

SEQUENCE LISTING

<110> ALTEOGEN Inc.
 <120> PHARMACEUTICAL COMPOSITION FOR SUBCUTANEOUS ADMINISTRATION
 CONTAINING HUMAN HYALURONIDASE PH20 VARIANT AND DRUG
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 <160> 53
 <170> PatentIn version 3.5
 <210> 1
 <211> 509
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Synthetic Construct
 <400> 1

Met Gly Val Leu Lys Phe Lys His Ile Phe Phe Arg Ser Phe Val Lys
 1 5 10 15

Ser Ser Gly Val Ser Gln Ile Val Phe Thr Phe Leu Leu Ile Pro Cys
 20 25 30

Cys Leu Thr Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro
 35 40 45

Phe Leu Trp Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe
 50 55 60

Asp Glu Pro Leu Asp Met Ser Leu Phe Ser Phe Ile Gly Ser Pro Arg
 65 70 75 80

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

Gly Tyr Tyr Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly
 100 105 110

Gly Ile Pro Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys
 115 120 125

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

Ile Asp Trp Glu Glu Trp Arg Pro Thr Trp Ala Arg Asn Trp Lys Pro
 145 150 155 160

Lys Asp Val Tyr Lys Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn
 165 170 175

Val Gln Leu Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe
 180 185 190

Glu Lys Ala Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys
 195 200 205

Leu Leu Arg Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys
 210 215 220

Tyr Asn His His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn
 225 230 235 240

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

Thr Ala Leu Tyr Pro Ser Ile Tyr Leu Asn Thr Gln Gln Ser Pro Val
 260 265 270

Ala Ala Thr Leu Tyr Val Arg Asn Arg Val Arg Glu Ala Ile Arg Val
 275 280 285

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

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

Leu Val Tyr Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile
 325 330 335

Val Ile Trp Gly Thr Leu Ser Ile Met Arg Ser Met Lys Ser Cys Leu
 340 345 350

Leu Leu Asp Asn Tyr Met Glu Thr Ile Leu Asn Pro Tyr Ile Ile Asn
 355 360 365

Val Thr Leu Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln
 370 375 380

Gly Val Cys Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu
 385 390 395 400

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

Val Arg Gly Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys
 420 425 430

Phe Tyr Cys Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp
 435 440 445

Val Lys Asp Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys
 450 455 460

Ile Asp Ala Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile
 465 470 475 480

Phe Tyr Asn Ala Ser Pro Ser Thr Leu Ser Ala Thr Met Phe Ile Val
 485 490 495

Ser Ile Leu Phe Leu Ile Ile Ser Ser Val Ala Ser Leu
 500 505

<210> 2
 <211> 26

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 2

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

Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala
 20 25

<210> 3
 <211> 18
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 3

Met Lys Trp Val Thr Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala
 1 5 10 15

Tyr Ser

<210> 4
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 4

Met Ala Ala His Leu Leu Pro Ile Cys Ala Leu Phe Leu Thr Leu Leu
 1 5 10 15

Asp Met Ala Gln Gly
 20

<210> 5
 <211> 455

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 5

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Gly Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 6
 <211> 455
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 6

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Phe Ile Leu Asn Val Thr Ser
 325 330 335

Gly Ala Leu Leu Cys Ser Gln Ala Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 7

<211> 455

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 7

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Gly Pro Phe Ile Leu Asn Val Thr Ser
 325 330 335

Gly Ala Leu Leu Cys Ser Gln Ala Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 8

<211> 455

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 8

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Val Ser Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Gly Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
435 440 445

Ala Ser Pro Ser Thr Leu Ser
450 455

$\langle 210 \rangle$ 9

<211> 455

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic Construct

<400> 9

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 10
 <211> 455
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 10

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Val Ser Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 11
 <211> 455

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 11

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Leu Ser Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 12
 <211> 455
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 12

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Leu Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 13
 <211> 455
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 13

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 14
 <211> 455

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 14

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Phe Ile Leu Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 15
 <211> 455
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 15

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Phe Ile Leu Asn Val Thr Ser
 325 330 335

Gly Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
 450 455

<210> 16
 <211> 453
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 16

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Leu Ser Ile Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser
 435 440 445

Pro Ser Thr Leu Ser
 450

<210> 17

<211> 430

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 17

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile
420 425 430

<210> 18

<211> 433

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic Construct

<400> 18

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe

<210> 19
 <211> 436
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 19

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

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

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro
 435

<210> 20
 <211> 452
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 20

Phe Arg Gly Pro Leu Leu Pro Asn Arg Pro Phe Leu Trp Ala Trp Asn
 1 5 10 15

Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu Asp Met
 20 25 30

Ser Leu Phe Ser Phe Ile Gly Ser Pro Arg Ile Asn Ala Thr Gly Gln
 35 40 45

Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr Pro Tyr Ile
 50 55 60

Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys Ile
 65 70 75 80

Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr Phe Tyr
 85 90 95

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

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

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

Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys Asp
 145 150 155 160

Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn His
 165 170 175

Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr Lys
 180 185 190

Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg Asn
 195 200 205

Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro Ser
 210 215 220

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

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

Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr Asp
 260 265 270

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

Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr Leu
 290 295 300

Ser Ile Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr Met
 305 310 315 320

Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala Lys
 325 330 335

Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg Lys
 340 345 350

Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe Ala
 355 360 365

Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro Thr
 370 375 380

Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys Tyr
 385 390 395 400

Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp Ala
 405 410 415

Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu Lys
 420 425 430

Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser Pro
 435 440 445

Ser Thr Leu Ser
 450

<210> 21
 <211> 452
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 21

Phe Arg Gly Pro Leu Leu Pro Asn Arg Pro Phe Thr Thr Val Trp Asn
 1 5 10 15

Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu Asp Met
 20 25 30

Ser Leu Phe Ser Phe Ile Gly Ser Pro Arg Ile Asn Ala Thr Gly Gln
 35 40 45

Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr Pro Tyr Ile
 50 55 60

Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys Ile
 65 70 75 80

Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr Phe Tyr
 85 90 95

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

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

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

Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys Asp
 145 150 155 160

Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn His
 165 170 175

Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr Lys
 180 185 190

Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg Asn
 195 200 205

Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro Ser
 210 215 220

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

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

Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr Asp
 260 265 270

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

Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr Leu
 290 295 300

Ser Ile Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr Met
 305 310 315 320

Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala Lys
 325 330 335

Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg Lys
 340 345 350

Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe Ala
 355 360 365

Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro Thr
 370 375 380

Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys Tyr
 385 390 395 400

Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp Ala
 405 410 415

Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu Lys
 420 425 430

Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser Pro
 435 440 445

Ser Thr Leu Ser
 450

<210> 22
 <211> 433
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 22

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys

<210> 23
 <211> 431
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 23

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe
 420 425 430

<210> 24

<211> 455

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 24

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Ser Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

Phe Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn
 435 440 445

Ala Ser Pro Ser Thr Leu Ser
450 455

<210> 25
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Construct

<400> 25

Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp Asn Ala
1 5 10 15

Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu Asp Met Ser
20 25 30

Leu Phe Ser Phe Ile Gly Ser Pro Arg Ile Asn Ala Thr Gly Gln Gly
35 40 45

Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr Pro Tyr Ile Asp
50 55 60

Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys Ile Ser
65 70 75 80

Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr Phe Tyr Met
85 90 95

Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu Trp Arg
100 105 110

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

Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu Thr Glu
130 135 140

Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys Asp Phe
145 150 155 160

Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn His Leu
 165 170 175

Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr Lys Lys
 180 185 190

Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg Asn Asp
 195 200 205

Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro Ser Ile
 210 215 220

Tyr Leu Asn Thr Gln Gln Ser Pro Val Ala Ala Thr Leu Tyr Val Arg
 225 230 235 240

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

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

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

Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr Leu Ser
 290 295 300

Ile Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr Met Asp
 305 310 315 320

Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala Lys Met
 325 330 335

Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg Lys Asn
 340 345 350

Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe Ala Ile
 355 360 365

Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro Thr Leu
 370 375 380

Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys Tyr Ser
 385 390 395 400

Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp Ala Val
 405 410 415

Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu Lys Pro
 420 425 430

Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser Pro Ser
 435 440 445

Thr Leu Ser
 450

<210> 26
 <211> 449
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 26

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

Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu Asp Met Ser Leu Phe
 20 25 30

Ser Phe Ile Gly Ser Pro Arg Ile Asn Ala Thr Gly Gln Gly Val Thr
 35 40 45

Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr Pro Tyr Ile Asp Ser Ile
 50 55 60

Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys Ile Ser Leu Gln
 65 70 75 80

Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr Phe Tyr Met Pro Val
85 90 95

Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu Trp Arg Pro Thr
100 105 110

Trp Ala Arg Asn Trp Lys Pro Lys Asp Val Tyr Lys Asn Arg Ser Ile
115 120 125

Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu Thr Glu Ala Thr
130 135 140

Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys Asp Phe Leu Val
145 150 155 160

Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn His Leu Trp Gly
165 170 175

Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr Lys Lys Pro Gly
180 185 190

Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg Asn Asp Asp Leu
195 200 205

Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro Ser Ile Tyr Leu
210 215 220

Asn Thr Gln Gln Ser Pro Val Ala Ala Thr Leu Tyr Val Arg Asn Arg
225 230 235 240

Val Arg Glu Ala Ile Arg Val Ser Lys Ile Pro Asp Ala Lys Ser Pro
245 250 255

Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr Asp Gln Val Leu
260 265 270

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

Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr Leu Ser Ile Thr
290 295 300

Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr Met Asp Thr Thr
 305 310 315 320

Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala Lys Met Cys Ser
 325 330 335

Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg Lys Asn Trp Asn
 340 345 350

Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe Ala Ile Gln Leu
 355 360 365

Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro Thr Leu Glu Asp
 370 375 380

Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys Tyr Ser Thr Leu
 385 390 395 400

Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp Ala Val Asp Val
 405 410 415

Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu Lys Pro Pro Met
 420 425 430

Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser Pro Ser Thr Leu
 435 440 445

Ser

<210> 27

<211> 432

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 27

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

<210> 28

<211> 429

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 28

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys
420 425

<210> 29

<211> 426

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic Construct

<400> 29

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val Asp Val Cys Ile Ala Asp
 420 425

<210> 30

<211> 423

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 30

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
 1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
 20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
 50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
 65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
 85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
 100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
 145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
 165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
 180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
 195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
 210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
 260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
405 410 415

Thr Asp Ala Val Asp Val Cys
420

<210>	31
<211>	420
<212>	PRT
<213>	Artificial Sequence

<220>
<223> Synthetic Construct

<400> 31

Leu Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp
1 5 10 15

Ala Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro
20 25 30

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

Thr Gly Gln Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr
50 55 60

Pro Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro
65 70 75 80

Gln Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile
85 90 95

Thr Phe Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp
100 105 110

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

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

Ser Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala
145 150 155 160

Gly Lys Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg
165 170 175

Pro Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His
180 185 190

His Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile
195 200 205

Lys Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu
210 215 220

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

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

Pro Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val
260 265 270

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

Thr Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp
 290 295 300

Gly Thr Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys
 305 310 315 320

Glu Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu
 325 330 335

Ala Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys
 340 345 350

Ile Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp
 355 360 365

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

Lys Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys
 385 390 395 400

Ser Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp
 405 410 415

Thr Asp Ala Val
 420

<210> 32
 <211> 433
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 32

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Ser
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys

<210> 33

<211> 435

<212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 33

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro
 435

<210> 34
 <211> 436
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 34

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
420 425 430

Lys Pro Pro Met
435

$\langle 210 \rangle$	35
$\langle 211 \rangle$	437
$\langle 212 \rangle$	PRT
$\langle 213 \rangle$	Artificial Sequence

<220>
<223> Synthetic Construct

<400> 35

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu
 435

<210> 36

<211> 438

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 36

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr
 435

<210> 37
 <211> 439
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 37

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu
 435

<210> 38

<211> 454

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 38

Asn Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala
 1 5 10 15

Trp Asn Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu
 20 25 30

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

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

Tyr Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln
 65 70 75 80

Lys Ile Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr
 85 90 95

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

Glu Trp Arg Pro Thr Trp Ala Arg Asn Trp Lys Pro Lys Asp Val Tyr
 115 120 125

Lys Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser
 130 135 140

Leu Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly
 145 150 155 160

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

Asn His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His
 180 185 190

Tyr Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys
 195 200 205

Arg Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr
 210 215 220

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

Tyr Val Arg Asn Arg Val Arg Glu Ala Ile Arg Val Ser Lys Ile Pro
 245 250 255

Asp Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe
 260 265 270

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

Phe Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly
 290 295 300

Thr Leu Ser Ile Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu
 305 310 315 320

Tyr Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala
 325 330 335

Ala Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile
 340 345 350

Arg Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn
 355 360 365

Phe Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys
 370 375 380

Pro Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser
 385 390 395 400

Cys Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr
 405 410 415

Asp Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe
 420 425 430

Leu Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala
 435 440 445

Ser Pro Ser Thr Leu Ser
 450

<210> 39
 <211> 452
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 39

Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp Asn
 1 5 10 15

Ala Pro Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu Asp Met
 20 25 30

Ser Leu Phe Ser Phe Ile Gly Ser Pro Arg Ile Asn Ala Thr Gly Gln
 35 40 45

Gly Val Thr Ile Phe Tyr Val Asp Arg Leu Gly Tyr Tyr Pro Tyr Ile
 50 55 60

Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys Ile
 65 70 75 80

Ser Leu Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr Phe Tyr
 85 90 95

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

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

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

Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys Asp
 145 150 155 160

Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn His
 165 170 175

Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr Lys
 180 185 190

Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg Asn
 195 200 205

Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro Ser
 210 215 220

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

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

Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr Asp
 260 265 270

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

Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr Leu
 290 295 300

Ser Ile Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr Met
 305 310 315 320

Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala Lys
 325 330 335

Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg Lys
 340 345 350

Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe Ala
 355 360 365

Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro Thr
 370 375 380

Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys Tyr
 385 390 395 400

Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp Ala
 405 410 415

Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu Lys
 420 425 430

Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser Pro
 435 440 445

Ser Thr Leu Ser
 450

<210> 40
 <211> 450
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 40

Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp Asn Ala Pro
 1 5 10 15

Ser Glu Phe Cys Leu Gly Lys Phe Asp Glu Pro Leu Asp Met Ser Leu
 20 25 30

Phe Ser Phe Ile Gly Ser Pro Arg Ile Asn Ala Thr Gly Gln Gly Val
 35 40 45

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

Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys Ile Ser Leu
 65 70 75 80

Gln Asp His Leu Asp Lys Ala Lys Lys Asp Ile Thr Phe Tyr Met Pro
 85 90 95

Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu Trp Arg Pro
 100 105 110

Thr Trp Ala Arg Asn Trp Lys Pro Lys Asp Val Tyr Lys Asn Arg Ser
 115 120 125

Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu Thr Glu Ala
 130 135 140

Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys Asp Phe Leu
 145 150 155 160

Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn His Leu Trp
 165 170 175

Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr Lys Lys Pro
 180 185 190

Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg Asn Asp Asp
 195 200 205

Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro Ser Ile Tyr
 210 215 220

Leu Asn Thr Gln Gln Ser Pro Val Ala Ala Thr Leu Tyr Val Arg Asn
 225 230 235 240

Arg Val Arg Glu Ala Ile Arg Val Ser Lys Ile Pro Asp Ala Lys Ser
 245 250 255

Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr Asp Gln Val
 260 265 270

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

Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr Leu Ser Ile
 290 295 300

Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr Met Asp Thr
 305 310 315 320

Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala Lys Met Cys
 325 330 335

Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg Lys Asn Trp
 340 345 350

Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe Ala Ile Gln
 355 360 365

Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro Thr Leu Glu
 370 375 380

Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys Tyr Ser Thr
 385 390 395 400

Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp Ala Val Asp
 405 410 415

Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu Lys Pro Pro
 420 425 430

Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser Pro Ser Thr
 435 440 445

Leu Ser
 450

<210> 41
 <211> 428
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 41

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Ser
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile
 420 425

<210> 42

<211> 429

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 42

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Ser
290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp
 420 425

<210> 43

<211> 430

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 43

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Ser
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala
 420 425 430

<210> 44

<211> 431

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 44

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Ser
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe
 420 425 430

<210> 45
 <211> 441
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 45

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro
 435 440

<210> 46

<211> 443

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 46

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile
 435 440

<210> 47

<211> 445

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 47

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr
 435 440 445

<210> 48

<211> 447

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Construct

<400> 48

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala
 435 440 445

<210> 49
 <211> 449
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 49

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
 325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
 340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
 355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
 370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
 385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
 405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
 420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser
 435 440 445

Pro

<210> 50
 <211> 451
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Synthetic Construct

<400> 50

Phe Arg Ala Pro Pro Val Ile Pro Asn Val Pro Phe Leu Trp Ala Trp
 1 5 10 15

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

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

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

Ile Asp Ser Ile Thr Gly Val Thr Val Asn Gly Gly Ile Pro Gln Lys
 65 70 75 80

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

Tyr Met Pro Val Asp Asn Leu Gly Met Ala Val Ile Asp Trp Glu Glu
 100 105 110

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

Asn Arg Ser Ile Glu Leu Val Gln Gln Gln Asn Val Gln Leu Ser Leu
 130 135 140

Thr Glu Ala Thr Glu Lys Ala Lys Gln Glu Phe Glu Lys Ala Gly Lys
 145 150 155 160

Asp Phe Leu Val Glu Thr Ile Lys Leu Gly Lys Leu Leu Arg Pro Asn
 165 170 175

His Leu Trp Gly Tyr Tyr Leu Phe Pro Asp Cys Tyr Asn His His Tyr
 180 185 190

Lys Lys Pro Gly Tyr Asn Gly Ser Cys Phe Asn Val Glu Ile Lys Arg
 195 200 205

Asn Asp Asp Leu Ser Trp Leu Trp Asn Glu Ser Thr Ala Leu Tyr Pro
 210 215 220

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

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

Ala Lys Ser Pro Leu Pro Val Phe Ala Tyr Thr Arg Ile Val Phe Thr
 260 265 270

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

Gly Glu Thr Val Ala Leu Gly Ala Ser Gly Ile Val Ile Trp Gly Thr
 290 295 300

Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile Lys Glu Tyr
 305 310 315 320

Met Asp Thr Thr Leu Asn Pro Tyr Ile Ile Asn Val Thr Leu Ala Ala
325 330 335

Lys Met Cys Ser Gln Val Leu Cys Gln Glu Gln Gly Val Cys Ile Arg
340 345 350

Lys Asn Trp Asn Ser Ser Asp Tyr Leu His Leu Asn Pro Asp Asn Phe
355 360 365

Ala Ile Gln Leu Glu Lys Gly Gly Lys Phe Thr Val Arg Gly Lys Pro
370 375 380

Thr Leu Glu Asp Leu Glu Gln Phe Ser Glu Lys Phe Tyr Cys Ser Cys
385 390 395 400

Tyr Ser Thr Leu Ser Cys Lys Glu Lys Ala Asp Val Lys Asp Thr Asp
405 410 415

Ala Val Asp Val Cys Ile Ala Asp Gly Val Cys Ile Asp Ala Phe Leu
420 425 430

Lys Pro Pro Met Glu Thr Glu Glu Pro Gln Ile Phe Tyr Asn Ala Ser
435 440 445

Pro Ser Thr
450

<210>	51
<211>	435
<212>	PRT
<213>	Artificial Sequence

<220>
<223> Synthetic Construct

<400> 51

Met Ala Ala His Leu Leu Pro Ile Cys Ala Leu Phe Leu Thr Leu Leu
1 5 10 15

Asp Met Ala Gln Gly Phe Arg Gly Pro Leu Leu Pro Asn Arg Pro Phe
20 25 30

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

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

Thr Phe Arg Gly Pro Asp Met Thr Ile Phe Tyr Ser Ser Gln Leu Gly
 65 70 75 80

Thr Tyr Pro Tyr Tyr Thr Pro Thr Gly Glu Pro Val Phe Gly Gly Leu
 85 90 95

Pro Gln Asn Ala Ser Leu Ile Ala His Leu Ala Arg Thr Phe Gln Asp
 100 105 110

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

Asp Trp Glu Ala Trp Arg Pro Arg Trp Ala Phe Asn Trp Asp Thr Lys
 130 135 140

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

Asp Trp Pro Ala Pro Gln Val Glu Ala Val Ala Gln Asp Gln Phe Gln
 165 170 175

Gly Ala Ala Arg Ala Trp Met Ala Gly Thr Leu Gln Leu Gly Arg Ala
 180 185 190

Leu Arg Pro Arg Gly Leu Trp Gly Phe Tyr Gly Phe Pro Asp Cys Tyr
 195 200 205

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

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

Ala Leu Tyr Pro Ser Ile Tyr Met Pro Ala Val Leu Glu Gly Thr Gly
 245 250 255

Lys Ser Gln Met Tyr Val Gln His Arg Val Ala Glu Ala Phe Arg Val
 260 265 270

Ala Val Ala Ala Gly Asp Pro Asn Leu Pro Val Leu Pro Tyr Val Gln
 275 280 285

Ile Phe Tyr Asp Thr Thr Asn His Phe Leu Pro Leu Asp Glu Leu Glu
 290 295 300

His Ser Leu Gly Glu Ser Ala Ala Gln Gly Ala Ala Gly Val Val Leu
 305 310 315 320

Trp Val Ser Trp Glu Asn Thr Arg Thr Lys Glu Ser Cys Gln Ala Ile
 325 330 335

Lys Glu Tyr Met Asp Thr Thr Leu Gly Pro Phe Ile Leu Asn Val Thr
 340 345 350

Ser Gly Ala Leu Leu Cys Ser Gln Ala Leu Cys Ser Gly His Gly Arg
 355 360 365

Cys Val Arg Arg Thr Ser His Pro Lys Ala Leu Leu Leu Leu Asn Pro
 370 375 380

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

Arg Gly Ala Leu Ser Leu Glu Asp Gln Ala Gln Met Ala Val Glu Phe
 405 410 415

Lys Cys Arg Cys Tyr Pro Gly Trp Gln Ala Pro Trp Cys Glu Arg Lys
 420 425 430

Ser Met Trp
 435

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Phe Arg Gly Pro Leu Leu Pro Asn Arg
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Phe Arg Gly Pro Leu Leu Pro Asn Arg Pro Phe Thr Thr Val
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