 75 80

Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln
85 90 95

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

Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn Gly Asn Val
115 120 125

Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys Asn Ile
130 135 140

Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn
145 150 155 160

Thr Ser

<210> 3
<211> 155
<212> PRT
<213> Homo sapiens

<400> 3

Met Glu Arg Ile Val Ile Cys Leu Met Val Ile Phe Leu Gly Thr Leu
1 5 10 15

Val His Lys Ser Ser Ser Gln Gly Gln Asp Arg His Met Ile Arg Met
20 25 30

Arg Gln Leu Ile Asp Ile Val Asp Gln Leu Lys Asn Tyr Val Asn Asp
35 40 45

Leu Val Pro Glu Phe Leu Pro Ala Pro Glu Asp Val Glu Thr Asn Cys
50 55 60

Glu Trp Ser Ala Phe Ser Cys Phe Gln Lys Ala Gln Leu Lys Ser Ala
65 70 75 80

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

Lys Arg Lys Pro Pro Ser Thr Asn Ala Gly Arg Arg Gln Lys His Arg
100 105 110

Leu Thr Cys Pro Ser Cys Asp Ser Tyr Glu Lys Lys Pro Pro Lys Glu
115 120 125

Phe Leu Glu Arg Phe Lys Ser Leu Leu Gln Lys Met Ile His Gln His
130 135 140

Leu Ser Ser Arg Thr His Gly Ser Glu Asp Ser
145 150 155

<210> 4

<211> 180
<212> PRT
<213> Homo sapiens

<400> 4

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

Gly Pro Gly Gly Pro Gly Ile Pro Asp Gly Pro Gly Gly Asn Ala Gly
20 25 30

Gly Pro Gly Glu Ala Gly Ala Thr Gly Gly Arg Gly Pro Arg Gly Ala
35 40 45

Gly Ala Ala Arg Ala Ser Gly Pro Gly Gly Gly Ala Pro Arg Gly Pro
50 55 60

His Gly Gly Ala Ala Ser Gly Leu Asn Gly Cys Cys Arg Cys Gly Ala
65 70 75 80

Arg Gly Pro Glu Ser Arg Leu Leu Glu Phe Tyr Leu Ala Met Pro Phe
85 90 95

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

Ala Pro Pro Leu Pro Val Pro Gly Val Leu Leu Lys Glu Phe Thr Val
115 120 125

Ser Gly Asn Ile Leu Thr Ile Arg Leu Thr Ala Ala Asp His Arg Gln
130 135 140

Leu Gln Leu Ser Ile Ser Ser Cys Leu Gln Gln Leu Ser Leu Leu Met
145 150 155 160

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

Gly Gln Arg Arg
180

<210> 5
<211> 142
<212> PRT
<213> Homo sapiens

<400> 5

Met Gly Ala Pro Thr Leu Pro Pro Ala Trp Gln Pro Phe Leu Lys Asp
1 5 10 15

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

Cys Thr Pro Glu Arg Met Ala Glu Ala Gly Phe Ile His Cys Pro Thr
35 40 45

Glu Asn Glu Pro Asp Leu Ala Gln Cys Phe Phe Cys Phe Lys Glu Leu
50 55 60

Glu Gly Trp Glu Pro Asp Asp Asp Pro Ile Glu Glu His Lys Lys His
65 70 75 80

Ser Ser Gly Cys Ala Phe Leu Ser Val Lys Lys Gln Phe Glu Glu Leu
85 90 95

Thr Leu Gly Glu Phe Leu Lys Leu Asp Arg Glu Arg Ala Lys Asn Lys
100 105 110

Ile Ala Lys Glu Thr Asn Asn Lys Lys Lys Glu Phe Glu Glu Thr Ala
115 120 125

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

<210> 6
<211> 630
<212> PRT
<213> Homo sapiens

<400> 6

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

Ala Leu Gly Ser Leu Leu Phe Leu Leu Phe Ser Leu Gly Trp Val Gln
20 25 30

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

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

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

Arg Val Arg Glu Leu Ala Val Ala Leu Ala Gln Lys Asn Val Lys Leu
85 90 95

Ser Thr Glu Gln Leu Arg Cys Leu Ala His Arg Leu Ser Glu Pro Pro
100 105 110

Glu Asp Leu Asp Ala Leu Pro Leu Asp Leu Leu Leu Phe Leu Asn Pro
115 120 125

Asp Ala Phe Ser Gly Pro Gln Ala Cys Thr Arg Phe Phe Ser Arg Ile
130 135 140

Thr Lys Ala Asn Val Asp Leu Leu Pro Arg Gly Ala Pro Glu Arg Gln
145 150 155 160

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

Leu Ser Glu Ala Asp Val Arg Ala Leu Gly Gly Leu Ala Cys Asp Leu
180 185 190

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

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

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

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

Gln Pro Ile Ile Arg Ser Ile Pro Gln Gly Ile Val Ala Ala Trp Arg
260 265 270

Gln Arg Ser Ser Arg Asp Pro Ser Trp Arg Gln Pro Glu Arg Thr Ile
275 280 285

Leu Arg Pro Arg Phe Arg Arg Glu Val Glu Lys Thr Ala Cys Pro Ser
290 295 300

Gly Lys Lys Ala Arg Glu Ile Asp Glu Ser Leu Ile Phe Tyr Lys Lys
305 310 315 320 325

Trp Glu Leu Glu Ala Cys Val Asp Ala Ala Leu Leu Ala Thr Gln Met
325 330 335

Asp Arg Val Asn Ala Ile Pro Phe Thr Tyr Glu Gln Leu Asp Val Leu
340 345 350

Lys His Lys Leu Asp Glu Leu Tyr Pro Gln Gly Tyr Pro Glu Ser Val
355 360 365

Ile Gln His Leu Gly Tyr Leu Phe Leu Lys Met Ser Pro Glu Asp Ile
370 375 380

Arg Lys Trp Asn Val Thr Ser Leu Glu Thr Leu Lys Ala Leu Leu Glu
385 390 395 400

Val Asn Lys Gly His Glu Met Ser Pro Gln Ala Pro Arg Arg Pro Leu
405 410 415

Pro Gln Val Ala Thr Leu Ile Asp Arg Phe Val Lys Gly Arg Gly Gln
420 425 430

Leu Asp Lys Asp Thr Leu Asp Thr Leu Thr Ala Phe Tyr Pro Gly Tyr
435 440 445

Leu Cys Ser Leu Ser Pro Glu Glu Leu Ser Ser Val Pro Pro Ser Ser
450 455 460

Ile Trp Ala Val Arg Pro Gln Asp Leu Asp Thr Cys Asp Pro Arg Gln
465 470 475 480

Leu Asp Val Leu Tyr Pro Lys Ala Arg Leu Ala Phe Gln Asn Met Asn
485 490 495

Gly Ser Glu Tyr Phe Val Lys Ile Gln Ser Phe Leu Gly Gly Ala Pro
500 505 510

Thr Glu Asp Leu Lys Ala Leu Ser Gln Gln Asn Val Ser Met Asp Leu
515 520 525

Ala Thr Phe Met Lys Leu Arg Thr Asp Ala Val Leu Pro Leu Thr Val
530 535 540

Ala Glu Val Gln Lys Leu Leu Gly Pro His Val Glu Gly Leu Lys Ala
545 550 555 560

Glu Glu Arg His Arg Pro Val Arg Asp Trp Ile Leu Arg Gln Arg Gln
565 570 575

Asp Asp Leu Asp Thr Leu Gly Leu Gly Leu Gln Gly Gly Ile Pro Asn
580 585 590

Gly Tyr Leu Val Leu Asp Leu Ser Met Gln Glu Ala Leu Ser Gly Thr
595 600 605

Pro Cys Leu Leu Gly Pro Gly Pro Val Leu Thr Val Leu Ala Leu Leu
610 615 620

Leu Ala Ser Thr Leu Ala
625 630

<210> 7

<211> 1210

<212> PRT

<213> Homo sapiens

<400> 7

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

Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val Cys Gln
20 25 30

Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe
35 40 45

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

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

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val
85 90 95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr
100 105 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn
115 120 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu
130 135 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu
145 150 155 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met
165 170 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro
180 185 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln
195 200 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg

210

215

220

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

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

Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro
 260 265 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly
 275 280 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His
 290 295 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu
 305 310 315 320

Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro Cys Arg Lys Val
 325 330 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn
 340 345 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp
 355 360 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr
 370 375 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu
 385 390 395 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp
 405 410 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln
 420 425 430

His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu
435 440 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser
450 455 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu
465 470 475 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu
485 490 495

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

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn
515 520 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly
530 535 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro
545 550 555 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro
565 570 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val
580 585 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp
595 600 605

Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys
610 615 620

Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys Pro Thr Asn Gly
625 630 635 640

Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly Ala Leu Leu Leu

645

650

655

Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg Arg His
 660 665 670

Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu
 675 680 685

Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala Leu Leu
 690 695 700

Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser
 705 710 715 720

Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu Gly Glu
 725 730 735

Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala Thr Ser
 740 745 750

Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met Ala Ser
 755 760 765

Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser
 770 775 780

Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly Cys Leu Leu Asp
 785 790 795 800

Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu Leu Asn
 805 810 815

Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp Arg Arg
 820 825 830

Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro
 835 840 845

Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Gly Ala
 850 855 860

Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile Lys Trp
865 870 875 880

Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln Ser Asp
885 890 895

Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ser
900 905 910

Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ser Ser Ile Leu Glu
915 920 925

Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr
930 935 940

Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys
945 950 955 960

Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala Arg Asp Pro Gln
965 970 975

Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro
980 985 990

Thr Asp Ser Asn Phe Tyr Arg Ala Leu Met Asp Glu Glu Asp Met Asp
995 1000 1005

Asp Val Val Asp Ala Asp Glu Tyr Leu Ile Pro Gln Gln Gly Phe
1010 1015 1020

Phe Ser Ser Pro Ser Thr Ser Arg Thr Pro Leu Leu Ser Ser Leu
1025 1030 1035

Ser Ala Thr Ser Asn Asn Ser Thr Val Ala Cys Ile Asp Arg Asn
1040 1045 1050

Gly Leu Gln Ser Cys Pro Ile Lys Glu Asp Ser Phe Leu Gln Arg
1055 1060 1065

Tyr Ser Ser Asp Pro Thr Gly Ala Leu Thr Glu Asp Ser Ile Asp

1070

1075

1080

Asp Thr Phe Leu Pro Val Pro Glu Tyr Ile Asn Gln Ser Val Pro
 1085 1090 1095

Lys Arg Pro Ala Gly Ser Val Gln Asn Pro Val Tyr His Asn Gln
 1100 1105 1110

Pro Leu Asn Pro Ala Pro Ser Arg Asp Pro His Tyr Gln Asp Pro
 1115 1120 1125

His Ser Thr Ala Val Gly Asn Pro Glu Tyr Leu Asn Thr Val Gln
 1130 1135 1140

Pro Thr Cys Val Asn Ser Thr Phe Asp Ser Pro Ala His Trp Ala
 1145 1150 1155

Gln Lys Gly Ser His Gln Ile Ser Leu Asp Asn Pro Asp Tyr Gln
 1160 1165 1170

Gln Asp Phe Phe Pro Lys Glu Ala Lys Pro Asn Gly Ile Phe Lys
 1175 1180 1185

Gly Ser Thr Ala Glu Asn Ala Glu Tyr Leu Arg Val Ala Pro Gln
 1190 1195 1200

Ser Ser Glu Phe Ile Gly Ala
 1205 1210

<210> 8

<211> 510

<212> PRT

<213> Homo sapiens

<400> 8

Met Glu Ser Arg Gly Arg Arg Cys Pro Glu Met Ile Ser Val Leu Gly
 1 5 10 15

Pro Ile Ser Gly His Val Leu Lys Ala Val Phe Ser Arg Gly Asp Thr
 20 25 30

Pro Val Leu Pro His Glu Thr Arg Leu Leu Gln Thr Gly Ile His Val
35 40 45

Arg Val Ser Gln Pro Ser Leu Ile Leu Val Ser Gln Tyr Thr Pro Asp
50 55 60

Ser Thr Pro Cys His Arg Gly Asp Asn Gln Leu Gln Val Gln His Thr
65 70 75 80

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

Pro Thr Gly Arg Ser Ile Cys Pro Ser Gln Glu Pro Met Ser Ile Tyr
100 105 110

Val Tyr Ala Leu Pro Leu Lys Met Leu Asn Ile Pro Ser Ile Asn Val
115 120 125

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

Ala Asp Ala Val Ile His Ala Ser Gly Lys Gln Met Trp Gln Ala Arg
145 150 155 160

Leu Thr Val Ser Gly Leu Ala Trp Thr Arg Gln Gln Asn Gln Trp Lys
165 170 175

Glu Pro Asp Val Tyr Tyr Thr Ser Ala Phe Val Phe Pro Thr Lys Asp
180 185 190

Val Ala Leu Arg His Val Val Cys Ala His Glu Leu Val Cys Ser Met
195 200 205

Glu Asn Thr Arg Ala Thr Lys Met Gln Val Ile Gly Asp Gln Tyr Val
210 215 220

Lys Val Tyr Leu Glu Ser Phe Cys Glu Asp Val Pro Ser Gly Lys Leu
225 230 235 240

Phe Met His Val Thr Leu Gly Ser Asp Val Glu Glu Asp Leu Thr Met
245 250 255

Thr Arg Asn Pro Gln Pro Phe Met Arg Pro His Glu Arg Asn Gly Phe
260 265 270

Thr Val Leu Cys Pro Lys Asn Met Ile Ile Lys Pro Gly Lys Ile Ser
275 280 285

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

Leu Cys Pro Lys Ser Ile Pro Gly Leu Ser Ile Ser Gly Asn Leu Leu
305 310 315 320

Met Asn Gly Gln Gln Ile Phe Leu Glu Val Gln Ala Ile Arg Glu Thr
325 330 335

Val Glu Leu Arg Gln Tyr Asp Pro Val Ala Ala Leu Phe Phe Phe Asp
340 345 350

Ile Asp Leu Leu Leu Gln Arg Gly Pro Gln Tyr Ser Glu His Pro Thr
355 360 365

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

Trp Asp Arg His Asp Glu Gly Ala Ala Gln Gly Asp Asp Asp Val Trp
385 390 395 400

Thr Ser Gly Ser Asp Ser Asp Glu Glu Leu Val Thr Thr Glu Arg Lys
405 410 415

Thr Pro Arg Val Thr Gly Gly Gly Ala Met Ala Gly Ala Ser Thr Ser
420 425 430

Ala Gly Arg Lys Arg Lys Ser Ala Ser Ser Ala Thr Ala Cys Thr Ser
435 440 445

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

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

Val Phe Thr Trp Pro Pro Trp Gln Ala Gly Ile Leu Ala Arg Asn Leu
485 490 495

Val Pro Met Val Ala Thr Val Gln Gly Gln Asn Leu Lys Tyr
500 505 510

<210> 9
<211> 944
<212> PRT
<213> Homo sapiens

<400> 9

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

Glu Glu Val Pro Ser Thr Ser Val Val Gln Glu Gln Val Ser Ala Gly
20 25 30

Asp Trp Glu Asn Val Leu Ile Glu Leu Ser Asp Ser Ser Ser Glu Lys
35 40 45

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

Lys Arg Val Asp His Asp Ala Gly Gly Ser Ala Pro Ala Arg Pro Met
65 70 75 80

Leu Pro Pro Gln Pro Asp Leu Pro Gly Arg Glu Ala Ile Leu Arg Arg
85 90 95

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

Thr Arg Ile Asp Thr Arg Ala Ile Asp Gln Phe Phe Gly Ser Gln Ile
115 120 125

Ser Asn Thr Glu Met Tyr Ile Met Tyr Ala Met Ala Ile Arg Gln Ala
130 135 140

Ile Arg Asp Arg Arg Arg Asn Pro Ala Ser Arg Arg Asp Gln Ala Lys
145 150 155 160

Trp Arg Leu Gln Thr Leu Ala Ala Gly Trp Pro Met Gly Tyr Gln Ala
165 170 175

Tyr Ser Ser Trp Met Tyr Ser Tyr Thr Asp His Gln Thr Thr Pro Thr
180 185 190

Phe Val His Leu Gln Ala Thr Leu Gly Cys Thr Gly Gly Arg Arg Cys
195 200 205

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

Gly Asp Arg Gln Trp Leu Tyr Val Gln Ser Ser Val Gly Asn Ile Val
225 230 235 240

Gln Ser Cys Asn Pro Arg Tyr Ser Ile Phe Phe Asp Tyr Met Ala Ile
245 250 255

His Arg Ser Leu Thr Lys Ile Trp Glu Glu Val Leu Thr Pro Asp Gln
260 265 270

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

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

Gln Thr Pro Trp Ile Asp Asp Asn Pro Ser Thr Glu Thr Ala Gln Ala
305 310 315 320

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

Arg Thr Glu Gly Glu His Val Glu Gly Ala Thr Gly Glu Thr Arg Glu
340 345 350

Glu Ser Glu Asp Thr Glu Ser Asp Gly Asp Asp Glu Asp Leu Pro Cys

355

360

365

Ile Val Ser Arg Gly Gly Pro Lys Val Lys Arg Pro Pro Ile Phe Ile
 370 375 380

Arg Arg Leu His Arg Leu Leu Met Arg Ala Gly Lys Arg Thr Glu
 385 390 395 400

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

Pro Arg Pro Pro Val Pro Lys Pro Arg Pro Glu Val Pro Gln Ser Asp
 420 425 430

Glu Thr Ala Thr Ser His Gly Ser Ala Gln Val Pro Glu Pro Pro Thr
 435 440 445

Ile His Leu Ala Ala Gln Gly Met Ala Tyr Pro Leu His Glu Gln His
 450 455 460

Gly Met Ala Pro Cys Pro Val Ala Gln Ala Pro Pro Thr Pro Leu Pro
 465 470 475 480

Pro Val Ser Pro Gly Asp Gln Leu Pro Gly Val Phe Ser Asp Gly Arg
 485 490 495

Val Ala Cys Ala Pro Val Pro Ala Pro Ala Gly Pro Ile Val Arg Pro
 500 505 510

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

Arg Pro Gln His Met Pro Val Glu Pro Val Pro Val Pro Thr Val Ala
 530 535 540

Leu Glu Arg Pro Val Tyr Pro Lys Pro Val Arg Pro Ala Pro Pro Lys
 545 550 555 560

Ile Ala Met Gln Gly Pro Gly Glu Thr Ser Gly Ile Arg Arg Ala Arg
 565 570 575

Glu Arg Trp Arg Pro Ala Pro Trp Thr Pro Asn Pro Pro Arg Ser Pro
580 585 590

Ser Gln Met Ser Val Arg Asp Arg Leu Ala Arg Leu Arg Ala Glu Ala
595 600 605

Gln Val Lys Gln Ala Ser Val Glu Val Gln Pro Pro Gln Leu Thr Gln
610 615 620

Val Ser Pro Gln Gln Pro Met Glu Gly Pro Leu Val Pro Glu Gln Gln
625 630 635 640

Met Phe Pro Gly Ala Pro Phe Ser Gln Val Ala Asp Val Val Arg Ala
645 650 655

Pro Gly Val Pro Ala Met Gln Pro Gln Tyr Phe Asp Leu Pro Leu Ile
660 665 670

Gln Pro Ile Ser Gln Gly Ala Pro Val Ala Pro Leu Arg Ala Ser Met
675 680 685

Gly Pro Val Pro Pro Val Pro Ala Thr Gln Pro Gln Tyr Phe Asp Ile
690 695 700

Pro Leu Thr Glu Pro Ile Asn Gln Gly Ala Ser Ala Ala His Phe Leu
705 710 715 720

Pro Gln Gln Pro Met Glu Gly Pro Leu Val Pro Glu Gln Trp Met Phe
725 730 735

Pro Gly Ala Ala Leu Ser Gln Ser Val Arg Pro Gly Val Ala Gln Ser
740 745 750

Gln Tyr Phe Asp Leu Pro Leu Thr Gln Pro Ile Asn His Gly Ala Pro
755 760 765

Ala Ala His Phe Leu His Gln Pro Pro Met Glu Gly Pro Trp Val Pro
770 775 780

Glu Gln Trp Met Phe Gln Gly Ala Pro Pro Ser Gln Gly Thr Asp Val

Arg Arg Gly Gly Asp Asn His Gly Arg Gly Arg Gly Arg Gly Arg Gly
35 40 45

Arg Gly Gly Gly Arg Pro Gly Ala Pro Gly Gly Ser Gly Ser Gly Pro
50 55 60

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

Gly Cys Lys Gly Thr His Gly Gly Thr Gly Ala Gly Ala Gly Ala Gly
85 90 95

Gly Ala Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly Ala Gly
100 105 110

Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly
115 120 125

Gly Ala Gly Ala Gly Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Ala
130 135 140

Gly Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly Gly Ala Gly Ala Gly
145 150 155 160

Gly Gly Ala Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly
165 170 175

Ala Gly Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly Gly
180 185 190

Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly Ala Gly Gly Ala Gly
195 200 205

Gly Ala Gly Gly Ala Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala
210 215 220

Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Ala Gly Ala Gly Gly Ala
225 230 235 240

Gly Ala Gly Gly Ala Gly Ala Gly Gly Ala Gly Gly Ala Gly Ala Gly
245 250 255

Gly Ala Gly Gly Ala Gly Ala Gly Gly Ala Gly Gly Ala Gly Ala Gly
260 265 270

Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly Gly Ala Gly
275 280 285

Ala Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Ala Gly Gly Ala Gly
290 295 300

Ala Gly Gly Ala Gly Gly Ala Gly Ala Gly Gly Gly Ala Gly Ala Gly
305 310 315 320

Gly Ala Gly Ala Gly Gly Gly Gly Arg Gly Arg Gly Gly Ser Gly Gly
325 330 335

Arg Gly Arg Gly Gly Ser Gly Gly Arg Gly Arg Gly Gly Ser Gly Gly
340 345 350

Arg Arg Gly Arg Gly Arg Glu Arg Ala Arg Gly Gly Ser Arg Glu Arg
355 360 365

Ala Arg Gly Arg Gly Arg Gly Arg Gly Glu Lys Arg Pro Arg Ser Pro
370 375 380

Ser Ser Gln Ser Ser Ser Ser Gly Ser Pro Pro Arg Arg Pro Pro Pro
385 390 395 400

Gly Arg Arg Pro Phe Phe His Pro Val Gly Glu Ala Asp Tyr Phe Glu
405 410 415

Tyr His Gln Glu Gly Gly Pro Asp Gly Glu Pro Asp Val Pro Pro Gly
420 425 430

Ala Ile Glu Gln Gly Pro Ala Asp Asp Pro Gly Glu Gly Pro Ser Thr
435 440 445

Gly Pro Arg Gly Gln Gly Asp Gly Gly Arg Arg Lys Lys Gly Gly Trp
450 455 460

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

Ile Ala Glu Gly Leu Arg Ala Leu Leu Ala Arg Ser His Val Glu Arg
 485 490 495

Thr Thr Asp Glu Gly Thr Trp Val Ala Gly Val Phe Val Tyr Gly Gly
 500 505 510

Ser Lys Thr Ser Leu Tyr Asn Leu Arg Arg Gly Thr Ala Leu Ala Ile
 515 520 525

Pro Gln Cys Arg Leu Thr Pro Leu Ser Arg Leu Pro Phe Gly Met Ala
 530 535 540

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

Tyr Phe Met Val Phe Leu Gln Thr His Ile Phe Ala Glu Val Leu Lys
 565 570 575

Asp Ala Ile Lys Asp Leu Val Met Thr Lys Pro Ala Pro Thr Cys Asn
 580 585 590

Ile Arg Val Thr Val Cys Ser Phe Asp Asp Gly Val Asp Leu Pro Pro
 595 600 605

Trp Phe Pro Pro Met Val Glu Gly Ala Ala Ala Glu Gly Asp Asp Gly
 610 615 620

Asp Asp Gly Asp Glu Gly Gly Asp Gly Asp Glu Gly Glu Glu Gly Gln
 625 630 635 640

Glu

<210> 11
 <211> 505
 <212> PRT
 <213> Homo sapiens
 <400> 11

Met Ser Leu Trp Leu Pro Ser Glu Ala Thr Val Tyr Leu Pro Pro Val
1 5 10 15

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

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

Tyr Phe Pro Ile Lys Lys Pro Asn Asn Asn Lys Ile Leu Val Pro Lys
50 55 60

Val Ser Gly Leu Gln Tyr Arg Val Phe Arg Ile His Leu Pro Asp Pro
65 70 75 80

Asn Lys Phe Gly Phe Pro Asp Thr Ser Phe Tyr Asn Pro Asp Thr Gln
85 90 95

Arg Leu Val Trp Ala Cys Val Gly Val Glu Val Gly Arg Gly Gln Pro
100 105 110

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

Thr Glu Asn Ala Ser Ala Tyr Ala Ala Asn Ala Gly Val Asp Asn Arg
130 135 140

Glu Cys Ile Ser Met Asp Tyr Lys Gln Thr Gln Leu Cys Leu Ile Gly
145 150 155 160

Cys Lys Pro Pro Ile Gly Glu His Trp Gly Lys Gly Ser Pro Cys Thr
165 170 175

Asn Val Ala Val Asn Pro Gly Asp Cys Pro Pro Leu Glu Leu Ile Asn
180 185 190

Thr Val Ile Gln Asp Gly Asp Met Val Asp Thr Gly Phe Gly Ala Met
195 200 205

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

210

215

220

Cys Thr Ser Ile Cys Lys Tyr Pro Asp Tyr Ile Lys Met Val Ser Glu
225 230 235 240

Pro Tyr Gly Asp Ser Leu Phe Phe Tyr Leu Arg Arg Glu Gln Met Phe
245 250 255

Val Arg His Leu Phe Asn Arg Ala Gly Ala Val Gly Glu Asn Val Pro
260 265 270

Asp Asp Leu Tyr Ile Lys Gly Ser Gly Ser Thr Ala Asn Leu Ala Ser
275 280 285

Ser Asn Tyr Phe Pro Thr Pro Ser Gly Ser Met Val Thr Ser Asp Ala
290 295 300

Gln Ile Phe Asn Lys Pro Tyr Trp Leu Gln Arg Ala Gln Gly His Asn
305 310 315 320

Asn Gly Ile Cys Trp Gly Asn Gln Leu Phe Val Thr Val Val Asp Thr
325 330 335

Thr Arg Ser Thr Asn Met Ser Leu Cys Ala Ala Ile Ser Thr Ser Glu
340 345 350

Thr Thr Tyr Lys Asn Thr Asn Phe Lys Glu Tyr Leu Arg His Gly Glu
355 360 365

Glu Tyr Asp Leu Gln Phe Ile Phe Gln Leu Cys Lys Ile Thr Leu Thr
370 375 380

Ala Asp Val Met Thr Tyr Ile His Ser Met Asn Ser Thr Ile Leu Glu
385 390 395 400

Asp Trp Asn Phe Gly Leu Gln Pro Pro Pro Gly Gly Thr Leu Glu Asp
405 410 415

Thr Tyr Arg Phe Val Thr Ser Gln Ala Ile Ala Cys Gln Lys His Thr
420 425 430

Pro Pro Ala Pro Lys Glu Asp Pro Leu Lys Lys Tyr Thr Phe Trp Glu
435 440 445

Val Asn Leu Lys Glu Lys Phe Ser Ala Asp Leu Asp Gln Phe Pro Leu
450 455 460

Gly Arg Lys Phe Leu Leu Gln Ala Gly Leu Lys Ala Lys Pro Lys Phe
465 470 475 480

Thr Leu Gly Lys Arg Lys Ala Thr Pro Thr Thr Ser Ser Thr Ser Thr
485 490 495

Thr Ala Lys Arg Lys Lys Arg Lys Leu
500 505

<210> 12
<211> 1718
<212> PRT
<213> Homo sapiens

<400> 12

Met Asn Gln Asn Thr Thr Glu Pro Val Ala Ala Thr Glu Thr Leu Ala
1 5 10 15

Glu Val Pro Glu His Val Leu Arg Gly Leu Pro Glu Glu Val Arg Leu
20 25 30

Phe Pro Ser Ala Val Asp Lys Thr Arg Ile Gly Val Trp Ala Thr Lys
35 40 45

Pro Ile Leu Lys Gly Lys Lys Phe Gly Pro Phe Val Gly Asp Lys Lys
50 55 60

Lys Arg Ser Gln Val Lys Asn Asn Val Tyr Met Trp Glu Val Tyr Tyr
65 70 75 80

Pro Asn Leu Gly Trp Met Cys Ile Asp Ala Thr Asp Pro Glu Lys Gly
85 90 95

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

Leu Phe Pro Leu Glu Ile Asn Arg Ala Ile Tyr Tyr Lys Thr Leu Lys
115 120 125

Pro Ile Ala Pro Gly Glu Glu Leu Leu Val Trp Tyr Asn Gly Glu Asp
130 135 140

Asn Pro Glu Ile Ala Ala Ala Ile Glu Glu Glu Arg Ala Ser Ala Arg
145 150 155 160

Ser Lys Arg Ser Ser Pro Lys Ser Arg Lys Gly Lys Lys Lys Ser Gln
165 170 175

Glu Asn Lys Asn Lys Gly Asn Lys Ile Gln Asp Ile Gln Leu Lys Thr
180 185 190

Ser Glu Pro Asp Phe Thr Ser Ala Asn Met Arg Asp Ser Ala Glu Gly
195 200 205

Pro Lys Glu Asp Glu Glu Lys Pro Ser Ala Ser Ala Leu Glu Gln Pro
210 215 220

Ala Thr Leu Gln Glu Val Ala Ser Gln Glu Val Pro Pro Glu Leu Ala
225 230 235 240

Thr Pro Ala Pro Ala Trp Glu Pro Gln Pro Glu Pro Asp Glu Arg Leu
245 250 255

Glu Ala Ala Ala Cys Glu Val Asn Asp Leu Gly Glu Glu Glu Glu Glu
260 265 270

Glu Glu Glu Glu Asp Glu Glu Glu Glu Glu Asp Asp Asp Asp Asp Glu
275 280 285

Leu Glu Asp Glu Gly Glu Glu Glu Ala Ser Met Pro Asn Glu Asn Ser
290 295 300

Val Lys Glu Pro Glu Ile Arg Cys Asp Glu Lys Pro Glu Asp Leu Leu
305 310 315 320

Glu Glu Pro Lys Thr Thr Ser Glu Glu Thr Leu Glu Asp Cys Ser Glu
325 330 335

Val Thr Pro Ala Met Gln Ile Pro Arg Thr Lys Glu Glu Ala Asn Gly
340 345 350

Asp Val Phe Glu Thr Phe Met Phe Pro Cys Gln His Cys Glu Arg Lys
355 360 365

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

Thr Val Asn His Ala Phe Lys Cys Lys Tyr Cys Gly Lys Ala Phe Gly
385 390 395 400

Thr Gln Ile Asn Arg Arg Arg His Glu Arg Arg His Glu Ala Gly Leu
405 410 415

Lys Arg Lys Pro Ser Gln Thr Leu Gln Pro Ser Glu Asp Leu Ala Asp
420 425 430

Gly Lys Ala Ser Gly Glu Asn Val Ala Ser Lys Asp Asp Ser Ser Pro
435 440 445

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

Gln Asp Thr Ile Asn Ser Ser Val Val Glu Glu Asn Gly Glu Val Lys
465 470 475 480

Glu Leu His Pro Cys Lys Tyr Cys Lys Lys Val Phe Gly Thr His Thr
485 490 495

Asn Met Arg Arg His Gln Arg Arg Val His Glu Arg His Leu Ile Pro
500 505 510

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

Glu Gln Ala Gln Ala Thr Gln Asn Val Tyr Val Pro Ser Thr Glu Pro
530 535 540

Glu Glu Glu Gly Glu Ala Asp Asp Val Tyr Ile Met Asp Ile Ser Ser
545 550 555 560

Asn Ile Ser Glu Asn Leu Asn Tyr Tyr Ile Asp Gly Lys Ile Gln Thr
565 570 575

Asn Asn Asn Thr Ser Asn Cys Asp Val Ile Glu Met Glu Ser Ala Ser
580 585 590

Ala Asp Leu Tyr Gly Ile Asn Cys Leu Leu Thr Pro Val Thr Val Glu
595 600 605

Ile Thr Gln Asn Ile Lys Thr Thr Gln Val Pro Val Thr Glu Asp Leu
610 615 620

Pro Lys Glu Pro Leu Gly Ser Thr Asn Ser Glu Ala Lys Lys Arg Arg
625 630 635 640

Thr Ala Ser Pro Pro Ala Leu Pro Lys Ile Lys Ala Glu Thr Asp Ser
645 650 655

Asp Pro Met Val Pro Ser Cys Ser Leu Ser Leu Pro Leu Ser Ile Ser
660 665 670

Thr Thr Glu Ala Val Ser Phe His Lys Glu Lys Ser Val Tyr Leu Ser
675 680 685

Ser Lys Leu Lys Gln Leu Leu Gln Thr Gln Asp Lys Leu Thr Pro Ala
690 695 700

Gly Ile Ser Ala Thr Glu Ile Ala Lys Leu Gly Pro Val Cys Val Ser
705 710 715 720

Ala Pro Ala Ser Met Leu Pro Val Thr Ser Ser Arg Phe Lys Arg Arg
725 730 735

Thr Ser Ser Pro Pro Ser Ser Pro Gln His Ser Pro Ala Leu Arg Asp
740 745 750

Phe Gly Lys Pro Ser Asp Gly Lys Ala Ala Trp Thr Asp Ala Gly Leu
755 760 765

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

Ser Leu Ser Gly Arg Asp Glu Arg Glu Thr Val Ser Pro Pro Cys Phe
785 790 795 800

Asp Glu Tyr Lys Met Ser Lys Glu Trp Thr Ala Ser Ser Ala Phe Ser
805 810 815

Ser Val Cys Asn Gln Gln Pro Leu Asp Leu Ser Ser Gly Val Lys Gln
820 825 830

Lys Ala Glu Gly Thr Gly Lys Thr Pro Val Gln Trp Glu Ser Val Leu
835 840 845

Asp Leu Ser Val His Lys Lys His Cys Ser Asp Ser Glu Gly Lys Glu
850 855 860

Phe Lys Glu Ser His Ser Val Gln Pro Thr Cys Ser Ala Val Lys Lys
865 870 875 880

Arg Lys Pro Thr Thr Cys Met Leu Gln Lys Val Leu Leu Asn Glu Tyr
885 890 895

Asn Gly Ile Asp Leu Pro Val Glu Asn Pro Ala Asp Gly Thr Arg Ser
900 905 910

Pro Ser Pro Cys Lys Ser Leu Glu Ala Gln Pro Asp Pro Asp Leu Gly
915 920 925

Pro Gly Ser Gly Phe Pro Ala Pro Thr Val Glu Ser Thr Pro Asp Val
930 935 940

Cys Pro Ser Ser Pro Ala Leu Gln Thr Pro Ser Leu Ser Ser Gly Gln
945 950 955 960

Leu Pro Pro Leu Leu Ile Pro Thr Asp Pro Ser Ser Pro Pro Pro Cys
965 970 975

Pro Pro Val Leu Thr Val Ala Thr Pro Pro Pro Pro Leu Leu Pro Thr
980 985 990

Val Pro Leu Pro Ala Pro Ser Ser Ser Ala Ser Pro His Pro Cys Pro
995 1000 1005

Ser Pro Leu Ser Asn Ala Thr Ala Gln Ser Pro Leu Pro Ile Leu
1010 1015 1020

Ser Pro Thr Val Ser Pro Ser Pro Ser Pro Ile Pro Pro Val Glu
1025 1030 1035

Pro Leu Met Ser Ala Ala Ser Pro Gly Pro Pro Thr Leu Ser Ser
1040 1045 1050

Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Phe Ser Ser Ser Ser
1055 1060 1065

Ser Ser Ser Ser Pro Ser Pro Pro Pro Leu Ser Ala Ile Ser Ser
1070 1075 1080

Val Val Ser Ser Gly Asp Asn Leu Glu Ala Ser Leu Pro Met Ile
1085 1090 1095

Ser Phe Lys Gln Glu Glu Leu Glu Asn Glu Gly Leu Lys Pro Arg
1100 1105 1110

Glu Glu Pro Gln Ser Ala Ala Glu Gln Asp Val Val Val Gln Glu
1115 1120 1125

Thr Phe Asn Lys Asn Phe Val Cys Asn Val Cys Glu Ser Pro Phe
1130 1135 1140

Leu Ser Ile Lys Asp Leu Thr Lys His Leu Ser Ile His Ala Glu
1145 1150 1155

Glu Trp Pro Phe Lys Cys Glu Phe Cys Val Gln Leu Phe Lys Asp
1160 1165 1170

Lys Thr Asp Leu Ser Glu His Arg Phe Leu Leu His Gly Val Gly
1175 1180 1185

Asn Ile Phe Val Cys Ser Val Cys Lys Lys Glu Phe Ala Phe Leu
1190 1195 1200

Cys Asn Leu Gln Gln His Gln Arg Asp Leu His Pro Asp Lys Val
1205 1210 1215

Cys Thr His His Glu Phe Glu Ser Gly Thr Leu Arg Pro Gln Asn
1220 1225 1230

Phe Thr Asp Pro Ser Lys Ala His Val Glu His Met Gln Ser Leu
1235 1240 1245

Pro Glu Asp Pro Leu Glu Thr Ser Lys Glu Glu Glu Glu Leu Asn
1250 1255 1260

Asp Ser Ser Glu Glu Leu Tyr Thr Thr Ile Lys Ile Met Ala Ser
1265 1270 1275

Gly Ile Lys Thr Lys Asp Pro Asp Val Arg Leu Gly Leu Asn Gln
1280 1285 1290

His Tyr Pro Ser Phe Lys Pro Pro Pro Phe Gln Tyr His His Arg
1295 1300 1305

Asn Pro Met Gly Ile Gly Val Thr Ala Thr Asn Phe Thr Thr His
1310 1315 1320

Asn Ile Pro Gln Thr Phe Thr Thr Ala Ile Arg Cys Thr Lys Cys
1325 1330 1335

Gly Lys Gly Val Asp Asn Met Pro Glu Leu His Lys His Ile Leu
1340 1345 1350

Ala Cys Ala Ser Ala Ser Asp Lys Lys Arg Tyr Thr Pro Lys Lys
1355 1360 1365

Asn Pro Val Pro Leu Lys Gln Thr Val Gln Pro Lys Asn Gly Val
1370 1375 1380

Val Val Leu Asp Asn Ser Gly Lys Asn Ala Phe Arg Arg Met Gly
1385 1390 1395

Gln Pro Lys Arg Leu Asn Phe Ser Val Glu Leu Ser Lys Met Ser
1400 1405 1410

Ser Asn Lys Leu Lys Leu Asn Ala Leu Lys Lys Lys Asn Gln Leu
1415 1420 1425

Val Gln Lys Ala Ile Leu Gln Lys Asn Lys Ser Ala Lys Gln Lys
1430 1435 1440

Ala Asp Leu Lys Asn Ala Cys Glu Ser Ser Ser His Ile Cys Pro
1445 1450 1455

Tyr Cys Asn Arg Glu Phe Thr Tyr Ile Gly Ser Leu Asn Lys His
1460 1465 1470

Ala Ala Phe Ser Cys Pro Lys Lys Pro Leu Ser Pro Pro Lys Lys
1475 1480 1485

Lys Val Ser His Ser Ser Lys Lys Gly Gly His Ser Ser Pro Ala
1490 1495 1500

Ser Ser Asp Lys Asn Ser Asn Ser Asn His Arg Arg Arg Thr Ala
1505 1510 1515

Asp Ala Glu Ile Lys Met Gln Ser Met Gln Thr Pro Leu Gly Lys
1520 1525 1530

Thr Arg Ala Arg Ser Ser Gly Pro Thr Gln Val Pro Leu Pro Ser
1535 1540 1545

Ser Ser Phe Arg Ser Lys Gln Asn Val Lys Phe Ala Ala Ser Val
1550 1555 1560

Lys Ser Lys Lys Pro Ser Ser Ser Ser Leu Arg Asn Ser Ser Pro
1565 1570 1575

Ile Arg Met Ala Lys Ile Thr His Val Glu Gly Lys Lys Pro Lys
1580 1585 1590

Ala Val Ala Lys Asn His Ser Ala Gln Leu Ser Ser Lys Thr Ser
1595 1600 1605

Arg Ser Leu His Val Arg Val Gln Lys Ser Lys Ala Val Leu Gln
1610 1615 1620

Ser Lys Ser Thr Leu Ala Ser Lys Lys Arg Thr Asp Arg Phe Asn
1625 1630 1635

Ile Lys Ser Arg Glu Arg Ser Gly Gly Pro Val Thr Arg Ser Leu
1640 1645 1650

Gln Leu Ala Ala Ala Ala Asp Leu Ser Glu Asn Lys Arg Glu Asp
1655 1660 1665

Gly Ser Ala Lys Gln Glu Leu Lys Asp Phe Ser Tyr Ser Leu Arg
1670 1675 1680

Leu Ala Ser Arg Cys Ser Pro Pro Ala Ala Pro Tyr Ile Thr Arg
1685 1690 1695

Gln Tyr Arg Lys Val Lys Ala Pro Ala Ala Ala Gln Phe Gln Gly
1700 1705 1710

Pro Phe Phe Lys Glu
1715

<210> 13
<211> 230
<212> PRT
<213> Homo sapiens

<400> 13

Met Glu Gly Gln Arg Trp Leu Pro Leu Glu Ala Asn Pro Glu Val Thr
1 5 10 15

Asn Gln Phe Leu Lys Gln Leu Gly Leu His Pro Asn Trp Gln Phe Val
20 25 30

Asp Val Tyr Gly Met Asp Pro Glu Leu Leu Ser Met Val Pro Arg Pro
35 40 45

Val Cys Ala Val Leu Leu Leu Phe Pro Ile Thr Glu Lys Tyr Glu Val
50 55 60

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

Thr Ser Ser Val Tyr Phe Met Lys Gln Thr Ile Ser Asn Ala Cys Gly
85 90 95

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

Phe Glu Ser Gly Ser Thr Leu Lys Lys Phe Leu Glu Glu Ser Val Ser
115 120 125

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

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

Ser Ile Asp Glu Lys Val Asp Leu His Phe Ile Ala Leu Val His Val
165 170 175

Asp Gly His Leu Tyr Glu Leu Asp Gly Arg Lys Pro Phe Pro Ile Asn
180 185 190

His Gly Glu Thr Ser Asp Glu Thr Leu Leu Glu Asp Ala Ile Glu Val
195 200 205

Cys Lys Lys Phe Met Glu Arg Asp Pro Asp Glu Leu Arg Phe Asn Ala
210 215 220

Ile Ala Leu Ser Ala Ala
225 230

<210> 14

<211> 244
<212> PRT
<213> Homo sapiens

<400> 14

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

Asn Leu Lys Arg Lys Leu Lys Phe Leu Ile Tyr Glu His Glu Cys Phe
20 25 30

Gln Glu Glu Leu Arg Lys Ala Gln Arg Lys Leu Leu Lys Val Ser Arg
35 40 45

Asp Lys Ser Phe Leu Leu Asp Arg Leu Leu Gln Tyr Glu Asn Val Asp
50 55 60

Glu Asp Ser Ser Asp Ser Asp Ala Thr Ala Ser Ser Asp Asn Ser Glu
65 70 75 80

Thr Glu Gly Thr Pro Lys Leu Ser Asp Thr Pro Ala Pro Lys Arg Lys
85 90 95

Arg Ser Pro Pro Leu Gly Gly Ala Pro Ser Pro Ser Ser Leu Ser Leu
100 105 110

Pro Pro Ser Thr Gly Phe Pro Leu Gln Ala Ser Gly Val Pro Ser Pro
115 120 125

Tyr Leu Ser Ser Leu Ala Ser Ser Arg Tyr Pro Pro Phe Pro Ser Asp
130 135 140

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

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

Pro Asp Cys Pro Val Gly Gly Pro Leu Thr Phe Pro Gly Arg Gly Ser
180 185 190

Gly Ala Gly Val Gly Thr Thr Leu Thr Pro Leu Pro Pro Pro Lys Met
195 200 205

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

Ala Gly Ser Gly Asp Asp Ala Leu Asp Gly Asp Asp Asp Leu Val Ile
225 230 235 240

Asp Ile Pro Glu

<210> 15
<211> 271
<212> PRT
<213> Homo sapiens

<400> 15

Met Asn Leu Leu Gly Ser Arg Arg Val Phe Ser Lys Lys Cys Arg Leu
1 5 10 15

Val Lys Phe Ser Met Val Ala Leu Val Ser Ala Thr Met Ala Val Thr
20 25 30

Thr Val Thr Leu Glu Asn Thr Ala Leu Ala Arg Gln Thr Gln Val Ser
35 40 45

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

Leu Ala Trp Thr Phe Asn Asp Ser Pro Asn Tyr Tyr Lys Thr Leu Gly
65 70 75 80

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

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

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

Gly Lys Asn Gln Asn Pro Ala Gly Trp Thr Gly Asn Pro Asn His Val
130 135 140

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

Trp Asn Arg Ser His Leu Ile Ala Asp Ser Leu Gly Gly Asp Ala Leu
165 170 175

Arg Val Asn Ala Val Thr Gly Thr Arg Thr Gln Asn Val Gly Gly Arg
180 185 190

Asp Gln Lys Gly Gly Met Arg Tyr Thr Glu Gln Arg Ala Gln Glu Trp
195 200 205

Leu Glu Ala Asn Arg Asp Gly Tyr Leu Tyr Tyr Glu Val Ala Pro Ile
210 215 220

Tyr Asn Ala Asp Glu Leu Ile Pro Arg Ala Val Val Val Ser Met Gln
225 230 235 240

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

Asn Gly Tyr Thr Ile Asn Tyr His Asn Gly Thr Pro Thr Gln Lys
260 265 270