

SEQUENCE LISTING

<110> ExterNautics S.p.A.

<120> tumor markers and methods of use thereof

<130> 1264PCT

<160> 55

<170> PatentIn version 3.3

<210> 1

<211> 260

<212> PRT

<213> Homo sapiens

<400> 1

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

Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu Tyr Gly
20 25 30

Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser Ser Leu
35 40 45

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

Gln Ala Val Lys Cys Thr Arg Lys Ile Asn Leu Glu Gln Cys Glu Glu
65 70 75 80

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

Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val Gln Ser Ile Val
100 105 110

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

Leu Gln Pro Thr Leu Val Asn Ala Gly His Phe Ser Leu Cys Val Asn
130 135 140

Val Val Leu Glu Val Lys Tyr Ser Leu Thr Tyr Thr Asp Ala Gly Glu
145 150 155 160

Val Thr Lys Ala Asp Leu Ser Phe Val Leu Gly Thr Val Ser Ser Val
165 170 175

2

Val Val Pro Leu Gln Gln Lys Phe Glu Ile His Phe Leu Gln Thr Asp
180 185 190

Trp Ser Ser Pro Val Ser Ala Arg Ser Thr Glu Gly Glu Glu Pro Ala
195 200 205

Val Gly Pro Gly Leu Pro Arg Leu Arg Gly Pro Phe Trp Lys Phe Pro
210 215 220

Gly Pro Gly His Ala Gly Leu Gly Ala His Pro Leu His His Pro Val
225 230 235 240

Ile Gln Gln Glu Gly Phe Leu Pro Ala Pro Arg Gly Phe Gly Tyr Arg
245 250 255

Ser Glu Val Asp
260

<210> 2
<211> 483
<212> PRT
<213> Homo sapiens

<400> 2

Met Ile Thr Ala His Cys Ser Leu Asp Leu Leu Gly Ser Val Ala Val
1 5 10 15

Leu Cys Val Cys Asp Leu Ser Pro Ala Gln Cys Asp Ile Asn Cys Cys
20 25 30

Cys Asp Pro Asp Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys
35 40 45

Ser Val Pro Val Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala
50 55 60

Val Ile Tyr Ser Leu Asn Phe Thr Ala Asn Pro Pro Gln Arg Val Phe
65 70 75 80

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

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

Asn Asn Phe Asp Thr Leu Met Lys Thr Ser Asp Gly Phe Thr Leu Asn
115 120 125

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

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

Arg Phe Pro Ser Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro
 165 170 175

Ala Ala Phe Leu Val Asn Gln Ala Val Lys Cys Thr Arg Lys Ile Asn
 180 185 190

Leu Glu Gln Cys Glu Glu Ile Glu Ala Leu Ser Met Ala Phe Tyr Ser
 195 200 205

Ser Pro Glu Ile Leu Arg Val Pro Asp Ser Arg Lys Lys Val Pro Ile
 210 215 220

Thr Val Gln Ser Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg
 225 230 235 240

Arg Glu Asp Thr Asp Val Leu Gln Pro Thr Leu Val Asn Ala Gly His
 245 250 255

Phe Ser Leu Cys Val Asn Val Val Leu Glu Val Lys Tyr Ser Leu Thr
 260 265 270

Tyr Thr Asp Ala Gly Glu Val Thr Lys Ala Asp Leu Ser Phe Val Leu
 275 280 285

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

His Phe Leu Gln Glu Asn Thr Gln Pro Val Pro Leu Ser Gly Asn Pro
 305 310 315 320

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

Thr Gly Ala Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu
 340 345 350

Leu Trp Gly Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser
 355 360 365

Gln Ala Gln Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln
 370 375 380

4

Ser Phe Asn Arg Lys His Phe Val Leu Gln Asp Ser Cys Gln Leu Pro
 385 390 395 400

Gly Ala Leu Val Ile Glu Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu
 405 410 415

Asn Pro Gln Ala Lys Ile Val Asn Val Thr Ala Asn Leu Ile Ser Ser
 420 425 430

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

Thr Ala Val Thr Phe Val Asp Val Ser Ala Pro Ala Glu Ala Gly Phe
 450 455 460

Arg Ala Pro Pro Ala Ile Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe
 465 470 475 480

Pro Phe Val

<210> 3
 <211> 531
 <212> PRT
 <213> Homo sapiens

<400> 3

Met Cys Gln Leu Leu Glu Ser Thr Val Ile Gln Pro Gln Gly Asp Ser
 1 5 10 15

Pro Val Ala Val Leu Cys Val Cys Asp Leu Ser Pro Ala Gln Cys Asp
 20 25 30

Ile Asn Cys Cys Cys Asp Pro Asp Cys Ser Ser Val Asp Phe Ser Val
 35 40 45

Phe Ser Ala Cys Ser Val Pro Val Val Thr Gly Asp Ser Gln Phe Cys
 50 55 60

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

Gln Arg Val Phe Glu Leu Val Asp Gln Ile Asn Pro Ser Ile Phe Cys
 85 90 95

Ile His Ile Thr Asn Tyr Lys Pro Ala Leu Ser Phe Ile Asn Pro Glu
 100 105 110

Val Pro Asp Glu Asn Asn Phe Asp Thr Leu Met Lys Thr Ser Asp Gly
 115 120 125

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

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

Asp Ser Phe Leu Arg Phe Pro Ser Ser Leu Thr Ser Ser Leu Cys Thr
 165 170 175

Asp Asn Asn Pro Ala Ala Phe Leu Val Asn Gln Ala Val Lys Cys Thr
 180 185 190

Arg Lys Ile Asn Leu Glu Gln Cys Glu Glu Ile Glu Ala Leu Ser Met
 195 200 205

Ala Phe Tyr Ser Ser Pro Glu Ile Leu Arg Val Pro Asp Ser Arg Lys
 210 215 220

Lys Val Pro Ile Thr Val Gln Ser Ile Val Ile Gln Ser Leu Asn Lys
 225 230 235 240

Thr Leu Thr Arg Arg Glu Asp Thr Asp Val Leu Gln Pro Thr Leu Val
 245 250 255

Asn Ala Gly His Phe Ser Leu Cys Val Asn Val Val Leu Glu Val Lys
 260 265 270

Tyr Ser Leu Thr Tyr Thr Asp Ala Gly Glu Val Thr Lys Ala Asp Leu
 275 280 285

Ser Phe Val Leu Gly Thr Val Ser Ser Val Val Val Pro Leu Gln Gln
 290 295 300

Lys Phe Glu Ile His Phe Leu Gln Glu Asn Thr Gln Pro Val Pro Leu
 305 310 315 320

Ser Gly Asn Pro Gly Tyr Val Val Gly Leu Pro Leu Ala Ala Gly Phe
 325 330 335

Gln Pro His Lys Met Ser Gly Ile Ile Gln Thr Thr Asn Arg Tyr Gly
 340 345 350

Gln Leu Thr Ile Leu His Ser Thr Thr Glu Gln Asp Cys Leu Ala Leu
 355 360 365

6

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

Cys Lys Leu Arg Leu Thr Gly Ala Leu Pro Cys Gln Leu Val Ala Gln
 385 390 395 400

Lys Val Lys Ser Leu Leu Trp Gly Gln Gly Phe Pro Asp Tyr Val Ala
 405 410 415

Pro Phe Gly Asn Ser Gln Ala Gln Asp Met Leu Asp Trp Val Pro Ile
 420 425 430

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

Gly Ala Leu Val Ile Glu Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu
 450 455 460

Asn Pro Gln Ala Lys Ile Val Asn Val Thr Ala Asn Leu Ile Ser Ser
 465 470 475 480

Ser Phe Pro Glu Ala Asn Ser Gly Asn Glu Arg Thr Ile Leu Ile Ser
 485 490 495

Thr Ala Val Thr Phe Val Asp Val Ser Ala Pro Ala Glu Ala Gly Phe
 500 505 510

Arg Ala Pro Pro Ala Ile Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe
 515 520 525

Pro Phe Val
 530

<210> 4
 <211> 592
 <212> PRT
 <213> Homo sapiens

<400> 4

Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys
 1 5 10 15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr
 20 25 30

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

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

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

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

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val
 100 105 110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser
 115 120 125

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

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro
 145 150 155 160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp
 165 170 175

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

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu
 195 200 205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser
 210 215 220

Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Ala Phe Leu
 225 230 235 240

Val Asn Gln Ala Val Lys Cys Thr Arg Lys Ile Asn Leu Glu Gln Cys
 245 250 255

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

Leu Arg Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val Gln Ser
 275 280 285

Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu Asp Thr
 290 295 300

8

Asp Val Leu Gln Pro Thr Leu Val Asn Ala Gly His Phe Ser Leu Cys
 305 310 315 320
 Val Asn Val Val Leu Glu Val Lys Tyr Ser Leu Thr Tyr Thr Asp Ala
 325 330 335
 Gly Glu Val Thr Lys Ala Asp Leu Ser Phe Val Leu Gly Thr Val Ser
 340 345 350
 Ser Val Val Val Pro Leu Gln Gln Lys Phe Glu Ile His Phe Leu Gln
 355 360 365
 Glu Asn Thr Gln Pro Val Pro Leu Ser Gly Asn Pro Gly Tyr Val Val
 370 375 380
 Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Gly Ser Gly Ile
 385 390 395 400
 Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His Ser Thr
 405 410 415
 Thr Glu Gln Asp Cys Leu Ala Leu Glu Gly Val Arg Thr Pro Val Leu
 420 425 430
 Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr Gly Ala
 435 440 445
 Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu Leu Trp Gly
 450 455 460
 Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln Ala Gln
 465 470 475 480
 Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser Phe Asn
 485 490 495
 Arg Lys His Phe Val Leu Gln Asp Ser Cys Gln Leu Pro Gly Ala Leu
 500 505 510
 Val Ile Glu Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln
 515 520 525
 Ala Lys Ile Val Asn Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro
 530 535 540
 Glu Ala Asn Ser Gly Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val
 545 550 555 560

9

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

Pro Ala Ile Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val
 580 585 590

<210> 5
 <211> 573
 <212> PRT
 <213> Homo sapiens

<400> 5

Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys
 1 5 10 15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr
 20 25 30

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

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

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

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

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val
 100 105 110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser
 115 120 125

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

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro
 145 150 155 160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp
 165 170 175

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

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu
 195 200 205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser
 210 215 220

Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Gly Gln Ala
 225 230 235 240

Tyr Trp Phe Thr Pro Val Ile Pro Ala Leu Trp Glu Ala Glu Ala Arg
 245 250 255

Gly Ser Leu Glu Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val
 260 265 270

Gln Ser Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu
 275 280 285

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

Leu Cys Val Asn Val Val Leu Glu Val Lys Tyr Ser Leu Thr Tyr Thr
 305 310 315 320

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

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

Leu Gln Glu Asn Thr Gln Pro Val Pro Leu Ser Gly Asn Pro Gly Tyr
 355 360 365

Val Val Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Gly Ser
 370 375 380

Gly Ile Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His
 385 390 395 400

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

Val Leu Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr
 420 425 430

Gly Ala Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu Leu
 435 440 445

Trp Gly Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln
 450 455 460

Ala Gln Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser
 465 470 475 480

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

Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln Ala Lys Ile
 500 505 510

Val Asn Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro Glu Ala Asn
 515 520 525

Ser Gly Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val Thr Phe Val
 530 535 540

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

Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val
 565 570

<210> 6
 <211> 587
 <212> PRT
 <213> Homo sapiens

<400> 6

Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys
 1 5 10 15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr
 20 25 30

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

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

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

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

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val
 100 105 110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser
 115 120 125

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

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro
 145 150 155 160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp
 165 170 175

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

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu
 195 200 205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser
 210 215 220

Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Ala Phe Leu
 225 230 235 240

Val Asn Gln Ala Val Lys Cys Thr Arg Lys Ile Asn Leu Glu Gln Cys
 245 250 255

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

Leu Arg Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val Gln Ser
 275 280 285

Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu Asp Thr
 290 295 300

Asp Val Leu Gln Pro Thr Leu Val Asn Ala Gly His Phe Ser Leu Cys
 305 310 315 320

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

Gly Glu Val Thr Lys Ala Asp Leu Ser Phe Val Leu Gly Thr Val Ser
 340 345 350

Ser Val Val Val Pro Leu Gln Gln Lys Phe Glu Ile His Phe Leu Gln
355 360 365

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

Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Gly Ser Gly Ile
385 390 395 400

Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His Ser Thr
405 410 415

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

Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr Gly Ala
435 440 445

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

Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln Ala Gln
465 470 475 480

Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser Phe Asn
485 490 495

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

Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln Ala Lys Ile Val Asn
515 520 525

Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro Glu Ala Asn Ser Gly
530 535 540

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

Ser Ala Pro Ala Glu Ala Gly Phe Arg Ala Pro Pro Ala Ile Asn Ala
565 570 575

Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val
580 585

<210> 7

<211> 573

<212> PRT

<213> Homo sapiens

<400> 7

Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys
 1 5 10 15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr
 20 25 30

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

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

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

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

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val
 100 105 110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser
 115 120 125

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

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro
 145 150 155 160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp
 165 170 175

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

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu
 195 200 205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser
 210 215 220

Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Gly Gln Ala
 225 230 235 240

Tyr Trp Phe Thr Pro Val Ile Pro Ala Leu Trp Glu Ala Glu Ala Arg
245 250 255

Gly Ser Leu Glu Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val
260 265 270

Gln Ser Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu
275 280 285

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

Leu Cys Val Asn Val Val Leu Glu Val Lys Tyr Ser Leu Thr Tyr Thr
305 310 315 320

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

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

Leu Gln Glu Asn Thr Gln Pro Val Pro Leu Ser Gly Asn Pro Gly Tyr
355 360 365

Val Val Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Met Ser
370 375 380

Gly Ile Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His
385 390 395 400

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

Val Leu Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr
420 425 430

Gly Ala Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu Leu
435 440 445

Trp Gly Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln
450 455 460

Ala Gln Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser
465 470 475 480

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

16

Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln Ala Lys Ile
 500 505 510

Val Asn Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro Glu Ala Asn
 515 520 525

Ser Gly Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val Thr Phe Val
 530 535 540

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

Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val
 565 570

<210> 8
 <211> 592
 <212> PRT
 <213> Homo sapiens

<400> 8

Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys
 1 5 10 15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr
 20 25 30

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

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

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

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

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val
 100 105 110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser
 115 120 125

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

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro
 145 150 155 160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp
 165 170 175

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

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu
 195 200 205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser
 210 215 220

Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Ala Phe Leu
 225 230 235 240

Val Asn Gln Ala Val Lys Cys Thr Arg Lys Ile Asn Leu Glu Gln Cys
 245 250 255

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

Leu Arg Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val Gln Ser
 275 280 285

Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu Asp Thr
 290 295 300

Asp Val Leu Gln Pro Thr Leu Val Asn Ala Gly His Phe Ser Leu Cys
 305 310 315 320

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

Gly Glu Val Thr Lys Ala Asp Leu Ser Phe Val Leu Gly Thr Val Ser
 340 345 350

Ser Val Val Val Pro Leu Gln Gln Lys Phe Glu Ile His Phe Leu Gln
 355 360 365

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

Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Met Ser Gly Ile
 385 390 395 400

Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His Ser Thr
 405 410 415

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

Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr Gly Ala
 435 440 445

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

Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln Ala Gln
 465 470 475 480

Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser Phe Asn
 485 490 495

Arg Lys His Phe Val Leu Gln Asp Ser Cys Gln Leu Pro Gly Ala Leu
 500 505 510

Val Ile Glu Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln
 515 520 525

Ala Lys Ile Val Asn Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro
 530 535 540

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

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

Pro Ala Ile Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val
 580 585 590

<210> 9
 <211> 697
 <212> PRT
 <213> Homo sapiens

<400> 9

Met Gly Phe Gln Pro Pro Ala Ala Leu Leu Leu Arg Leu Phe Leu Leu
 1 5 10 15

Gln Gly Ile Leu Arg Leu Leu Trp Gly Asp Leu Ala Phe Ile Pro Pro
 20 25 30

Phe Ile Arg Met Ser Gly Pro Ala Val Ser Ala Ser Leu Val Gly Asp
 35 40 45

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

Ile Leu Pro Ile Pro Thr Cys Gly Val Leu Asn Asn Glu Thr Glu Asp
 65 70 75 80

Trp Ser Val Thr Val Ile Pro Gly Ala Lys Val Leu Glu Val Thr Val
 85 90 95

Arg Trp Lys Arg Gly Leu Asp Trp Cys Ser Ser Asn Glu Thr Asp Ser
 100 105 110

Phe Ser Glu Ser Pro Cys Ile Leu Gln Thr Leu Leu Val Ser Ala Ser
 115 120 125

His Asn Ser Ser Cys Ser Ala His Leu Leu Ile Gln Val Glu Ile Tyr
 130 135 140

Ala Asn Ser Ser Leu Thr His Asn Ala Ser Glu Asn Val Thr Val Ile
 145 150 155 160

Pro Asn Gln Val Tyr Gln Pro Leu Gly Pro Cys Pro Cys Asn Leu Thr
 165 170 175

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

Asn Leu Thr Thr Leu Phe Arg Arg Ser Cys Phe Thr Gly Val Phe Gly
 195 200 205

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

Thr Arg Gly Val Pro Asp Trp Phe Pro Phe Leu Cys Val Gln Ser Pro
 225 230 235 240

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

Pro Lys Gln Asp Ser Ser Phe Glu Val Tyr Val Asp Thr Asp Ala Lys
 260 265 270

Asp Phe Ala Asp Phe Gly Tyr Lys Gln Gly Asp Pro Ile Met Thr Val
 275 280 285

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

21

Gly Ala Asp Pro Leu Ala Ser Ser Val Asn Gly Met Cys Leu Asp Ile
 545 550 555 560

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

Glu Gly Ile Thr Gln Gln Glu Ile Leu Gly Val Glu Thr Arg Phe Ser
 580 585 590

Ser Val Asn Trp Gln Tyr Gln Cys Gly Leu Thr Cys Glu His Lys Ala
 595 600 605

Asp Leu Leu Pro Ile Ser Ala Ser Val Gln Phe Ile Lys Ile Pro Ala
 610 615 620

Gln Leu Pro His Pro Leu Thr Arg Phe Gln Ile Asn Tyr Thr Glu Tyr
 625 630 635 640

Asp Cys Asn Arg Asn Glu Val Cys Trp Pro Gln Leu Leu Tyr Pro Trp
 645 650 655

Thr Gln Tyr Tyr Gln Gly Glu Leu His Ser Gln Cys Val Ala Lys Gly
 660 665 670

Leu Leu Leu Leu Leu Phe Leu Thr Leu Ala Leu Phe Leu Ser Asn Pro
 675 680 685

Trp Thr Arg Ile Cys Lys Ala Tyr Ser
 690 695

<210> 10
 <211> 625
 <212> PRT
 <213> Homo sapiens

<400> 10

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

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

Val Phe Pro Asp Gly Val Arg Pro Gln Pro Ser Ser Ser Pro Ser Gly
 35 40 45

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

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

Leu Pro Thr Val Val Pro Thr Leu Val Thr Pro Ser Ala Pro Gly Asn
85 90 95

Arg Thr Val Asp Leu Phe Pro Val Leu Pro Ile Cys Val Cys Asp Leu
100 105 110

Thr Pro Gly Ala Cys Asp Ile Asn Cys Cys Cys Asp Arg Asp Cys Tyr
115 120 125

Leu Leu His Pro Arg Thr Val Phe Ser Phe Cys Leu Pro Gly Ser Val
130 135 140

Arg Ser Ser Ser Trp Val Cys Val Asp Asn Ser Val Ile Phe Arg Ser
145 150 155 160

Asn Ser Pro Phe Pro Ser Arg Val Phe Met Asp Ser Asn Gly Ile Arg
165 170 175

Gln Phe Cys Val His Val Asn Asn Ser Asn Leu Asn Tyr Phe Gln Lys
180 185 190

Leu Gln Lys Val Asn Ala Thr Asn Phe Gln Ala Leu Ala Ala Glu Phe
195 200 205

Gly Gly Glu Ser Phe Thr Ser Thr Phe Gln Thr Gln Ser Pro Pro Ser
210 215 220

Phe Tyr Arg Ala Gly Asp Pro Ile Leu Thr Tyr Phe Pro Lys Trp Ser
225 230 235 240

Val Ile Ser Leu Leu Arg Gln Pro Ala Gly Val Gly Ala Gly Gly Leu
245 250 255

Cys Ala Glu Ser Asn Pro Ala Gly Phe Leu Glu Ser Lys Ser Thr Thr
260 265 270

Cys Thr Arg Phe Phe Lys Asn Leu Ala Ser Ser Cys Thr Leu Asp Ser
275 280 285

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

Arg Ser Met Thr Asp Pro Gln Asn Met Glu Phe Gln Val Pro Val Ile
305 310 315 320

Leu Thr Ser Gln Ala Asn Ala Pro Leu Leu Ala Gly Asn Thr Cys Gln
 325 330 335

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

Gly Ile Gln Lys Val Ser Val Ser Leu Gly Gln Thr Asn Leu Thr Val
 355 360 365

Glu Pro Gly Ala Ser Leu Gln Gln His Phe Ile Leu Arg Phe Arg Ala
 370 375 380

Phe Gln Gln Ser Thr Ala Ala Ser Leu Thr Ser Pro Arg Ser Gly Asn
 385 390 395 400

Pro Gly Tyr Ile Val Gly Lys Pro Leu Leu Ala Leu Thr Asp Asp Ile
 405 410 415

Ser Tyr Ser Met Thr Leu Leu Gln Ser Gln Gly Asn Gly Ser Cys Ser
 420 425 430

Val Lys Arg His Glu Val Gln Phe Gly Val Asn Ala Ile Ser Gly Cys
 435 440 445

Lys Leu Arg Leu Lys Lys Ala Asp Cys Ser His Leu Gln Gln Glu Ile
 450 455 460

Tyr Gln Thr Leu His Gly Arg Pro Arg Pro Glu Tyr Val Ala Ile Phe
 465 470 475 480

Gly Asn Ala Asp Pro Ala Gln Lys Gly Gly Trp Thr Arg Ile Leu Asn
 485 490 495

Arg His Cys Ser Ile Ser Ala Ile Asn Cys Thr Ser Cys Cys Leu Ile
 500 505 510

Pro Val Ser Leu Glu Ile Gln Val Leu Trp Ala Tyr Val Gly Leu Leu
 515 520 525

Ser Asn Pro Gln Ala His Val Ser Gly Val Arg Phe Leu Tyr Gln Cys
 530 535 540

Gln Ser Ile Gln Asp Ser Gln Gln Val Thr Glu Val Ser Leu Thr Thr
 545 550 555 560

Leu Val Asn Phe Val Asp Ile Thr Gln Lys Pro Gln Pro Pro Arg Gly
 565 570 575

24

Gln Pro Lys Met Asp Trp Lys Trp Pro Phe Asp Phe Phe Pro Phe Lys
 580 585 590

Val Ala Phe Ser Arg Gly Val Phe Ser Gln Lys Cys Ser Val Ser Pro
 595 600 605

Ile Leu Ile Leu Cys Leu Leu Leu Leu Gly Val Leu Asn Leu Glu Thr
 610 615 620

Met
 625

<210> 11
 <211> 429
 <212> PRT
 <213> Homo sapiens

<400> 11

Met Asp Ser Asn Gly Ile Arg Gln Phe Cys Val His Val Asn Asn Ser
 1 5 10 15

Asn Leu Asn Tyr Phe Gln Lys Leu Gln Lys Val Asn Ala Thr Asn Phe
 20 25 30

Gln Ala Leu Ala Ala Glu Phe Gly Gly Glu Ser Phe Thr Ser Thr Phe
 35 40 45

Gln Thr Gln Ser Pro Pro Ser Phe Tyr Arg Ala Gly Asp Pro Ile Leu
 50 55 60

Thr Tyr Phe Pro Lys Trp Ser Val Ile Ser Leu Leu Arg Gln Pro Ala
 65 70 75 80

Gly Val Gly Ala Gly Gly Leu Cys Ala Glu Ser Asn Pro Ala Gly Phe
 85 90 95

Leu Glu Ser Lys Ser Thr Thr Cys Thr Arg Phe Phe Lys Asn Leu Ala
 100 105 110

Ser Ser Cys Thr Leu Asp Ser Ala Leu Asn Ala Ala Ser Tyr Tyr Asn
 115 120 125

Phe Thr Val Leu Lys Val Pro Arg Ser Met Thr Asp Pro Gln Asn Met
 130 135 140

Glu Val Thr Tyr Glu Ile Glu Thr Asn Gly Thr Phe Gly Ile Gln Lys
 145 150 155 160

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

Ser Leu Gln Gln His Phe Ile Leu Arg Phe Arg Ala Phe Gln Gln Ser
 180 185 190

Thr Ala Ala Ser Leu Thr Ser Pro Arg Ser Gly Asn Pro Gly Tyr Ile
 195 200 205

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

Thr Leu Leu Gln Ser Gln Gly Asn Gly Ser Cys Ser Val Lys Arg His
 225 230 235 240

Glu Val Gln Phe Gly Val Asn Ala Ile Ser Gly Cys Lys Leu Arg Leu
 245 250 255

Lys Lys Ala Asp Cys Ser His Leu Gln Gln Glu Ile Tyr Gln Thr Leu
 260 265 270

His Gly Arg Pro Arg Pro Glu Tyr Val Ala Ile Phe Gly Asn Ala Asp
 275 280 285

Pro Ala Gln Lys Gly Gly Trp Thr Arg Ile Leu Asn Arg His Cys Ser
 290 295 300

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

Glu Ile Gln Val Leu Trp Ala Tyr Val Gly Leu Leu Ser Asn Pro Gln
 325 330 335

Ala His Val Ser Gly Val Arg Phe Leu Tyr Gln Cys Gln Ser Ile Gln
 340 345 350

Asp Ser Gln Gln Val Thr Glu Val Ser Leu Thr Thr Leu Val Asn Phe
 355 360 365

Val Asp Ile Thr Gln Lys Pro Gln Pro Pro Arg Gly Gln Pro Lys Met
 370 375 380

Asp Trp Lys Trp Pro Phe Asp Phe Phe Pro Phe Lys Val Ala Phe Ser
 385 390 395 400

Arg Gly Val Phe Ser Gln Lys Cys Ser Val Ser Pro Ile Leu Ile Leu
 405 410 415

Cys Leu Leu Leu Leu Gly Val Leu Asn Leu Glu Thr Met
 420 425

<210> 12
 <211> 443
 <212> PRT
 <213> Homo sapiens

<400> 12

Met Arg Thr Pro Gln Leu Ala Leu Leu Gln Val Phe Phe Leu Val Phe
 1 5 10 15

Pro Asp Gly Val Arg Pro Gln Pro Ser Ser Ser Pro Ser Gly Ala Val
 20 25 30

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

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

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

Val Asp Leu Phe Pro Val Leu Pro Ile Cys Val Cys Asp Leu Thr Pro
 85 90 95

Gly Ala Cys Asp Ile Asn Cys Cys Cys Asp Arg Asp Cys Tyr Leu Leu
 100 105 110

His Pro Arg Thr Val Phe Ser Phe Cys Leu Pro Gly Ser Val Arg Ser
 115 120 125

Ser Ser Trp Val Cys Val Asp Asn Ser Val Ile Phe Arg Ser Asn Ser
 130 135 140

Pro Phe Pro Ser Arg Val Phe Met Asp Ser Asn Gly Ile Arg Gln Phe
 145 150 155 160

Cys Val His Val Asn Asn Ser Asn Leu Asn Tyr Phe Gln Lys Leu Gln
 165 170 175

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

Glu Ser Phe Thr Ser Thr Phe Gln Thr Gln Ser Pro Pro Ser Phe Tyr
 195 200 205

Arg Ala Gly Asp Pro Ile Leu Thr Tyr Phe Pro Lys Trp Ser Val Ile
 210 215 220

Ser Leu Leu Arg Gln Pro Ala Gly Val Gly Ala Gly Gly Leu Cys Ala
 225 230 235 240

Glu Ser Asn Pro Ala Gly Phe Leu Glu Ser Lys Ser Thr Thr Cys Thr
 245 250 255

Arg Phe Phe Lys Asn Leu Ala Ser Ser Cys Thr Leu Asp Ser Ala Leu
 260 265 270

Asn Ala Ala Ser Tyr Tyr Asn Phe Thr Val Leu Lys Val Pro Arg Ser
 275 280 285

Met Thr Asp Pro Gln Asn Met Glu Phe Gln Val Pro Val Ile Leu Thr
 290 295 300

Ser Gln Ala Asn Ala Pro Leu Leu Ala Gly Asn Thr Cys Gln Asn Val
 305 310 315 320

Val Ser Gln Val Thr Tyr Glu Ile Glu Thr Asn Gly Thr Phe Gly Ile
 325 330 335

Gln Lys Val Ser Val Ser Leu Gly Gln Thr Asn Leu Thr Val Glu Pro
 340 345 350

Gly Ala Ser Leu Gln Gln His Phe Ile Leu Arg Phe Arg Ala Phe Gln
 355 360 365

Gln Ser Thr Ala Ala Ser Leu Thr Ser Pro Arg Ser Gly Asn Pro Gly
 370 375 380

Tyr Ile Val Gly Lys Pro Leu Leu Ala Leu Thr Asp Asp Ile Ser Tyr
 385 390 395 400

Ser Val Ser Phe Leu Glu Leu Gly Gly Leu Leu Gln Pro Asn Glu Lys
 405 410 415

Ser Cys Lys Gly Phe Gln Thr Tyr Val Arg Leu Ala Lys Gly Glu Glu
 420 425 430

Phe Phe Val His Tyr Asn Glu Val Leu Ile Tyr
 435 440

<211> 607
 <212> PRT
 <213> Homo sapiens

<400> 13

Met Arg Thr Pro Gln Leu Ala Leu Leu Gln Val Phe Phe Leu Val Phe
 1 5 10 15

Pro Asp Gly Val Arg Pro Gln Pro Ser Ser Ser Pro Ser Gly Ala Val
 20 25 30

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

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

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

Val Asp Leu Phe Pro Val Leu Pro Ile Cys Val Cys Asp Leu Thr Pro
 85 90 95

Gly Ala Cys Asp Ile Asn Cys Cys Cys Asp Arg Asp Cys Tyr Leu Leu
 100 105 110

His Pro Arg Thr Val Phe Ser Phe Cys Leu Pro Gly Ser Val Arg Ser
 115 120 125

Ser Ser Trp Val Cys Val Asp Asn Ser Val Ile Phe Arg Ser Asn Ser
 130 135 140

Pro Phe Pro Ser Arg Val Phe Met Asp Ser Asn Gly Ile Arg Gln Phe
 145 150 155 160

Cys Val His Val Asn Asn Ser Asn Leu Asn Tyr Phe Gln Lys Leu Gln
 165 170 175

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

Glu Ser Phe Thr Ser Thr Phe Gln Thr Gln Ser Pro Pro Ser Phe Tyr
 195 200 205

Arg Ala Gly Asp Pro Ile Leu Thr Tyr Phe Pro Lys Trp Ser Val Ile
 210 215 220

Ser Leu Leu Arg Gln Pro Ala Gly Val Gly Ala Gly Gly Leu Cys Ala
 225 230 235 240

Glu Ser Asn Pro Ala Gly Phe Leu Glu Ser Lys Ser Thr Thr Cys Thr
 245 250 255

Arg Phe Phe Lys Asn Leu Ala Ser Ser Cys Thr Leu Asp Ser Ala Leu
 260 265 270

Asn Ala Ala Ser Tyr Tyr Asn Phe Thr Val Leu Lys Val Pro Arg Ser
 275 280 285

Met Thr Asp Pro Gln Asn Met Glu Phe Gln Val Pro Val Ile Leu Thr
 290 295 300

Ser Gln Ala Asn Ala Pro Leu Leu Ala Gly Asn Thr Cys Gln Asn Val
 305 310 315 320

Val Ser Gln Val Thr Tyr Glu Ile Glu Thr Asn Gly Thr Phe Gly Ile
 325 330 335

Gln Lys Val Ser Val Ser Leu Gly Gln Thr Asn Leu Thr Val Glu Pro
 340 345 350

Gly Ala Ser Leu Gln Gln His Phe Ile Leu Arg Phe Arg Ala Phe Gln
 355 360 365

Gln Ser Thr Ala Ala Ser Leu Thr Ser Pro Arg Ser Gly Asn Pro Gly
 370 375 380

Tyr Ile Val Gly Lys Pro Leu Leu Ala Leu Thr Asp Asp Ile Ser Tyr
 385 390 395 400

Ser Met Thr Leu Leu Gln Ser Gln Gly Asn Gly Ser Cys Ser Val Lys
 405 410 415

Arg His Glu Val Gln Phe Gly Val Asn Ala Ile Ser Gly Cys Lys Leu
 420 425 430

Arg Leu Lys Lys Ala Asp Cys Ser His Leu Gln Gln Glu Ile Tyr Gln
 435 440 445

Thr Leu His Gly Arg Pro Arg Pro Glu Tyr Val Ala Ile Phe Gly Asn
 450 455 460

Ala Asp Pro Ala Gln Lys Gly Gly Trp Thr Arg Ile Leu Asn Arg His
 465 470 475 480

30

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

Ser Leu Glu Ile Gln Val Leu Trp Ala Tyr Val Gly Leu Leu Ser Asn
500 505 510

Pro Gln Ala His Val Ser Gly Val Arg Phe Leu Tyr Gln Cys Gln Ser
515 520 525

Ile Gln Asp Ser Gln Gln Val Thr Glu Val Ser Leu Thr Thr Leu Val
530 535 540

Asn Phe Val Asp Ile Thr Gln Lys Pro Gln Pro Pro Arg Gly Gln Pro
545 550 555 560

Lys Met Asp Trp Lys Trp Pro Phe Asp Phe Phe Pro Phe Lys Val Ala
565 570 575

Phe Ser Arg Gly Val Phe Ser Gln Lys Cys Ser Val Ser Pro Ile Leu
580 585 590

Ile Leu Cys Leu Leu Leu Leu Gly Val Leu Asn Leu Glu Thr Met
595 600 605

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<210> 14
<211> 106
<212> PRT
<213> Homo sapiens
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<400> 14

Met Ala Thr Pro Gly Pro Val Ile Pro Glu Val Pro Phe Glu Pro Ser
1 5 10 15

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

Glu Ser Phe Lys Glu Lys Phe Val Arg Lys Thr Arg Glu Asn Pro Val
35 40 45

Val Pro Ile Gly Cys Leu Ala Thr Ala Ala Ala Leu Thr Tyr Gly Leu
50 55 60

Tyr Ser Phe His Arg Gly Asn Ser Gln Arg Ser Gln Leu Met Met Arg
65 70 75 80

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

31

Leu Ala Val Thr Ala Met Lys Ser Arg Pro
 100 105

<210> 15
 <211> 106
 <212> PRT
 <213> Homo sapiens
 <400> 15

Met Ala Thr Leu Gly Phe Val Thr Pro Glu Ala Pro Phe Glu Ser Ser
 1 5 10 15

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

Glu Gly Phe Lys Glu Lys Phe Leu Arg Lys Thr Arg Glu Asn Pro Val
 35 40 45

Val Pro Ile Gly Phe Leu Cys Thr Ala Ala Val Leu Thr Asn Gly Leu
 50 55 60

Tyr Cys Phe His Gln Gly Asn Ser Gln Cys Ser Arg Leu Met Met His
 65 70 75 80

Thr Gln Ile Ala Ala Gln Gly Phe Thr Ile Ala Ala Ile Leu Leu Gly
 85 90 95

Leu Ala Ala Thr Ala Met Lys Ser Pro Pro
 100 105

<210> 16
 <211> 132
 <212> PRT
 <213> Homo sapiens
 <400> 16

Met Cys Ser Ala Gly Glu Leu Leu Arg Gly Gly Asp Gly Gly Glu Arg
 1 5 10 15

Asp Glu Asp Gly Asp Ala Leu Ala Glu Arg Glu Ala Ala Gly Thr Gly
 20 25 30

Trp Asp Pro Gly Ala Ser Pro Arg Arg Arg Gly Gln Arg Pro Lys Glu
 35 40 45

Ser Glu Gln Asp Val Glu Asp Ser Gln Asn His Thr Gly Glu Pro Val
 50 55 60

Gly Asp Asp Tyr Lys Lys Met Gly Thr Leu Phe Gly Glu Leu Asn Lys
65 70 75 80

Asn Leu Ile Asn Met Gly Phe Thr Arg Met Tyr Phe Gly Glu Arg Ile
85 90 95

Val Glu Pro Val Ile Val Ile Phe Phe Trp Val Met Leu Trp Phe Leu
100 105 110

Gly Leu Gln Ala Leu Gly Leu Val Ala Val Leu Cys Leu Val Ile Ile
115 120 125

Tyr Val Gln Gln
130

<210> 17
<211> 1104
<212> PRT
<213> Homo sapiens

<400> 17

Met Glu Arg Ser Pro Gly Glu Gly Pro Ser Pro Ser Pro Met Asp Gln
1 5 10 15

Pro Ser Ala Pro Ser Asp Pro Thr Asp Gln Pro Pro Ala Ala His Ala
20 25 30

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

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

Leu Ile Pro Val Tyr Leu Ala Gly Ala Val Gly Leu Ser Val Gly Phe
65 70 75 80

Val Leu Phe Gly Leu Ala Leu Tyr Leu Gly Trp Arg Arg Val Arg Asp
85 90 95

Glu Lys Glu Arg Ser Leu Arg Ala Ala Arg Gln Leu Leu Asp Asp Glu
100 105 110

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

Ala Trp Val Ser Phe Pro Asp Val Glu Lys Ala Glu Trp Leu Asn Lys
130 135 140

Ile Val Ala Gln Val Trp Pro Phe Leu Gly Gln Tyr Met Glu Lys Leu
145 150 155 160

Leu Ala Glu Thr Val Ala Pro Ala Val Arg Gly Ser Asn Pro His Leu
165 170 175

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

Ile Ile Gly Val Lys Val His Pro Gly Gln Arg Lys Glu Gln Ile Leu
195 200 205

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

Val Lys Lys Tyr Phe Cys Lys Ala Gly Val Lys Gly Met Gln Leu His
225 230 235 240

Gly Val Leu Arg Val Ile Leu Glu Pro Leu Ile Gly Asp Leu Pro Phe
245 250 255

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

Asn Trp Thr Gly Met Thr Asn Leu Leu Asp Ile Pro Gly Leu Ser Ser
275 280 285

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

Pro Asn Arg Leu Leu Val Pro Leu Val Pro Asp Leu Gln Asp Val Ala
305 310 315 320

Gln Leu Arg Ser Pro Leu Pro Arg Gly Ile Ile Arg Ile His Leu Leu
325 330 335

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

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

Phe Cys Ser Arg Val Ile Asp Glu Glu Leu Asn Pro Gln Trp Gly Glu
370 375 380

Thr Tyr Glu Val Met Val His Glu Val Pro Gly Gln Glu Ile Glu Val
385 390 395 400

Glu Val Phe Asp Lys Asp Pro Asp Lys Asp Asp Phe Leu Gly Arg Met
405 410 415

Lys Leu Asp Val Gly Lys Val Leu Gln Ala Ser Val Leu Asp Asp Trp
420 425 430

Phe Pro Leu Gln Gly Gly Gln Gly Gln Val His Leu Arg Leu Glu Trp
435 440 445

Leu Ser Leu Leu Ser Asp Ala Glu Lys Leu Glu Gln Val Leu Gln Trp
450 455 460

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

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

Lys Glu Pro Asn Pro Met Val Gln Leu Ser Ile Gln Asp Val Thr Gln
500 505 510

Glu Ser Lys Ala Val Tyr Ser Thr Asn Cys Pro Val Trp Glu Glu Ala
515 520 525

Phe Arg Phe Phe Leu Gln Asp Pro Gln Ser Gln Glu Leu Asp Val Gln
530 535 540

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

Leu Ala Arg Leu Leu Thr Ala Pro Glu Leu Ile Leu Asp Gln Trp Phe
565 570 575

Gln Leu Ser Ser Ser Gly Pro Asn Ser Arg Leu Tyr Met Lys Leu Val
580 585 590

Met Arg Ile Leu Tyr Leu Asp Ser Ser Glu Ile Cys Phe Pro Thr Val
595 600 605

Pro Gly Cys Pro Gly Ala Trp Asp Val Asp Ser Glu Asn Pro Gln Arg
610 615 620

Gly Ser Ser Val Asp Ala Pro Pro Arg Pro Cys His Thr Thr Pro Asp
625 630 635 640

Ser Gln Phe Gly Thr Glu His Val Leu Arg Ile His Val Leu Glu Ala
645 650 655

Gln Asp Leu Ile Ala Lys Asp Arg Phe Leu Gly Gly Leu Val Lys Gly
 660 665 670

Lys Ser Asp Pro Tyr Val Lys Leu Lys Leu Ala Gly Arg Ser Phe Arg
 675 680 685

Ser His Val Val Arg Glu Asp Leu Asn Pro Arg Trp Asn Glu Val Phe
 690 695 700

Glu Val Ile Val Thr Ser Val Pro Gly Gln Glu Leu Glu Val Glu Val
 705 710 715 720

Phe Asp Lys Asp Leu Asp Lys Asp Asp Phe Leu Gly Arg Cys Lys Val
 725 730 735

Arg Leu Thr Thr Val Leu Asn Ser Gly Phe Leu Asp Glu Trp Leu Thr
 740 745 750

Leu Glu Asp Val Pro Ser Gly Arg Leu His Leu Arg Leu Glu Arg Leu
 755 760 765

Thr Pro Arg Pro Thr Ala Ala Glu Leu Glu Glu Val Leu Gln Val Asn
 770 775 780

Ser Leu Ile Gln Thr Gln Lys Ser Ala Glu Leu Ala Ala Ala Leu Leu
 785 790 795 800

Ser Ile Tyr Met Glu Arg Ala Glu Asp Leu Pro Leu Arg Lys Gly Thr
 805 810 815

Lys His Leu Ser Pro Tyr Ala Thr Leu Thr Val Gly Asp Ser Ser His
 820 825 830

Lys Thr Lys Thr Ile Ser Gln Thr Ser Ala Pro Val Trp Asp Glu Ser
 835 840 845

Ala Ser Phe Leu Ile Arg Lys Pro His Thr Glu Ser Leu Glu Leu Gln
 850 855 860

Val Arg Gly Glu Gly Thr Gly Val Leu Gly Ser Leu Ser Leu Pro Leu
 865 870 875 880

Ser Glu Leu Leu Val Ala Asp Gln Leu Cys Leu Asp Arg Trp Phe Thr
 885 890 895

Leu Ser Ser Gly Gln Gly Gln Val Leu Leu Arg Ala Gln Leu Gly Ile
 900 905 910

36

Leu Val Ser Gln His Ser Gly Val Glu Ala His Ser His Ser Tyr Ser
915 920 925

His Ser Ser Ser Ser Leu Ser Glu Glu Pro Glu Leu Ser Gly Gly Pro
930 935 940

Pro His Ile Thr Ser Ser Ala Pro Glu Leu Arg Gln Arg Leu Thr His
945 950 955 960

Val Asp Ser Pro Leu Glu Ala Pro Ala Gly Pro Leu Gly Gln Val Lys
965 970 975

Leu Thr Leu Trp Tyr Tyr Ser Glu Glu Arg Lys Leu Val Ser Ile Val
980 985 990

His Gly Cys Arg Ser Leu Arg Gln Asn Gly Arg Asp Pro Pro Asp Pro
995 1000 1005

Tyr Val Ser Leu Leu Leu Leu Pro Asp Lys Asn Arg Gly Thr Lys
1010 1015 1020

Arg Arg Thr Ser Gln Lys Lys Arg Thr Leu Ser Pro Glu Phe Asn
1025 1030 1035

Glu Arg Phe Glu Trp Glu Leu Pro Leu Asp Glu Ala Gln Arg Arg
1040 1045 1050

Lys Leu Asp Val Ser Val Lys Ser Asn Ser Ser Phe Met Ser Arg
1055 1060 1065

Glu Arg Glu Leu Leu Gly Lys Val Gln Leu Asp Leu Ala Glu Thr
1070 1075 1080

Asp Leu Ser Gln Gly Val Ala Arg Trp Tyr Asp Leu Met Asp Asn
1085 1090 1095

Lys Asp Lys Gly Ser Ser
1100

<210> 18

<211> 1114

<212> PRT

<213> Homo sapiens

<400> 18

Met Glu Arg Ser Pro Gly Glu Gly Pro Ser Pro Ser Pro Met Asp Gln
1 5 10 15

Pro Ser Ala Pro Ser Asp Pro Thr Asp Gln Pro Pro Ala Ala His Ala
 20 25 30

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

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

Leu Ile Pro Val Tyr Leu Ala Gly Ala Val Gly Leu Ser Val Gly Phe
 65 70 75 80

Val Leu Phe Gly Leu Ala Leu Tyr Leu Gly Trp Arg Arg Val Arg Asp
 85 90 95

Glu Lys Glu Arg Ser Leu Arg Ala Ala Arg Gln Leu Leu Asp Asp Glu
 100 105 110

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

Ala Trp Val Ser Phe Pro Asp Val Glu Lys Ala Glu Trp Leu Asn Lys
 130 135 140

Ile Val Ala Gln Val Trp Pro Phe Leu Gly Gln Tyr Met Glu Lys Leu
 145 150 155 160

Leu Ala Glu Thr Val Ala Pro Ala Val Arg Gly Ser Asn Pro His Leu
 165 170 175

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

Ile Ile Gly Val Lys Val His Pro Gly Gln Arg Lys Glu Gln Ile Leu
 195 200 205

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

Val Lys Lys Tyr Phe Cys Lys Ala Gly Val Lys Gly Met Gln Leu His
 225 230 235 240

Gly Val Leu Arg Val Ile Leu Glu Pro Leu Ile Gly Asp Leu Pro Phe
 245 250 255

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

Asn Trp Thr Gly Met Thr Asn Leu Leu Asp Ile Pro Gly Leu Ser Ser
 275 280 285

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

Pro Asn Arg Leu Leu Val Pro Leu Val Pro Asp Leu Gln Asp Val Ala
 305 310 315 320

Gln Leu Arg Ser Pro Leu Pro Arg Gly Ile Ile Arg Ile His Leu Leu
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Ala Ala Arg Gly Leu Ser Ser Lys Asp Lys Tyr Val Lys Gly Leu Ile
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Glu Gly Lys Ser Asp Pro Tyr Ala Leu Val Arg Leu Gly Thr Gln Thr
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 370 375 380

Thr Tyr Glu Val Met Val His Glu Val Pro Gly Gln Glu Ile Glu Val
 385 390 395 400

Glu Val Phe Asp Lys Asp Pro Asp Lys Asp Asp Phe Leu Gly Arg Met
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Lys Leu Asp Val Gly Lys Val Leu Gln Ala Ser Val Leu Asp Asp Trp
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Phe Pro Leu Gln Gly Gly Gln Gly Gln Val His Leu Arg Leu Glu Trp
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Leu Tyr Pro Pro Gln Leu Lys Lys Gly Asn Lys Glu Pro Asn Pro Met
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Val Gln Leu Ser Ile Gln Asp Val Thr Gln Glu Ser Lys Ala Val Tyr
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Asp Pro Gln Ser Gln Glu Leu Asp Val Gln Val Lys Asp Asp Ser Arg
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Trp Asp Val Asp Ser Glu Asn Pro Gln Arg Gly Ser Ser Val Asp Ala
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Asp Arg Phe Leu Gly Gly Leu Val Lys Gly Lys Ser Asp Pro Tyr Val
 675 680 685

Lys Leu Lys Leu Ala Gly Arg Ser Phe Arg Ser His Val Val Arg Glu
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Val Pro Gly Gln Glu Leu Glu Val Glu Val Phe Asp Lys Asp Leu Asp
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Lys Asp Asp Phe Leu Gly Arg Cys Lys Val Arg Leu Thr Thr Val Leu
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Asn Ser Gly Phe Leu Asp Glu Trp Leu Thr Leu Glu Asp Val Pro Ser
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Gly Arg Leu His Leu Arg Leu Glu Arg Leu Thr Pro Arg Pro Thr Ala
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820 825 830

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Asp Gln Leu Cys Leu Asp Arg Trp Phe Thr Leu Ser Ser Gly Gln Gly
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Gly Val Glu Ala His Ser His Ser Tyr Ser His Ser Ser Ser Ser Leu
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980 985 990

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41

Lys Lys Arg Thr Leu Ser Pro Glu Phe Asn Glu Arg Phe Glu Trp
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 <212> PRT
 <213> Homo sapiens

<400> 19

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Glu Lys Glu Arg Ser Leu Arg Ala Ala Arg Gln Leu Leu Asp Asp Glu
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Glu Gln Leu Thr Ala Lys Thr Leu Tyr Met Ser His Arg Glu Leu Pro
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Val Gly Ala Val Ser Met Phe Phe Ile Arg Arg Pro Thr Leu Asp Ile
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Ala Ala Arg Gly Leu Ser Ser Lys Asp Lys Tyr Val Lys Gly Leu Ile
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Glu Gly Lys Ser Asp Pro Tyr Ala Leu Val Arg Leu Gly Thr Gln Thr
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43

Thr Tyr Glu Val Met Val His Glu Val Pro Gly Gln Glu Ile Glu Val
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Glu Val Phe Asp Lys Asp Pro Asp Lys Asp Asp Phe Leu Gly Arg Met
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Phe Pro Leu Gln Gly Gly Gln Gly Gln Val His Leu Arg Leu Glu Trp
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Val Val Tyr Leu Asp Arg Ala Gln Asp Leu Pro Leu Lys Lys Gly Asn
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Pro Gly Cys Pro Gly Ala Trp Asp Val Asp Ser Glu Asn Pro Gln Arg
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 Thr Pro Arg Pro Thr Ala Ala Glu Leu Glu Glu Val Leu Gln Val Asn
 770 775 780

 Ser Leu Ile Gln Thr Gln Lys Ser Ala Glu Leu Ala Ala Ala Leu Leu
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 Ser Ile Tyr Met Glu Arg Ala Glu Asp Leu Pro Leu Arg Lys Gly Thr
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 Lys His Leu Ser Pro Tyr Ala Thr Leu Thr Val Gly Asp Ser Ser His
 820 825 830

 Lys Thr Lys Thr Ile Ser Gln Thr Ser Ala Pro Val Trp Asp Glu Ser
 835 840 845

 Ala Ser Phe Leu Ile Arg Lys Pro His Thr Glu Ser Leu Glu Leu Gln
 850 855 860

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 Ser Glu Leu Leu Val Ala Asp Gln Leu Cys Leu Asp Arg Trp Phe Thr
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Leu Val Ser Gln His Ser Gly Val Glu Ala His Ser His Ser Tyr Ser
915 920 925

His Ser Ser Ser Ser Leu Ser Glu Glu Pro Glu Leu Ser Gly Gly Pro
930 935 940

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

Leu Thr Leu Trp Tyr Tyr Ser Glu Glu Arg Lys Leu Val Ser Ile Val
980 985 990

His Gly Cys Arg Ser Leu Arg Gln Asn Gly Arg Asp Pro Pro Asp Pro
995 1000 1005

Tyr Val Ser Leu Leu Leu Leu Pro Asp Lys Asn Arg Gly Thr Lys
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<211> 1667

<212> DNA

<213> Homo sapiens

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<211> 1536

<212> DNA

<213> Homo sapiens

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<211> 1909

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<213> Homo sapiens

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