SEQUENCE LISTING

<110> ELEMENT BIOSCIENCES, INC.

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<151> 2022-03-25

<160> 399

<170> PatentIn version 3.5

<210> 1
<211> 773
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Candidatus Altiarchaeales archaeon sequence

<400> 1

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln

115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Asp Met Glu Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  2
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  2

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

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

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  3
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  3

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ser Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
```

545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 4
<211> 773
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 4

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Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
```

245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Ile Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 5
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 5

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Thr
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 6
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 6

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Asn Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
```

675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 7
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 7

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
```

370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

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

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 8
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 8

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
```

65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Asn
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  9
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  9

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Val Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 10
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 10

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Thr Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
```

```
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 11
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 11

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile

```
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ala Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 12
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 12

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Gly
                405                 410                 415
```

```
Thr Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 13
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 13

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ala Leu
                405                 410                 415


Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
```

625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 14
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 14

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asn Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Gln Ile Ala Ile Thr Leu Leu Pro Leu
```

325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 15
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 15

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
```

```
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Arg Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 16
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 16

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
```

```
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  17
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  17

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Val Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
```

```
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  18
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  18

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
```

145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  19
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  19

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Gly
                405                 410                 415

Gly Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  20
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  20

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ile Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
```

```
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  21
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  21

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
```

```
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  22
<211>  773
<212>  PRT
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 22

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Val Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 23
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 23

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ala Leu
                485                 490                 495


Leu Ala Ala Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
```

705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 24
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 24

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
```

405 410 415

Tyr Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 25
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 25

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
```

```
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro His Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Gly
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  26
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  26

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Gly Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 27
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 27

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
```

530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 28
<211> 773

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 28

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  29
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  29

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Ala Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Ala
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 30
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 30

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Thr
                405                 410                 415


Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
```

660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 31
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 31

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
```

```
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Ser Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  32
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  32

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
```

```
     50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 33
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 33

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 34

<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 34

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Leu Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220
```

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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
```

485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  35
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  35

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
```

```
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Ser
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  36
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  36

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Ser
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  37
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  37

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415


Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
```

610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 38
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 38

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
```

305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Gly Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 39
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 39

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
```

```
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 40
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 40

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Val Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Gly Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
```

740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 41
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 41

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
```

435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  42
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  42

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
```

```
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Gly Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  43
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  43

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  44
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  44

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415


Ser Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
```

565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 45
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 45

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
```

```
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Gly
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 46
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 46

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
                485                 490                 495

Leu Ala Ala Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  47
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  47

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


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


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
```

690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 48
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 48

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
```

385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

Phe Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 49
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 49

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
```

85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Val
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  50
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  50

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 51
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 51

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Gln Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
```

```
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 52
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 52

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu

210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His His
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Phe Gly Tyr Phe Gly Ser Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Ile Val Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Asn Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 53
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 53

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu His Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Arg Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 54
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 54

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Cys
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
```

645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 55
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 55

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
```

340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  56
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  56

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
```

35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415

Tyr Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 57
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 57

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415

Val Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
```

770

<210> 58
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 58

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
```

```
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  59
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  59

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
```

```
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Gly Cys Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 60
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 60

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Ala Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  61
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  61

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Cys Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Gly Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
```

595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Ala Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 62
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 62

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
```

```
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Cys Ser Leu Lys Arg
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 63
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 63

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys His
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 64
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 64

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
```

725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 65
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 65

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
```

```
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 66
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 66

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
```

115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  67
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  67

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Gly Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 68
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 68

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Ile Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
```

545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 69
<211> 773
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 69

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
```

245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile Pro Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
485 490 495

Leu Ala Ala Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 70
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 70

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 71
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 71

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
```

```
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 72
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 72

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
```

370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  73
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  73

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Leu Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
```

```
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  74
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  74

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 75
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 75

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Tyr Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
```

```
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 76
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 76

Met Lys Lys Thr Leu Leu Asp Ala Asp Phe Ile Thr Arg Lys Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

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

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile

195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Ser Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Asp Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  77
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  77

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415
```

```
Ser Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Arg Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  78
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  78

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
                405                 410                 415

Tyr Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
```

625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 79
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 79

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
```

325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Lys
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  80
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  80

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
```

20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Ala Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 81
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 81

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Val Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Gly Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn His Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
```

```
         755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  82
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  82

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Ser Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
```

```
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 83
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 83

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
```

145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

```
Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gln Leu
                485                 490                 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 84
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 84

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Val Leu
                485                 490                 495

Leu Ala Ala Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  85
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  85

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
```

```
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  86
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  86

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
```

```
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Glu Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  87
<211>  773
<212>  PRT
```

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 87

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ser Leu
                485                 490                 495
```

```
Leu Ala Val Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  88
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  88

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Gly Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Val Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
```

705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 89
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 89

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Met
```

405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 90
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 90

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
```

```
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Val
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  91
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  91

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Arg Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  92
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  92

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


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


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
```

530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 93
<211> 773

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 93

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Val Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  94
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  94

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Gly Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 95
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 95

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Ile
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Ala Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
```

660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 96
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 96

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
```

355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  97
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  97

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
```

```
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Lys
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 98
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 98

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
                405                 410                 415

Ser Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 99

<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 99

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Ser Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Arg Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
```

485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  100
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  100

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
```

```
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

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

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  101
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  101

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Gly Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 102
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 102

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asn Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
```

610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 103
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 103

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
```

305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 104
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 104

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
```

```
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Gly Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 105
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 105

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Thr Ser Leu Lys Ser
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
```

740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 106
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 106

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Gly Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
```

435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  107
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  107

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
```

```
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Lys Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  108
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  108

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Ser
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  109
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  109

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
```

```
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Ser Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 110
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 110

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
```

260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

```
His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 111
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 111

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ser Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 112
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 112

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Gln Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
```

690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 113
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 113

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
```

385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Ile Lys Gln Arg Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 114
<211> 767
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 114

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
```

```
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

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

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Val Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln
        755                 760                 765


<210>  115
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  115

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Val Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  116
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  116

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415


Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Asn Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
```

530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 117
<211> 773

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 117

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Lys Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


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


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
```

225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Val Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Ile Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Ser Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

```
Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  118
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  118

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Gly Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  119
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  119

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
```

660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 120
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 120

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
```

```
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ser Leu
                485                 490                 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  121
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  121

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
```

```
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Ala Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 122
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 122

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Thr Ile Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 123

<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 123

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220
```

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


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Ser Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
```

485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  124
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  124

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
```

```
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  125
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  125

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
                405                 410                 415

Tyr Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  126
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  126

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala His
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
```

610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 127
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 127

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
```

305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ala Ser
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 128
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 128

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
```

1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Leu Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 129
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 129

Met Lys Lys Thr Leu Leu Asp Ala Asp Phe Ile Thr Arg Lys Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

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

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Asp Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
```

```
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 130
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 130

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
```

435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  131
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  131

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
```

130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Ala Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  132
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  132

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Asn Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  133
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  133

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


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


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


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


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415


Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


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


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
```

565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 134
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 134

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
```

260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Val Leu
485 490 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 135
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 135

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Arg
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 136
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 136

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
```

690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Arg Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 137
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 137

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
```

385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

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

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

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

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Gly Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 138
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 138

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
```

```
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Thr Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  139
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  139

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


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


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  140
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  140
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```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
```

```
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 141
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 141

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

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

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu

210 215 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Val Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

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

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  142
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  142

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


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


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

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

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

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

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

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

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ala Leu
                405                 410                 415

Gly Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

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

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 143
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 143

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415


Thr Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
```

645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 144
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 144

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
```

```
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415

Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  145
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  145

Met Lys Lys Thr Leu Leu Asp Ala Asn Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
```

35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 146
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 146

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
                485                 490                 495

Leu Ala Ser Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
```

770

<210> 147
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 147

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
```

```
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Ile
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  148
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  148

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
```

```
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 149
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 149

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  150
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  150

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
```

595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 151
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 151

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
```

290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Tyr
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 152
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 152

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Gly Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 153
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 153

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Ala
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
```

725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 154
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 154

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
```

420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ser Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 155
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 155

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
```

```
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Ser Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  156
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  156

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ser Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  157
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  157

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
                485                 490                 495

Leu Ala Ser Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
```

545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 158
<211> 773
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 158

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
```

245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
405 410 415

Tyr Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

```
Lys Leu Gly Gly Phe
    770


<210>  159
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  159

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205
```

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ser Leu
                485                 490                 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Ser Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  160
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  160

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Tyr Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
```

675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 161
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 161

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Arg Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
```

370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 162
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 162

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
```

65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Ser
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  163
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  163

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Val Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 164
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 164

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240
```

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
```

```
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 165
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 165

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile

```
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Gly Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  166
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  166

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  167
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  167

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415


Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
```

625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 168
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 168

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
```

325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gly Ser Leu Lys Ile
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  169
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  169

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
```

```
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Thr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 170
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 170

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Thr Lys Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
```

```
         755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  171
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  171

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
```

```
     450                 455                 460

 Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
 465                 470                 475                 480

 Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                 485                 490                 495

 Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
             500                 505                 510

 Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
         515                 520                 525

 His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
     530                 535                 540

 Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
 545                 550                 555                 560

 Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                 565                 570                 575

 Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
             580                 585                 590

 Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
         595                 600                 605

 Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Thr Trp Ala
     610                 615                 620

 Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
 625                 630                 635                 640

 Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                 645                 650                 655

 Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
             660                 665                 670

 Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
         675                 680                 685

 Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
     690                 695                 700

 Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
 705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  172
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  172

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
```

145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Gly
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 173
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 173

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  174
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  174

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Leu Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
```

```
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  175
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  175

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
```

275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
405 410 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 176
<211> 773
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 176

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ser Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Ser Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  177
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  177

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Thr
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
```

705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 178
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 178

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
```

405 410 415

Ser Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 179
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 179

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
```

```
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Gly Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  180
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  180

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Arg Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 181
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 181

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
```

530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Ile Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 182
<211> 773

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 182

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Leu Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Ser Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp

225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  183
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  183

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Asp Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  184
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  184

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Val Lys Asn
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
```

660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 185
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 185

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
```

```
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ser Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  186
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  186

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
```

```
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Tyr Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 187
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 187

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
                485                 490                 495

Leu Ala Val Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 188

<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 188

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220
```

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Arg Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
```

485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  189
<211>  767
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  189

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
```

```
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Arg Val Trp Ala Ser Lys
        755                 760                 765


<210>  190
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  190

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Gly
                405                 410                 415
```

```
Tyr Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  191
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  191

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415


Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
```

625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 192
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 192

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
```

325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Asn Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Phe Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  193
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  193

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
```

```
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 194
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 194

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Met Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
```

```
         755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  195
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  195

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
```

```
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Ala
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  196
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  196

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
```

145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Ile Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 197
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 197

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  198
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  198

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Ile Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
```

```
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  199
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  199

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
```

275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Gly Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Asp Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Gly Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Val Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 200
<211> 773
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 200

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Gly Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 201
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 201

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Phe Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
```

705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 202
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 202

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Arg Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
```

405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  203
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  203

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
```

```
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
                485                 490                 495

Leu Ala Gly Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  204
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  204

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Pro Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 205
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 205

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
```

530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Met Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 206
<211> 773

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 206

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp

225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Val Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  207
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  207

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Tyr
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  208
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  208

Met Lys Lys Thr Leu Leu Asp Ala Asp Phe Ile Thr Arg Lys Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Val Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Tyr
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Ser Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
```

660 665 670

Gln Ile Thr Arg Gly Met Ala Asp Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 209
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 209

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Leu Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
```

```
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  210
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  210

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
```

```
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro His Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Asn Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Lys Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 211
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 211

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Gly
                405                 410                 415

Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 212

<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 212

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220
```

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
```

485 490 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  213
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  213

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
```

```
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Tyr Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  214
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  214

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 215
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 215

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Ile Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
```

610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 216
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 216

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
```

305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Val Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Ser Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 217
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 217

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
```

1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg His Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 218
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 218

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Gly Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
```

740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 219
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 219

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
```

435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  220
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  220

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Arg Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
```

130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 221
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 221

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Ala
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  222
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  222

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Leu Ser Leu Lys Met
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
```

565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 223
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 223

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
```

260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ser Leu
485 490 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 224
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 224

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Ser Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 225
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 225

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
```

690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 226
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 226

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
```

385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Val Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Arg Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 227
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 227

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
```

85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Phe Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  228
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  228

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 229
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 229

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Val Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
```

```
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 230
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 230

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu

210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Thr Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 231
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 231

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ala Leu
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 232
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 232

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415


Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Val Leu
                485                 490                 495


Leu Ala Ser Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
```

645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 233
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 233

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
```

```
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  234
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  234

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
```

35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

```
Asp Asn Pro Arg Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 235
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 235

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asp Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Lys Phe Lys Gln Gly
    690                 695                 700


Ser Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
```

770

<210> 236
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 236

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
```

```
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Ser Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  237
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  237

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
```

```
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile Pro Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Val Leu
                485                 490                 495

Leu Ala Ala Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 238
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 238

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Leu Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  239
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  239

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Arg Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
```

595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 240
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 240

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
```

290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Thr Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 241
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 241

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Gly Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 242
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 242

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Val Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
```

725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 243
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 243

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415


Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
```

420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Ala Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 244
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 244

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
```

115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  245
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  245

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415

Tyr Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  246
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  246

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
```

545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Ile Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 247
<211> 773
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 247

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Phe Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Arg Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
```

245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

```
Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 248
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 248

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Glu Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 249
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 249

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415
```

```
Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Arg Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
```

675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 250
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 250

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
```

370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 251
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 251

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Phe Ile Thr Arg Lys Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
```

65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Val Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Ser Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Asp Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  252
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  252

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Ser Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 253
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 253

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240
```

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Arg Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
```

```
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 254
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 254

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Lys Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile

195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  255
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  255

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415
```

```
Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gly Leu
                485                 490                 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 256
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 256

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Glu Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
```

625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 257
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 257

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
```

325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asp Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Lys Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 258

<400> 258
000

<210> 259

<400> 259
000

<210> 260

<400> 260
000

<210> 261

<400> 261
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<210> 267

<400> 267
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<210> 268

<400> 268
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<210> 269
<211> 135
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Candidatus Altiarchaeales archaeon sequence

<400> 269

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu
    130                 135


<210>  270
<211>  212
<212>  PRT
<213>  Unknown

<220>
<223>  Description of Unknown: Candidatus Altiarchaeales archaeon
       sequence

<400>  270

Arg Ile Ala Ala Phe Asp Met Glu Val Tyr Asn Pro Arg Gly Glu Pro
1               5                   10                  15


Lys Ala Glu Arg Asp Pro Ile Ile Ile Ile Ser Tyr Ala Asp Asn Arg
            20                  25                  30


Gly Leu Arg Arg Val Trp Thr Tyr Lys Thr Val Glu Asn Leu Asn Leu
        35                  40                  45


Asp Tyr Met Glu Val Leu Lys Asp Glu Arg Glu Ile Ile Arg Arg Phe
    50                  55                  60


Ile Asp Thr Ile Arg Glu Arg Glu Ile Asp Ile Ile Val Thr Tyr Asn
65                  70                  75                  80


Gly Asp Asn Phe Asp Phe Pro Tyr Leu Lys Glu Arg Ala Glu Lys His
                85                  90                  95


Arg Ile Pro Val Ser Leu Gly Val Asp Gly Ser Pro Leu Arg Leu Glu
            100                 105                 110


Arg Arg Gly Met Asn Leu Gly Ala Arg Val Thr Gly Arg Pro His Ile
        115                 120                 125
```

```
Asp Met Tyr Pro Val Cys Arg Gln Ile Phe Asn Leu Ser Arg Tyr Thr
    130                 135                 140


Leu Glu Asp Val Tyr Leu Glu Ile Thr Gly Arg Glu Lys Lys Asp Ile
145                 150                 155                 160


Arg Val Gly Glu Met Ala Gly Ile Trp Asp Asn Pro Glu Lys Glu Lys
                165                 170                 175


Phe Lys Glu Leu Ile Glu Tyr Ala Met Ser Asp Ala Glu Ser Thr Leu
            180                 185                 190


Glu Ile Ala Ile Thr Leu Leu Pro Leu His Tyr Glu Ile Ser Arg Ile
        195                 200                 205


Thr Arg Glu Leu
    210


<210>  271
<211>  107
<212>  PRT
<213>  Unknown

<220>
<223>  Description of Unknown: Candidatus Altiarchaeales archaeon
       sequence

<400>  271

Ile Tyr Gln Ser Ser Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu
1               5                   10                  15


Leu Ile Lys Lys Ala Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro
            20                  25                  30


Ser Asp Arg Val Val Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala
        35                  40                  45


Tyr Val Val Glu Pro Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe
    50                  55                  60


Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp
65                  70                  75                  80


Pro Ser Thr Ile Asp Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser
                85                  90                  95


Pro Thr Gly His Tyr Phe Cys Lys Lys Lys Arg
            100                 105


<210>  272
<211>  50
```

<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Candidatus Altiarchaeales archaeon sequence

<400> 272

Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu Val Gln Arg Arg Ile Glu
1 5 10 15

Val Lys Lys Gly Leu Lys Asn Glu Lys Asn Pro Glu Arg Arg Arg Phe
20 25 30

Leu Asp Val Lys Gln Gln Ala Leu Lys Leu Leu Ala Asn Ser Met Tyr
35 40 45

Gly Tyr
50

<210> 273
<211> 120
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Candidatus Altiarchaeales archaeon sequence

<400> 273

Phe Gly Phe Pro Arg Ala Arg Trp Tyr Cys Arg Glu Cys Ala Glu Ser
1 5 10 15

Ile Thr Ala Leu Gly Arg Lys Tyr Ile Leu His Thr Ile Asp Ile Val
20 25 30

Pro Lys Phe Gly Phe Asp Val Ile Tyr Gly Asp Thr Asp Ser Val Tyr
35 40 45

Leu Ile Lys Pro Asn Ile Thr Asp Arg Glu Arg Val Met Lys Asn Ala
50 55 60

Glu His Phe Leu Asp Lys Ile Asn Ser Glu Leu Pro Glu Ala Met Glu
65 70 75 80

Leu Glu Phe Glu Gly Phe Tyr Pro Arg Gly Ile Phe Ile Thr Lys Lys
85 90 95

Arg Tyr Ala Leu Ile Asp Glu Arg Gly Lys Leu Ile Val Lys Gly Leu
100 105 110

Glu Thr Lys Arg Arg Asp Trp Ala

115 120

<210> 274
<211> 149
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Candidatus Altiarchaeales archaeon sequence

<400> 274

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
1 5 10 15

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
20 25 30

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
35 40 45

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
50 55 60

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
65 70 75 80

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
85 90 95

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
100 105 110

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
115 120 125

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
130 135 140

Lys Leu Gly Gly Phe
145

<210> 275
<211> 876
<212> PRT
<213> Geobacillus stearothermophilus

<400> 275

Met Lys Lys Lys Leu Val Leu Ile Asp Gly Asn Ser Val Ala Tyr Arg
1 5 10 15

```
Ala Phe Phe Ala Leu Pro Leu Leu His Asn Asp Lys Gly Ile His Thr
            20                  25                  30

Asn Ala Val Tyr Gly Phe Thr Met Met Leu Asn Lys Ile Leu Ala Glu
        35                  40                  45

Glu Gln Pro Thr His Leu Leu Val Ala Phe Asp Ala Gly Lys Thr Thr
    50                  55                  60

Phe Arg His Glu Thr Phe Gln Glu Tyr Lys Gly Gly Arg Gln Gln Thr
65                  70                  75                  80

Pro Pro Glu Leu Ser Glu Gln Phe Pro Leu Leu Arg Glu Leu Leu Lys
                85                  90                  95

Ala Tyr Arg Ile Pro Ala Tyr Glu Leu Asp His Tyr Glu Ala Asp Asp
            100                 105                 110

Ile Ile Gly Thr Leu Ala Ala Arg Ala Glu Gln Glu Gly Phe Glu Val
        115                 120                 125

Lys Ile Ile Ser Gly Asp Arg Asp Leu Thr Gln Leu Ala Ser Arg His
    130                 135                 140

Val Thr Val Asp Ile Thr Lys Lys Gly Ile Thr Asp Ile Glu Pro Tyr
145                 150                 155                 160

Thr Pro Glu Thr Val Arg Glu Lys Tyr Gly Leu Thr Pro Glu Gln Ile
                165                 170                 175

Val Asp Leu Lys Gly Leu Met Gly Asp Lys Ser Asp Asn Ile Pro Gly
            180                 185                 190

Val Pro Gly Ile Gly Glu Lys Thr Ala Val Lys Leu Leu Lys Gln Phe
        195                 200                 205

Gly Thr Val Glu Asn Val Leu Ala Ser Ile Asp Glu Val Lys Gly Glu
    210                 215                 220

Lys Leu Lys Glu Asn Leu Arg Gln His Arg Asp Leu Ala Leu Leu Ser
225                 230                 235                 240

Lys Gln Leu Ala Ser Ile Cys Arg Asp Ala Pro Val Glu Leu Ser Leu
                245                 250                 255

Asp Asp Ile Val Tyr Glu Gly Gln Asp Arg Glu Lys Val Ile Ala Leu
            260                 265                 270

Phe Lys Glu Leu Gly Phe Gln Ser Phe Leu Glu Lys Met Ala Ala Pro
```

```
        275                 280                 285

Ala Ala Glu Gly Glu Lys Pro Leu Glu Glu Met Glu Phe Ala Ile Val
    290                 295                 300

Asp Val Ile Thr Glu Glu Met Leu Ala Asp Lys Ala Ala Leu Val Val
305                 310                 315                 320

Glu Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala
                325                 330                 335

Leu Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu
            340                 345                 350

Ala Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys
        355                 360                 365

Ser Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly
    370                 375                 380

Ile Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu
385                 390                 395                 400

Leu Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met
                405                 410                 415

Lys Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly
            420                 425                 430

Val Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val
        435                 440                 445

Arg Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp
    450                 455                 460

Leu Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu Gln Pro
465                 470                 475                 480

Leu Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp
                485                 490                 495

Thr Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg
            500                 505                 510

Ala Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile
        515                 520                 525

Asn Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu
    530                 535                 540
```

```
Pro Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val
545                 550                 555                 560

Leu Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His
                565                 570                 575

Tyr Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu
            580                 585                 590

Lys Val Val Arg Pro Asp Thr Gly Lys Val His Thr Met Phe Asn Gln
        595                 600                 605

Ala Leu Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln
    610                 615                 620

Asn Ile Pro Ile Arg Leu Glu Glu Gly Arg Lys Ile Arg Gln Ala Phe
625                 630                 635                 640

Val Pro Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Gln
                645                 650                 655

Ile Glu Leu Arg Val Leu Ala His Ile Ala Asp Asp Asp Asn Leu Ile
            660                 665                 670

Glu Ala Phe Gln Arg Asp Leu Asp Ile His Thr Lys Thr Ala Met Asp
        675                 680                 685

Ile Phe His Val Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln
    690                 695                 700

Ala Lys Ala Val Asn Phe Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly
705                 710                 715                 720

Leu Ala Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile
                725                 730                 735

Glu Arg Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn
            740                 745                 750

Ile Val Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His
        755                 760                 765

Arg Arg Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg
    770                 775                 780

Ser Phe Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala
785                 790                 795                 800
```

```
Ala Asp Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys
                805                 810                 815


Glu Glu Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu
            820                 825                 830


Ile Leu Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val
        835                 840                 845


Pro Glu Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val
    850                 855                 860


Asp Tyr His Tyr Gly Pro Thr Trp Tyr Asp Ala Lys
865                 870                 875


<210>  276
<211>  876
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  276

Met Lys Lys Lys Leu Val Leu Ile Asp Gly Asn Ser Val Ala Tyr Arg
1               5                   10                  15


Ala Phe Phe Ala Leu Pro Leu Leu His Asn Asp Lys Gly Ile His Thr
            20                  25                  30


Asn Ala Val Tyr Gly Phe Thr Met Met Leu Asn Lys Ile Leu Ala Glu
        35                  40                  45


Glu Gln Pro Thr His Leu Leu Val Ala Phe Asp Ala Gly Lys Thr Thr
    50                  55                  60


Phe Arg His Glu Thr Phe Gln Glu Tyr Lys Gly Gly Arg Gln Gln Thr
65                  70                  75                  80


Pro Pro Glu Leu Ser Glu Gln Phe Pro Leu Leu Arg Glu Leu Leu Lys
                85                  90                  95


Ala Tyr Arg Ile Pro Ala Tyr Glu Leu Asp His Tyr Glu Ala Asp Asp
            100                 105                 110


Ile Ile Gly Thr Leu Ala Ala Arg Ala Glu Gln Glu Gly Phe Glu Val
        115                 120                 125


Lys Ile Ile Ser Gly Asp Arg Asp Leu Thr Gln Leu Ala Ser Arg His
    130                 135                 140
```

```
Val Thr Val Asp Ile Thr Lys Lys Gly Ile Thr Asp Ile Glu Pro Tyr
145                 150                 155                 160

Thr Pro Glu Thr Val Arg Glu Lys Tyr Gly Leu Thr Pro Glu Gln Ile
                165                 170                 175

Val Asp Leu Lys Gly Leu Met Gly Asp Lys Ser Asp Asn Ile Pro Gly
            180                 185                 190

Val Pro Gly Ile Gly Glu Lys Thr Ala Val Lys Leu Leu Lys Gln Phe
        195                 200                 205

Gly Thr Val Glu Asn Val Leu Ala Ser Ile Asp Glu Val Lys Gly Glu
    210                 215                 220

Lys Leu Lys Glu Asn Leu Arg Gln His Arg Asp Leu Ala Leu Leu Ser
225                 230                 235                 240

Lys Gln Leu Ala Ser Ile Cys Arg Asp Ala Pro Val Glu Leu Ser Leu
                245                 250                 255

Asp Asp Ile Val Tyr Glu Gly Gln Asp Arg Glu Lys Val Ile Ala Leu
            260                 265                 270

Phe Lys Glu Leu Gly Phe Gln Ser Phe Leu Glu Lys Met Ala Ala Pro
        275                 280                 285

Ala Ala Glu Gly Glu Lys Pro Leu Glu Glu Met Glu Phe Ala Ile Val
    290                 295                 300

Asp Val Ile Thr Glu Glu Met Leu Ala Asp Lys Ala Ala Leu Val Val
305                 310                 315                 320

Glu Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala
                325                 330                 335

Leu Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu
            340                 345                 350

Ala Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys
        355                 360                 365

Ser Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly
    370                 375                 380

Ile Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu
385                 390                 395                 400
```

```
Leu Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met
                405                 410                 415

Lys Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly
            420                 425                 430

Val Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val
        435                 440                 445

Arg Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp
    450                 455                 460

Leu Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu Gln Pro
465                 470                 475                 480

Leu Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp
                485                 490                 495

Thr Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg
            500                 505                 510

Ala Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile
        515                 520                 525

Asn Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu
    530                 535                 540

Pro Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val
545                 550                 555                 560

Leu Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His
                565                 570                 575

Tyr Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu
            580                 585                 590

Lys Val Val Arg Pro Asp Thr Gly Lys Val His Thr Met Phe Asn Gln
        595                 600                 605

Ala Leu Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln
    610                 615                 620

Asn Ile Pro Ile Arg Leu Glu Glu Gly Arg Lys Ile Arg Gln Ala Phe
625                 630                 635                 640

Val Pro Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Ser
                645                 650                 655
```

```
Ile Glu Leu Arg Val Leu Ala His Ile Ala Asp Asp Asp Asn Leu Ile
            660                 665                 670


Glu Ala Phe Gln Arg Asp Leu Asp Ile His Thr Lys Thr Ala Met Asp
        675                 680                 685


Ile Phe His Val Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln
    690                 695                 700


Ala Lys Ala Val Asn Phe Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly
705                 710                 715                 720


Leu Ala Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile
                725                 730                 735


Glu Arg Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn
            740                 745                 750


Ile Val Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His
        755                 760                 765


Arg Arg Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg
    770                 775                 780


Ser Phe Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala
785                 790                 795                 800


Ala Asp Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys
                805                 810                 815


Glu Glu Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu
            820                 825                 830


Ile Leu Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val
        835                 840                 845


Pro Glu Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val
    850                 855                 860


Asp Tyr His Tyr Gly Pro Thr Trp Tyr Asp Ala Lys
865                 870                 875


<210>  277
<211>  876
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  277
```

```
Met Lys Lys Lys Leu Val Leu Ile Asp Gly Asn Ser Val Ala Tyr Arg
1               5                   10                  15

Ala Phe Phe Ala Leu Pro Leu Leu His Asn Asp Lys Gly Ile His Thr
            20                  25                  30

Asn Ala Val Tyr Gly Phe Thr Met Met Leu Asn Lys Ile Leu Ala Glu
        35                  40                  45

Glu Gln Pro Thr His Leu Leu Val Ala Phe Asp Ala Gly Lys Thr Thr
    50                  55                  60

Phe Arg His Glu Thr Phe Gln Glu Tyr Lys Gly Gly Arg Gln Gln Thr
65                  70                  75                  80

Pro Pro Glu Leu Ser Glu Gln Phe Pro Leu Leu Arg Glu Leu Leu Lys
                85                  90                  95

Ala Tyr Arg Ile Pro Ala Tyr Glu Leu Asp His Tyr Glu Ala Asp Asp
            100                 105                 110

Ile Ile Gly Thr Leu Ala Ala Arg Ala Glu Gln Glu Gly Phe Glu Val
        115                 120                 125

Lys Ile Ile Ser Gly Asp Arg Asp Leu Thr Gln Leu Ala Ser Arg His
    130                 135                 140

Val Thr Val Asp Ile Thr Lys Lys Gly Ile Thr Asp Ile Glu Pro Tyr
145                 150                 155                 160

Thr Pro Glu Thr Val Arg Glu Lys Tyr Gly Leu Thr Pro Glu Gln Ile
                165                 170                 175

Val Asp Leu Lys Gly Leu Met Gly Asp Lys Ser Asp Asn Ile Pro Gly
            180                 185                 190

Val Pro Gly Ile Gly Glu Lys Thr Ala Val Lys Leu Leu Lys Gln Phe
        195                 200                 205

Gly Thr Val Glu Asn Val Leu Ala Ser Ile Asp Glu Val Lys Gly Glu
    210                 215                 220

Lys Leu Lys Glu Asn Leu Arg Gln His Arg Asp Leu Ala Leu Leu Ser
225                 230                 235                 240

Lys Gln Leu Ala Ser Ile Cys Arg Asp Ala Pro Val Glu Leu Ser Leu
                245                 250                 255
```

```
Asp Asp Ile Val Tyr Glu Gly Gln Asp Arg Glu Lys Val Ile Ala Leu
            260                 265                 270


Phe Lys Glu Leu Gly Phe Gln Ser Phe Leu Glu Lys Met Ala Ala Pro
        275                 280                 285


Ala Ala Glu Gly Glu Lys Pro Leu Glu Glu Met Glu Phe Ala Ile Val
    290                 295                 300


Asp Val Ile Thr Glu Glu Met Leu Ala Asp Lys Ala Ala Leu Val Val
305                 310                 315                 320


Glu Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala
                325                 330                 335


Leu Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu
            340                 345                 350


Ala Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys
        355                 360                 365


Ser Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly
    370                 375                 380


Ile Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu
385                 390                 395                 400


Leu Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met
                405                 410                 415


Lys Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly
            420                 425                 430


Val Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val
        435                 440                 445


Arg Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp
    450                 455                 460


Leu Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu Gln Pro
465                 470                 475                 480


Leu Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp
                485                 490                 495


Thr Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg
            500                 505                 510


Ala Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile
```

```
        515                 520                 525

Asn Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu
    530                 535                 540

Pro Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val
545                 550                 555                 560

Leu Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His
                565                 570                 575

Tyr Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu
            580                 585                 590

Lys Val Val Arg Pro Asp Thr Gly Lys Val His Thr Met Phe Asn Gln
        595                 600                 605

Ala Leu Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln
    610                 615                 620

Asn Ile Pro Ile Arg Leu Glu Glu Gly Arg Lys Ile Arg Gln Ala Phe
625                 630                 635                 640

Val Pro Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Ala
                645                 650                 655

Ile Glu Leu Arg Val Leu Ala His Ile Ala Asp Asp Asp Asn Leu Ile
            660                 665                 670

Glu Ala Phe Gln Arg Asp Leu Asp Ile His Thr Lys Thr Ala Met Asp
        675                 680                 685

Ile Phe His Val Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln
    690                 695                 700

Ala Lys Ala Val Asn Phe Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly
705                 710                 715                 720

Leu Ala Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile
                725                 730                 735

Glu Arg Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn
            740                 745                 750

Ile Val Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His
        755                 760                 765

Arg Arg Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg
    770                 775                 780
```

```
Ser Phe Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala
785                 790                 795                 800


Ala Asp Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys
                805                 810                 815


Glu Glu Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu
            820                 825                 830


Ile Leu Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val
        835                 840                 845


Pro Glu Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val
    850                 855                 860


Asp Tyr His Tyr Gly Pro Thr Trp Tyr Asp Ala Lys
865                 870                 875


<210>  278
<211>  876
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  278

Met Lys Lys Lys Leu Val Leu Ile Asp Gly Asn Ser Val Ala Tyr Arg
1               5                   10                  15


Ala Phe Phe Ala Leu Pro Leu Leu His Asn Asp Lys Gly Ile His Thr
            20                  25                  30


Asn Ala Val Tyr Gly Phe Thr Met Met Leu Asn Lys Ile Leu Ala Glu
        35                  40                  45


Glu Gln Pro Thr His Leu Leu Val Ala Phe Asp Ala Gly Lys Thr Thr
    50                  55                  60


Phe Arg His Glu Thr Phe Gln Glu Tyr Lys Gly Gly Arg Gln Gln Thr
65                  70                  75                  80


Pro Pro Glu Leu Ser Glu Gln Phe Pro Leu Leu Arg Glu Leu Leu Lys
                85                  90                  95


Ala Tyr Arg Ile Pro Ala Tyr Glu Leu Asp His Tyr Glu Ala Asp Asp
            100                 105                 110


Ile Ile Gly Thr Leu Ala Ala Arg Ala Glu Gln Glu Gly Phe Glu Val
```

```
        115                 120                 125

Lys Ile Ile Ser Gly Asp Arg Asp Leu Thr Gln Leu Ala Ser Arg His
    130                 135                 140

Val Thr Val Asp Ile Thr Lys Lys Gly Ile Thr Asp Ile Glu Pro Tyr
145                 150                 155                 160

Thr Pro Glu Thr Val Arg Glu Lys Tyr Gly Leu Thr Pro Glu Gln Ile
                165                 170                 175

Val Asp Leu Lys Gly Leu Met Gly Asp Lys Ser Asp Asn Ile Pro Gly
            180                 185                 190

Val Pro Gly Ile Gly Glu Lys Thr Ala Val Lys Leu Leu Lys Gln Phe
        195                 200                 205

Gly Thr Val Glu Asn Val Leu Ala Ser Ile Asp Glu Val Lys Gly Glu
    210                 215                 220

Lys Leu Lys Glu Asn Leu Arg Gln His Arg Asp Leu Ala Leu Leu Ser
225                 230                 235                 240

Lys Gln Leu Ala Ser Ile Cys Arg Asp Ala Pro Val Glu Leu Ser Leu
                245                 250                 255

Asp Asp Ile Val Tyr Glu Gly Gln Asp Arg Glu Lys Val Ile Ala Leu
            260                 265                 270

Phe Lys Glu Leu Gly Phe Gln Ser Phe Leu Glu Lys Met Ala Ala Pro
        275                 280                 285

Ala Ala Glu Gly Glu Lys Pro Leu Glu Glu Met Glu Phe Ala Ile Val
    290                 295                 300

Asp Val Ile Thr Glu Glu Met Leu Ala Asp Lys Ala Ala Leu Val Val
305                 310                 315                 320

Glu Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala
                325                 330                 335

Leu Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu
            340                 345                 350

Ala Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys
        355                 360                 365

Ser Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly
    370                 375                 380
```

```
Ile Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu
385                 390                 395                 400

Leu Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met
                405                 410                 415

Lys Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly
            420                 425                 430

Val Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val
        435                 440                 445

Arg Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp
    450                 455                 460

Leu Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu Gln Pro
465                 470                 475                 480

Leu Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp
                485                 490                 495

Thr Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg
            500                 505                 510

Ala Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile
        515                 520                 525

Asn Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu
    530                 535                 540

Pro Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val
545                 550                 555                 560

Leu Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His
                565                 570                 575

Tyr Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu
            580                 585                 590

Lys Val Val Arg Pro Asp Thr Gly Lys Val His Thr Met Phe Asn Gln
        595                 600                 605

Ala Leu Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln
    610                 615                 620

Asn Ile Pro Ile Arg Leu Glu Glu Gly Arg Lys Ile Arg Gln Ala Phe
625                 630                 635                 640
```

```
Val Pro Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Ala
                645                 650                 655

Ala Ala Leu Arg Val Leu Ala His Ile Ala Asp Asp Asp Asn Leu Ile
            660                 665                 670

Glu Ala Phe Gln Arg Asp Leu Asp Ile His Thr Lys Thr Ala Met Asp
        675                 680                 685

Ile Phe His Val Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln
    690                 695                 700

Ala Lys Ala Val Asn Phe Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly
705                 710                 715                 720

Leu Ala Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile
                725                 730                 735

Glu Arg Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn
            740                 745                 750

Ile Val Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His
        755                 760                 765

Arg Arg Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg
    770                 775                 780

Ser Phe Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala
785                 790                 795                 800

Ala Asp Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys
                805                 810                 815

Glu Glu Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu
            820                 825                 830

Ile Leu Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val
        835                 840                 845

Pro Glu Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val
    850                 855                 860

Asp Tyr His Tyr Gly Pro Thr Trp Tyr Asp Ala Lys
865                 870                 875


<210>  279
<211>  876
<212>  PRT
<213>  Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 279

Met Lys Lys Lys Leu Val Leu Ile Asp Gly Asn Ser Val Ala Tyr Arg
1 5 10 15

Ala Phe Phe Ala Leu Pro Leu Leu His Asn Asp Lys Gly Ile His Thr
20 25 30

Asn Ala Val Tyr Gly Phe Thr Met Met Leu Asn Lys Ile Leu Ala Glu
35 40 45

Glu Gln Pro Thr His Leu Leu Val Ala Phe Asp Ala Gly Lys Thr Thr
50 55 60

Phe Arg His Glu Thr Phe Gln Glu Tyr Lys Gly Gly Arg Gln Gln Thr
65 70 75 80

Pro Pro Glu Leu Ser Glu Gln Phe Pro Leu Leu Arg Glu Leu Leu Lys
85 90 95

Ala Tyr Arg Ile Pro Ala Tyr Glu Leu Asp His Tyr Glu Ala Asp Asp
100 105 110

Ile Ile Gly Thr Leu Ala Ala Arg Ala Glu Gln Glu Gly Phe Glu Val
115 120 125

Lys Ile Ile Ser Gly Asp Arg Asp Leu Thr Gln Leu Ala Ser Arg His
130 135 140

Val Thr Val Asp Ile Thr Lys Lys Gly Ile Thr Asp Ile Glu Pro Tyr
145 150 155 160

Thr Pro Glu Thr Val Arg Glu Lys Tyr Gly Leu Thr Pro Glu Gln Ile
165 170 175

Val Asp Leu Lys Gly Leu Met Gly Asp Lys Ser Asp Asn Ile Pro Gly
180 185 190

Val Pro Gly Ile Gly Glu Lys Thr Ala Val Lys Leu Leu Lys Gln Phe
195 200 205

Gly Thr Val Glu Asn Val Leu Ala Ser Ile Asp Glu Val Lys Gly Glu
210 215 220

Lys Leu Lys Glu Asn Leu Arg Gln His Arg Asp Leu Ala Leu Leu Ser
225 230 235 240

```
Lys Gln Leu Ala Ser Ile Cys Arg Asp Ala Pro Val Glu Leu Ser Leu
                245                 250                 255

Asp Asp Ile Val Tyr Glu Gly Gln Asp Arg Glu Lys Val Ile Ala Leu
            260                 265                 270

Phe Lys Glu Leu Gly Phe Gln Ser Phe Leu Glu Lys Met Ala Ala Pro
        275                 280                 285

Ala Ala Glu Gly Glu Lys Pro Leu Glu Glu Met Glu Phe Ala Ile Val
    290                 295                 300

Asp Val Ile Thr Glu Glu Met Leu Ala Asp Lys Ala Ala Leu Val Val
305                 310                 315                 320

Glu Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala
                325                 330                 335

Leu Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu
            340                 345                 350

Ala Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys
        355                 360                 365

Ser Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly
    370                 375                 380

Ile Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu
385                 390                 395                 400

Leu Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met
                405                 410                 415

Lys Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly
            420                 425                 430

Val Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val
        435                 440                 445

Arg Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp
    450                 455                 460

Leu Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu Gln Pro
465                 470                 475                 480

Leu Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp
                485                 490                 495
```

```
Thr Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg
            500                 505                 510

Ala Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile
        515                 520                 525

Asn Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu
    530                 535                 540

Pro Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val
545                 550                 555                 560

Leu Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His
                565                 570                 575

Tyr Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu
            580                 585                 590

Lys Val Val Arg Pro Asp Thr Gly Lys Val His Thr Met Phe Asn Gln
        595                 600                 605

Ala Leu Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln
    610                 615                 620

Asn Ile Pro Ile Arg Leu Glu Glu Gly Arg Lys Ile Arg Gln Ala Phe
625                 630                 635                 640

Val Pro Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Ser
                645                 650                 655

Ala Ala Leu Arg Val Leu Ala His Ile Ala Asp Asp Asp Asn Leu Ile
            660                 665                 670

Glu Ala Phe Gln Arg Asp Leu Asp Ile His Thr Lys Thr Ala Met Asp
        675                 680                 685

Ile Phe His Val Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln
    690                 695                 700

Ala Lys Ala Val Asn Phe Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly
705                 710                 715                 720

Leu Ala Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile
                725                 730                 735

Glu Arg Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn
            740                 745                 750

Ile Val Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His
```

```
        755                 760                 765

Arg Arg Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg
    770                 775                 780

Ser Phe Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala
785                 790                 795                 800

Ala Asp Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys
                805                 810                 815

Glu Glu Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu
            820                 825                 830

Ile Leu Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val
        835                 840                 845

Pro Glu Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val
    850                 855                 860

Asp Tyr His Tyr Gly Pro Thr Trp Tyr Asp Ala Lys
865                 870                 875


<210>  280
<211>  775
<212>  PRT
<213>  Thermococcus sp.

<400>  280

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30

Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110
```

```
Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Asp Ile Glu Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365
```

```
Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480

Tyr Arg Gln Arg Ala Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Lys Glu Cys Ala Glu Ser
            500                 505                 510

Val Thr Ala Trp Gly Arg Glu Tyr Ile Glu Met Val Ile Arg Glu Leu
        515                 520                 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Lys Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
```

625 630 635 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
645 650 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
660 665 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
675 680 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
690 695 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705 710 715 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
725 730 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
740 745 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
755 760 765

Leu Lys Val Lys Gly Lys Lys
770 775

<210> 281
<211> 775
<212> PRT
<213> Thermococcus sp.

<400> 281

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1 5 10 15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
20 25 30

Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
35 40 45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
50 55 60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65 70 75 80

```
Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Asp Ile Glu Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335
```

```
Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480

Tyr Arg Gln Arg Ala Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Lys Glu Cys Ala Glu Ser
            500                 505                 510

Val Thr Ala Trp Gly Arg Glu Tyr Ile Glu Met Val Ile Arg Glu Leu
        515                 520                 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Lys Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
```

595 600 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
610 615 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625 630 635 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
645 650 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
660 665 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
675 680 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
690 695 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705 710 715 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
725 730 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
740 745 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
755 760 765

Leu Lys Val Lys Gly Lys Lys
770 775

<210> 282
<211> 775
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 282

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1 5 10 15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
20 25 30

```
Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
```

290 295 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305 310 315 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
325 330 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
340 345 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
355 360 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
370 375 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385 390 395 400

Val Tyr Leu Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile Ile Thr His
405 410 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
420 425 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
435 440 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
450 455 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465 470 475 480

Tyr Arg Gln Arg Leu Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
485 490 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Lys Glu Cys Ala Glu Ser
500 505 510

Val Thr Ala Trp Gly Arg Glu Tyr Ile Glu Met Val Ile Arg Glu Leu
515 520 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
530 535 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Lys Ala
545 550 555 560

```
Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765

Leu Lys Val Lys Gly Lys Lys
    770                 775
```

<210> 283
<211> 1702
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 283

```
Met Ile Leu Asp Thr Asp Tyr Ile Thr Lys Asp Gly Lys Pro Ile Ile
1               5                   10                  15

Arg Ile Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Leu Asp Pro
            20                  25                  30

His Phe Gln Pro Tyr Ile Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45

Glu Glu Ile Lys Ala Ile Lys Gly Glu Arg His Gly Lys Thr Val Arg
    50                  55                  60

Val Leu Asp Ala Val Lys Val Arg Lys Lys Phe Leu Gly Arg Glu Val
65                  70                  75                  80

Glu Val Trp Lys Leu Ile Phe Glu His Pro Gln Asp Val Pro Ala Met
                85                  90                  95

Arg Gly Lys Ile Arg Glu His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Lys Leu Leu Ala Phe Asp Ile Glu Thr
    130                 135                 140

Phe Tyr His Glu Gly Asp Glu Phe Gly Lys Gly Glu Ile Ile Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Glu Glu Glu Ala Arg Val Ile Thr Trp Lys Asn Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Asn Glu Arg Glu Met Ile Lys
            180                 185                 190

Arg Phe Val Gln Val Val Lys Glu Lys Asp Pro Asp Val Ile Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Leu Pro Tyr Leu Ile Lys Arg Ala Glu
    210                 215                 220

Lys Leu Gly Val Arg Leu Val Leu Gly Arg Asp Lys Glu His Pro Glu
225                 230                 235                 240

Pro Lys Ile Gln Arg Met Gly Asp Ser Phe Ala Val Glu Ile Lys Gly
                245                 250                 255
```

```
Arg Ile His Phe Asp Leu Phe Pro Val Val Arg Arg Thr Ile Asn Leu
            260                 265                 270

Pro Thr Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Leu Gly Lys Thr
        275                 280                 285

Lys Ser Lys Leu Gly Ala Glu Glu Ile Ala Ala Ile Trp Glu Thr Glu
    290                 295                 300

Glu Ser Met Lys Lys Leu Ala Gln Tyr Ser Met Glu Asp Ala Arg Ala
305                 310                 315                 320

Thr Tyr Glu Leu Gly Lys Glu Phe Phe Pro Met Glu Ala Glu Leu Ala
                325                 330                 335

Lys Leu Ile Gly Gln Ser Val Trp Asp Val Ser Arg Ser Ser Thr Gly
            340                 345                 350

Asn Leu Val Glu Trp Tyr Leu Leu Arg Val Ala Tyr Ala Arg Asn Glu
        355                 360                 365

Leu Ala Pro Asn Lys Pro Asp Glu Glu Glu Tyr Lys Arg Arg Leu Arg
    370                 375                 380

Thr Thr Tyr Leu Gly Gly Tyr Val Lys Glu Pro Glu Lys Gly Leu Trp
385                 390                 395                 400

Glu Asn Ile Ile Tyr Leu Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile
                405                 410                 415

Val Thr His Asn Val Ser Pro Asp Thr Leu Glu Lys Glu Gly Cys Lys
            420                 425                 430

Asn Tyr Asp Val Ala Pro Ile Val Gly Tyr Arg Phe Cys Lys Asp Phe
        435                 440                 445

Pro Gly Phe Ile Pro Ser Ile Leu Gly Asp Leu Ile Ala Met Arg Gln
    450                 455                 460

Asp Ile Lys Lys Lys Met Lys Ser Thr Ile Asp Pro Ile Glu Lys Lys
465                 470                 475                 480

Met Leu Asp Tyr Arg Gln Arg Ala Ile Lys Leu Leu Ala Asn Ser Ile
                485                 490                 495

Leu Pro Asn Glu Trp Leu Pro Ile Ile Glu Asn Gly Glu Ile Lys Phe
            500                 505                 510
```

```
Val Lys Ile Gly Glu Phe Ile Asn Ser Tyr Met Glu Lys Gln Lys Glu
        515                 520                 525

Asn Val Lys Thr Val Glu Asn Thr Glu Val Leu Glu Val Asn Asn Leu
    530                 535                 540

Phe Ala Phe Ser Phe Asn Lys Lys Ile Lys Glu Ser Glu Val Lys Lys
545                 550                 555                 560

Val Lys Ala Leu Ile Arg His Lys Tyr Lys Gly Lys Ala Tyr Glu Ile
                565                 570                 575

Gln Leu Ser Ser Gly Arg Lys Ile Asn Ile Thr Ala Gly His Ser Leu
            580                 585                 590

Phe Thr Val Arg Asn Gly Glu Ile Lys Glu Val Ser Gly Asp Gly Ile
        595                 600                 605

Lys Glu Gly Asp Leu Ile Val Ala Pro Lys Lys Ile Lys Leu Asn Glu
    610                 615                 620

Lys Gly Val Ser Ile Asn Ile Pro Glu Leu Ile Ser Asp Leu Ser Glu
625                 630                 635                 640

Glu Glu Thr Ala Asp Ile Val Met Thr Ile Ser Ala Lys Gly Arg Lys
                645                 650                 655

Asn Phe Phe Lys Gly Met Leu Arg Thr Leu Arg Trp Met Phe Gly Glu
            660                 665                 670

Glu Asn Arg Arg Ile Arg Thr Phe Asn Arg Tyr Leu Phe His Leu Glu
        675                 680                 685

Lys Leu Gly Leu Ile Lys Leu Leu Pro Arg Gly Tyr Glu Val Thr Asp
    690                 695                 700

Trp Glu Arg Leu Lys Lys Tyr Lys Gln Leu Tyr Glu Lys Leu Ala Gly
705                 710                 715                 720

Ser Val Lys Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Met Phe Asn
                725                 730                 735

Glu Ile Lys Asp Phe Ile Ser Tyr Phe Pro Gln Lys Glu Leu Glu Glu
            740                 745                 750

Trp Lys Ile Gly Thr Leu Asn Gly Phe Arg Thr Asn Cys Ile Leu Lys
        755                 760                 765
```

```
Val Asp Glu Asp Phe Gly Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly
    770                 775                 780

Tyr Ala Gly Ala Gln Lys Asn Lys Thr Gly Gly Ile Ser Tyr Ser Val
785                 790                 795                 800

Lys Leu Tyr Asn Glu Asp Pro Asn Val Leu Glu Ser Met Lys Asn Val
                805                 810                 815

Ala Glu Lys Phe Phe Gly Lys Val Arg Val Asp Arg Asn Cys Val Ser
            820                 825                 830

Ile Ser Lys Lys Met Ala Tyr Leu Val Met Lys Cys Leu Cys Gly Ala
        835                 840                 845

Leu Ala Glu Asn Lys Arg Ile Pro Ser Val Ile Leu Thr Ser Pro Glu
    850                 855                 860

Pro Val Arg Trp Ser Phe Leu Glu Ala Tyr Phe Thr Gly Asp Gly Asp
865                 870                 875                 880

Ile His Pro Ser Lys Arg Phe Arg Leu Ser Thr Lys Ser Glu Leu Leu
                885                 890                 895

Ala Asn Gln Leu Val Phe Leu Leu Asn Ser Leu Gly Ile Ser Ser Val
            900                 905                 910

Lys Ile Gly Phe Asp Ser Gly Val Tyr Arg Val Tyr Ile Asn Glu Asp
        915                 920                 925

Leu Gln Phe Pro Gln Thr Ser Arg Glu Lys Asn Thr Tyr Tyr Ser Asn
    930                 935                 940

Leu Ile Pro Lys Glu Ile Leu Arg Asp Val Phe Gly Lys Glu Phe Gln
945                 950                 955                 960

Lys Asn Met Thr Phe Lys Lys Phe Lys Glu Leu Val Asp Ser Gly Lys
                965                 970                 975

Leu Asn Arg Glu Lys Ala Lys Leu Leu Glu Phe Phe Ile Asn Gly Asp
            980                 985                 990

Ile Val Leu Asp Arg Val Lys Ser  Val Lys Glu Lys Asp  Tyr Glu Gly
        995                 1000                1005

Tyr Val  Tyr Asp Leu Ser Val  Glu Asp Asn Glu Asn  Phe Leu Val
    1010                1015                1020

Gly Phe  Gly Leu Leu Tyr Ala  His Asn Ser Tyr Tyr  Gly Tyr Met
```

1025 1030 1035

Gly Tyr Pro Lys Ala Arg Trp Tyr Ser Lys Glu Cys Ala Glu Ser
1040 1045 1050

Val Thr Ala Trp Gly Arg His Tyr Ile Glu Met Thr Ile Arg Glu
1055 1060 1065

Ile Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Ser Val
1070 1075 1080

Ser Gly Glu Ser Glu Ile Ile Ile Arg Gln Asn Gly Lys Ile Arg
1085 1090 1095

Phe Val Lys Ile Lys Asp Leu Phe Ser Lys Val Asp Tyr Ser Ile
1100 1105 1110

Gly Glu Lys Glu Tyr Cys Ile Leu Glu Gly Val Glu Ala Leu Thr
1115 1120 1125

Leu Asp Asp Asp Gly Lys Leu Val Trp Lys Pro Val Pro Tyr Val
1130 1135 1140

Met Arg His Arg Ala Asn Lys Arg Met Phe Arg Ile Trp Leu Thr
1145 1150 1155

Asn Ser Trp Tyr Ile Asp Val Thr Glu Asp His Ser Leu Ile Gly
1160 1165 1170

Tyr Leu Asn Thr Ser Lys Thr Lys Thr Ala Lys Lys Ile Gly Glu
1175 1180 1185

Arg Leu Lys Glu Val Lys Pro Phe Glu Leu Gly Lys Ala Val Lys
1190 1195 1200

Ser Leu Ile Cys Pro Asn Ala Pro Leu Lys Asp Glu Asn Thr Lys
1205 1210 1215

Thr Ser Glu Ile Ala Val Lys Phe Trp Glu Leu Val Gly Leu Ile
1220 1225 1230

Val Gly Asp Gly Asn Trp Gly Gly Asp Ser Arg Trp Ala Glu Tyr
1235 1240 1245

Tyr Leu Gly Leu Ser Thr Gly Lys Asp Ala Glu Glu Ile Lys Gln
1250 1255 1260

Lys Leu Leu Glu Pro Leu Lys Thr Tyr Gly Val Ile Ser Asn Tyr
1265 1270 1275

```
Tyr Pro  Lys Asn Glu Lys Gly  Asp Phe Asn Ile Leu  Ala Lys Ser
    1280                 1285                 1290

Leu Val  Lys Phe Met Lys Arg  His Phe Lys Asp Glu  Lys Gly Arg
    1295                 1300                 1305

Arg Lys  Ile Pro Glu Phe Met  Tyr Glu Leu Pro Val  Thr Tyr Ile
    1310                 1315                 1320

Glu Ala  Phe Leu Arg Gly Leu  Phe Ser Ala Asp Gly  Thr Val Thr
    1325                 1330                 1335

Ile Arg  Lys Gly Val Pro Glu  Ile Arg Leu Thr Asn  Ile Asp Ala
    1340                 1345                 1350

Asp Phe  Leu Arg Glu Val Arg  Lys Leu Leu Trp Ile  Val Gly Ile
    1355                 1360                 1365

Ser Asn  Ser Ile Phe Ala Glu  Thr Thr Pro Asn Arg  Tyr Asn Gly
    1370                 1375                 1380

Val Ser  Thr Gly Thr Tyr Ser  Lys His Leu Arg Ile  Lys Asn Lys
    1385                 1390                 1395

Trp Arg  Phe Ala Glu Arg Ile  Gly Phe Leu Ile Glu  Arg Lys Gln
    1400                 1405                 1410

Lys Arg  Leu Leu Glu His Leu  Lys Ser Ala Arg Val  Lys Arg Asn
    1415                 1420                 1425

Thr Ile  Asp Phe Gly Phe Asp  Leu Val His Val Lys  Lys Val Glu
    1430                 1435                 1440

Glu Ile  Pro Tyr Glu Gly Tyr  Val Tyr Asp Ile Glu  Val Glu Glu
    1445                 1450                 1455

Thr His  Arg Phe Phe Ala Asn  Asn Ile Leu Val His  Asn Thr Asp
    1460                 1465                 1470

Gly Phe  Tyr Ala Thr Ile Pro  Gly Glu Lys Pro Glu  Leu Ile Lys
    1475                 1480                 1485

Lys Lys  Ala Lys Glu Phe Leu  Asn Tyr Ile Asn Ser  Lys Leu Pro
    1490                 1495                 1500

Gly Leu  Leu Glu Leu Glu Tyr  Glu Gly Phe Tyr Leu  Arg Gly Phe
    1505                 1510                 1515
```

```
Phe Val  Thr Lys Lys Arg Tyr  Ala Val Ile Asp Glu  Glu Gly Arg
    1520                1525                1530


Ile Thr  Thr Arg Gly Leu Glu  Val Val Arg Arg Asp  Trp Ser Glu
    1535                1540                1545


Ile Ala  Lys Glu Thr Gln Ala  Lys Val Leu Glu Ala  Ile Leu Lys
    1550                1555                1560


Glu Gly  Ser Val Glu Lys Ala  Val Glu Val Val Arg  Asp Val Val
    1565                1570                1575


Glu Lys  Ile Ala Lys Tyr Arg  Val Pro Leu Glu Lys  Leu Val Ile
    1580                1585                1590


His Glu  Gln Ile Thr Arg Asp  Leu Lys Asp Tyr Lys  Ala Ile Gly
    1595                1600                1605


Pro His  Val Ala Ile Ala Lys  Arg Leu Ala Ala Arg  Gly Ile Lys
    1610                1615                1620


Val Lys  Pro Gly Thr Ile Ile  Ser Tyr Ile Val Leu  Lys Gly Ser
    1625                1630                1635


Gly Lys  Ile Ser Asp Arg Val  Ile Leu Leu Thr Glu  Tyr Asp Pro
    1640                1645                1650


Arg Lys  His Lys Tyr Asp Pro  Asp Tyr Tyr Ile Glu  Asn Gln Val
    1655                1660                1665


Leu Pro  Ala Val Leu Arg Ile  Leu Glu Ala Phe Gly  Tyr Arg Lys
    1670                1675                1680


Glu Asp  Leu Arg Tyr Gln Ser  Ser Lys Gln Thr Gly  Leu Asp Ala
    1685                1690                1695


Trp Leu  Lys Arg
    1700


<210>  284
<211>  1312
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  284

Met Ile Leu Asp Ala Asp Tyr Ile Thr Glu Asp Gly Lys Pro Ile Ile
1               5                  10                  15
```

```
Arg Ile Phe Lys Lys Glu Asn Gly Glu Phe Lys Val Glu Tyr Asp Arg
            20                  25                  30

Asn Phe Arg Pro Tyr Ile Tyr Ala Leu Leu Lys Asp Asp Ser Gln Ile
        35                  40                  45

Asp Glu Val Arg Lys Ile Thr Ala Glu Arg His Gly Lys Ile Val Arg
    50                  55                  60

Ile Ile Asp Ala Glu Lys Val Arg Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80

Glu Val Trp Arg Leu Tyr Phe Glu His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95

Arg Asp Lys Ile Arg Glu His Ser Ala Val Ile Asp Ile Phe Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Lys Leu Leu Ala Phe Asp Ile Glu Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Ala Lys Gly Pro Ile Ile Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Glu Glu Glu Ala Lys Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Glu Val Val Ser Ser Glu Arg Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Lys Val Ile Arg Glu Lys Asp Pro Asp Val Ile Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Ser Phe Asp Leu Pro Tyr Leu Val Lys Arg Ala Glu
    210                 215                 220

Lys Leu Gly Ile Lys Leu Pro Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Met Gln Arg Leu Gly Asp Met Thr Ala Val Glu Ile Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr His Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270
```

```
Tyr Thr Leu Glu Ala Val Tyr Glu Ala Ile Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala His Glu Ile Ala Glu Ala Trp Glu Thr Gly Lys Gly
    290                 295                 300

Leu Glu Arg Val Ala Lys Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Val Gly Gln Pro Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Tyr Leu Leu Arg Lys Ala Tyr Glu Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Tyr Glu Arg Arg Leu Arg Glu Ser
    370                 375                 380

Tyr Ala Gly Gly Tyr Val Lys Glu Pro Glu Lys Gly Leu Trp Glu Gly
385                 390                 395                 400

Leu Val Ser Leu Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile Ile Thr
                405                 410                 415

His Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Arg Glu Tyr
            420                 425                 430

Asp Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly
        435                 440                 445

Phe Ile Pro Ser Leu Leu Lys Arg Leu Leu Asp Glu Arg Gln Glu Ile
    450                 455                 460

Lys Arg Lys Met Lys Ala Ser Lys Asp Pro Ile Glu Lys Lys Met Leu
465                 470                 475                 480

Asp Tyr Arg Gln Arg Ala Ile Lys Ile Leu Ala Asn Ser Ile Leu Pro
                485                 490                 495

Glu Glu Trp Val Pro Leu Ile Lys Asn Gly Lys Val Lys Ile Phe Arg
            500                 505                 510

Ile Gly Asp Phe Val Asp Gly Leu Met Lys Ala Asn Gln Gly Lys Val
        515                 520                 525
```

```
Lys Lys Thr Gly Asp Thr Glu Val Leu Glu Val Ala Gly Ile His Ala
    530                 535                 540


Phe Ser Phe Asp Arg Lys Ser Lys Lys Ala Arg Val Met Ala Val Lys
545                 550                 555                 560


Ala Val Ile Arg His Arg Tyr Ser Gly Asn Val Tyr Arg Ile Val Leu
                565                 570                 575


Asn Ser Gly Arg Lys Ile Thr Ile Thr Glu Gly His Ser Leu Phe Val
            580                 585                 590


Tyr Arg Asn Gly Asp Leu Val Glu Ala Thr Gly Glu Asp Val Lys Ile
        595                 600                 605


Gly Asp Leu Leu Ala Val Pro Arg Ser Val Asn Leu Pro Glu Lys Arg
    610                 615                 620


Glu Arg Leu Asn Ile Val Glu Leu Leu Leu Asn Leu Ser Pro Glu Glu
625                 630                 635                 640


Thr Glu Asp Ile Ile Leu Thr Ile Pro Val Lys Gly Arg Lys Asn Phe
                645                 650                 655


Phe Lys Gly Met Leu Arg Thr Leu Arg Trp Ile Phe Gly Glu Glu Lys
            660                 665                 670


Arg Val Arg Thr Ala Ser Arg Tyr Leu Arg His Leu Glu Asn Leu Gly
        675                 680                 685


Tyr Ile Arg Leu Arg Lys Ile Gly Tyr Asp Ile Ile Asp Lys Glu Gly
    690                 695                 700


Leu Glu Lys Tyr Arg Thr Leu Tyr Glu Lys Leu Val Asp Val Val Arg
705                 710                 715                 720


Tyr Asn Gly Asn Lys Arg Glu Tyr Leu Val Glu Phe Asn Ala Val Arg
                725                 730                 735


Asp Val Ile Ser Leu Met Pro Glu Glu Glu Leu Lys Glu Trp Arg Ile
            740                 745                 750


Gly Thr Arg Asn Gly Phe Arg Met Gly Thr Phe Val Asp Ile Asp Glu
        755                 760                 765


Asp Phe Ala Lys Leu Leu Gly Tyr Tyr Val Ser Glu Gly Ser Ala Arg
    770                 775                 780


Lys Trp Lys Asn Gln Thr Gly Gly Trp Ser Tyr Thr Val Arg Leu Tyr
```

```
785                 790                 795                 800

Asn Glu Asn Asp Glu Val Leu Asp Asp Met Glu His Leu Ala Lys Lys
                805                 810                 815

Phe Phe Gly Lys Val Lys Arg Gly Lys Asn Tyr Val Glu Ile Pro Lys
            820                 825                 830

Lys Met Ala Tyr Ile Ile Phe Glu Ser Leu Cys Gly Thr Leu Ala Glu
        835                 840                 845

Asn Lys Arg Val Pro Glu Val Ile Phe Thr Ser Ser Lys Gly Val Arg
    850                 855                 860

Trp Ala Phe Leu Glu Gly Tyr Phe Ile Gly Asp Gly Asp Val His Pro
865                 870                 875                 880

Ser Lys Arg Val Arg Leu Ser Thr Lys Ser Glu Leu Leu Val Asn Gly
                885                 890                 895

Leu Val Leu Leu Leu Asn Ser Leu Gly Val Ser Ala Ile Lys Leu Gly
            900                 905                 910

Tyr Asp Ser Gly Val Tyr Arg Val Tyr Val Asn Glu Glu Leu Lys Phe
        915                 920                 925

Thr Glu Tyr Arg Lys Lys Lys Asn Val Tyr His Ser His Ile Val Pro
    930                 935                 940

Lys Asp Ile Leu Lys Glu Thr Phe Gly Lys Val Phe Gln Lys Asn Ile
945                 950                 955                 960

Ser Tyr Lys Lys Phe Arg Glu Leu Val Glu Asn Gly Lys Leu Asp Arg
                965                 970                 975

Glu Lys Ala Lys Arg Ile Glu Trp Leu Leu Asn Gly Asp Ile Val Leu
            980                 985                 990

Asp Arg Val Val Glu Ile Lys Arg  Glu Tyr Tyr Asp Gly  Tyr Val Tyr
        995                 1000                1005

Asp Leu  Ser Val Asp Glu Asp  Glu Asn Phe Leu Ala  Gly Phe Gly
    1010                1015                1020

Phe Leu  Tyr Ala His Asn Ser  Tyr Tyr Gly Tyr Tyr  Gly Tyr Ala
    1025                1030                1035

Lys Ala  Arg Trp Tyr Cys Lys  Glu Cys Ala Glu Ser  Val Thr Ala
    1040                1045                1050
```

```
Trp Gly  Arg Glu Tyr Ile Glu  Phe Val Arg Lys Glu  Leu Glu Glu
    1055                 1060                 1065

Lys Phe  Gly Phe Lys Val Leu  Tyr Ile Asp Thr Asp  Gly Leu Tyr
    1070                 1075                 1080

Ala Thr  Ile Pro Gly Ala Lys  Pro Glu Glu Ile Lys  Lys Lys Ala
    1085                 1090                 1095

Leu Glu  Phe Val Asp Tyr Ile  Asn Ala Lys Leu Pro  Gly Leu Leu
    1100                 1105                 1110

Glu Leu  Glu Tyr Glu Gly Phe  Tyr Val Arg Gly Phe  Phe Val Thr
    1115                 1120                 1125

Lys Lys  Lys Tyr Ala Leu Ile  Asp Glu Glu Gly Lys  Ile Ile Thr
    1130                 1135                 1140

Arg Gly  Leu Glu Ile Val Arg  Arg Asp Trp Ser Glu  Ile Ala Lys
    1145                 1150                 1155

Glu Thr  Gln Ala Lys Val Leu  Glu Ala Ile Leu Lys  His Gly Asn
    1160                 1165                 1170

Val Glu  Glu Ala Val Lys Ile  Val Lys Glu Val Thr  Glu Lys Leu
    1175                 1180                 1185

Ser Lys  Tyr Glu Ile Pro Pro  Glu Lys Leu Val Ile  Tyr Glu Gln
    1190                 1195                 1200

Ile Thr  Arg Pro Leu His Glu  Tyr Lys Ala Ile Gly  Pro His Val
    1205                 1210                 1215

Ala Val  Ala Lys Arg Leu Ala  Ala Arg Gly Val Lys  Val Arg Pro
    1220                 1225                 1230

Gly Met  Val Ile Gly Tyr Ile  Val Leu Arg Gly Asp  Gly Pro Ile
    1235                 1240                 1245

Ser Lys  Arg Ala Ile Leu Ala  Glu Glu Phe Asp Leu  Arg Lys His
    1250                 1255                 1260

Lys Tyr  Asp Ala Glu Tyr Tyr  Ile Glu Asn Gln Val  Leu Pro Ala
    1265                 1270                 1275

Val Leu  Arg Ile Leu Glu Ala  Phe Gly Tyr Arg Lys  Glu Asp Leu
    1280                 1285                 1290
```

```
Arg Trp  Gln Lys Thr Lys Gln  Thr Gly Leu Thr Ala  Trp Leu Asn
    1295                1300                1305


Ile Lys  Lys Lys
    1310
```

<210> 285
<211> 775
<212> PRT
<213> Pyrococcus furiosus

<400> 285

```
Met Ile Leu Asp Val Asp Tyr Ile Thr Glu Glu Gly Lys Pro Val Ile
1               5                   10                  15


Arg Leu Phe Lys Lys Glu Asn Gly Lys Phe Lys Ile Glu His Asp Arg
            20                  25                  30


Thr Phe Arg Pro Tyr Ile Tyr Ala Leu Leu Arg Asp Asp Ser Lys Ile
        35                  40                  45


Glu Glu Val Lys Lys Ile Thr Gly Glu Arg His Gly Lys Ile Val Arg
    50                  55                  60


Ile Val Asp Val Glu Lys Val Glu Lys Lys Phe Leu Gly Lys Pro Ile
65                  70                  75                  80


Thr Val Trp Lys Leu Tyr Leu Glu His Pro Gln Asp Val Pro Thr Ile
                85                  90                  95


Arg Glu Lys Val Arg Glu His Pro Ala Val Val Asp Ile Phe Glu Tyr
            100                 105                 110


Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125


Met Glu Gly Glu Glu Glu Leu Lys Ile Leu Ala Phe Asp Ile Glu Thr
    130                 135                 140


Leu Tyr His Glu Gly Glu Glu Phe Gly Lys Gly Pro Ile Ile Met Ile
145                 150                 155                 160


Ser Tyr Ala Asp Glu Asn Glu Ala Lys Val Ile Thr Trp Lys Asn Ile
                165                 170                 175


Asp Leu Pro Tyr Val Glu Val Val Ser Ser Glu Arg Glu Met Ile Lys
            180                 185                 190


Arg Phe Leu Arg Ile Ile Arg Glu Lys Asp Pro Asp Ile Ile Val Thr
```

195 200 205

Tyr Asn Gly Asp Ser Phe Asp Phe Pro Tyr Leu Ala Lys Arg Ala Glu
210 215 220

Lys Leu Gly Ile Lys Leu Thr Ile Gly Arg Asp Gly Ser Glu Pro Lys
225 230 235 240

Met Gln Arg Ile Gly Asp Met Thr Ala Val Glu Val Lys Gly Arg Ile
245 250 255

His Phe Asp Leu Tyr His Val Ile Thr Arg Thr Ile Asn Leu Pro Thr
260 265 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Ile Phe Gly Lys Pro Lys Glu
275 280 285

Lys Val Tyr Ala Asp Glu Ile Ala Lys Ala Trp Glu Ser Gly Glu Asn
290 295 300

Leu Glu Arg Val Ala Lys Tyr Ser Met Glu Asp Ala Lys Ala Thr Tyr
305 310 315 320

Glu Leu Gly Lys Glu Phe Leu Pro Met Glu Ile Gln Leu Ser Arg Leu
325 330 335

Val Gly Gln Pro Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
340 345 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Glu Arg Asn Glu Val Ala
355 360 365

Pro Asn Lys Pro Ser Glu Glu Glu Tyr Gln Arg Arg Leu Arg Glu Ser
370 375 380

Tyr Thr Gly Gly Phe Val Lys Glu Pro Glu Lys Gly Leu Trp Glu Asn
385 390 395 400

Ile Val Tyr Leu Asp Phe Arg Ala Leu Tyr Pro Ser Ile Ile Ile Thr
405 410 415

His Asn Val Ser Pro Asp Thr Leu Asn Leu Glu Gly Cys Lys Asn Tyr
420 425 430

Asp Ile Ala Pro Gln Val Gly His Lys Phe Cys Lys Asp Ile Pro Gly
435 440 445

Phe Ile Pro Ser Leu Leu Gly His Leu Leu Glu Glu Arg Gln Lys Ile
450 455 460

```
Lys Thr Lys Met Lys Glu Thr Gln Asp Pro Ile Glu Lys Ile Leu Leu
465                 470                 475                 480

Asp Tyr Arg Gln Lys Ala Ile Lys Leu Leu Ala Asn Ser Phe Tyr Gly
                485                 490                 495

Tyr Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Lys Glu Cys Ala Glu
            500                 505                 510

Ser Val Thr Ala Trp Gly Arg Lys Tyr Ile Glu Leu Val Trp Lys Glu
        515                 520                 525

Leu Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ile Asp Thr Asp Gly
    530                 535                 540

Leu Tyr Ala Thr Ile Pro Gly Gly Glu Ser Glu Glu Ile Lys Lys Lys
545                 550                 555                 560

Ala Leu Glu Phe Val Lys Tyr Ile Asn Ser Lys Leu Pro Gly Leu Leu
                565                 570                 575

Glu Leu Glu Tyr Glu Gly Phe Tyr Lys Arg Gly Phe Phe Val Thr Lys
            580                 585                 590

Lys Arg Tyr Ala Val Ile Asp Glu Glu Gly Lys Val Ile Thr Arg Gly
        595                 600                 605

Leu Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln
    610                 615                 620

Ala Arg Val Leu Glu Thr Ile Leu Lys His Gly Asp Val Glu Glu Ala
625                 630                 635                 640

Val Arg Ile Val Lys Glu Val Ile Gln Lys Leu Ala Asn Tyr Glu Ile
                645                 650                 655

Pro Pro Glu Lys Leu Ala Ile Tyr Glu Gln Ile Thr Arg Pro Leu His
            660                 665                 670

Glu Tyr Lys Ala Ile Gly Pro His Val Ala Val Ala Lys Lys Leu Ala
        675                 680                 685

Ala Lys Gly Val Lys Ile Lys Pro Gly Met Val Ile Gly Tyr Ile Val
    690                 695                 700

Leu Arg Gly Asp Gly Pro Ile Ser Asn Arg Ala Ile Leu Ala Glu Glu
705                 710                 715                 720
```

```
Tyr Asp Pro Lys Lys His Lys Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn
                725                 730                 735


Gln Val Leu Pro Ala Val Leu Arg Ile Leu Glu Gly Phe Gly Tyr Arg
            740                 745                 750


Lys Glu Asp Leu Arg Tyr Gln Lys Thr Arg Gln Val Gly Leu Thr Ser
        755                 760                 765


Trp Leu Asn Ile Lys Lys Ser
    770                 775


<210>  286
<211>  771
<212>  PRT
<213>  Pyrococcus sp.

<400>  286

Met Ile Ile Asp Ala Asp Tyr Ile Thr Glu Asp Gly Lys Pro Ile Ile
1               5                   10                  15


Arg Ile Phe Lys Lys Glu Lys Gly Glu Phe Lys Val Glu Tyr Asp Arg
            20                  25                  30


Thr Phe Arg Pro Tyr Ile Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45


Asp Glu Val Lys Lys Ile Thr Ala Glu Arg His Gly Lys Ile Val Arg
    50                  55                  60


Ile Thr Glu Val Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80


Glu Val Trp Lys Leu Tyr Leu Glu His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95


Arg Glu Lys Ile Arg Glu His Pro Ala Val Val Asp Ile Phe Glu Tyr
            100                 105                 110


Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Thr Pro
        115                 120                 125


Met Glu Gly Asn Glu Glu Leu Thr Phe Leu Ala Val Asp Ile Glu Thr
    130                 135                 140


Leu Tyr His Glu Gly Glu Glu Phe Gly Lys Gly Pro Ile Ile Met Ile
145                 150                 155                 160


Ser Tyr Ala Asp Glu Glu Gly Ala Lys Val Ile Thr Trp Lys Ser Ile
```

165 170 175

Asp Leu Pro Tyr Val Glu Val Val Ser Ser Glu Arg Glu Met Ile Lys
180 185 190

Arg Leu Val Lys Val Ile Arg Glu Lys Asp Pro Asp Val Ile Ile Thr
195 200 205

Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu Leu Lys Arg Ala Glu
210 215 220

Lys Leu Gly Ile Lys Leu Pro Leu Gly Arg Asp Asn Ser Glu Pro Lys
225 230 235 240

Met Gln Arg Met Gly Asp Ser Leu Ala Val Glu Ile Lys Gly Arg Ile
245 250 255

His Phe Asp Leu Phe Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
260 265 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Ile Phe Gly Lys Ser Lys Glu
275 280 285

Lys Val Tyr Ala His Glu Ile Ala Glu Ala Trp Glu Thr Gly Lys Gly
290 295 300

Leu Glu Arg Val Ala Lys Tyr Ser Met Glu Asp Ala Lys Val Thr Phe
305 310 315 320

Glu Leu Gly Lys Glu Phe Phe Pro Met Glu Ala Gln Leu Ala Arg Leu
325 330 335

Val Gly Gln Pro Val Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
340 345 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Glu Arg Asn Glu Leu Ala
355 360 365

Pro Asn Lys Pro Asp Glu Arg Glu Tyr Glu Arg Arg Leu Arg Glu Ser
370 375 380

Tyr Glu Gly Gly Tyr Val Lys Glu Pro Glu Lys Gly Leu Trp Glu Gly
385 390 395 400

Ile Val Ser Leu Asp Phe Arg Ser Leu Tyr Pro Ser Ile Ile Ile Thr
405 410 415

His Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Asn Cys Lys Glu Tyr
420 425 430

```
Asp Val Ala Pro Gln Val Gly His Arg Phe Cys Lys Asp Phe Pro Gly
        435                 440                 445

Phe Ile Pro Ser Leu Leu Gly Asn Leu Leu Glu Glu Arg Gln Lys Ile
    450                 455                 460

Lys Lys Arg Met Lys Glu Ser Lys Asp Pro Val Glu Lys Lys Leu Leu
465                 470                 475                 480

Asp Tyr Arg Gln Arg Ala Ile Lys Ile Leu Ala Asn Ser Tyr Tyr Gly
                485                 490                 495

Tyr Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Lys Glu Cys Ala Glu
            500                 505                 510

Ser Val Thr Ala Trp Gly Arg Gln Tyr Ile Asp Leu Val Arg Arg Glu
        515                 520                 525

Leu Glu Ser Arg Gly Phe Lys Val Leu Tyr Ile Asp Thr Asp Gly Leu
    530                 535                 540

Tyr Ala Thr Ile Pro Gly Ala Lys His Glu Glu Ile Lys Glu Lys Ala
545                 550                 555                 560

Leu Lys Phe Val Glu Tyr Ile Asn Ser Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Ala Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Leu Ile Asp Glu Glu Gly Lys Ile Val Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Lys Val Leu Glu Ala Ile Leu Lys His Gly Asn Val Asp Glu Ala Val
625                 630                 635                 640

Lys Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Ile Pro
                645                 650                 655

Pro Glu Lys Leu Val Ile Tyr Glu Gln Ile Thr Arg Pro Leu Ser Glu
            660                 665                 670

Tyr Lys Ala Ile Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685
```

```
Lys Gly Val Lys Val Lys Pro Gly Met Val Ile Gly Tyr Ile Val Leu
    690                 695                 700

Arg Gly Asp Gly Pro Ile Ser Lys Arg Ala Ile Ala Ile Glu Glu Phe
705                 710                 715                 720

Asp Pro Lys Lys His Lys Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735

Val Leu Pro Ala Val Glu Arg Ile Leu Arg Ala Phe Gly Tyr Arg Lys
            740                 745                 750

Glu Asp Leu Lys Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765

Leu Lys Phe
    770
```

<210> 287
<211> 903
<212> PRT
<213> Escherichia virus

<400> 287

```
Met Lys Glu Phe Tyr Leu Thr Val Glu Gln Ile Gly Asp Ser Ile Phe
1               5                   10                  15

Glu Arg Tyr Ile Asp Ser Asn Gly Arg Glu Arg Thr Arg Glu Val Glu
            20                  25                  30

Tyr Lys Pro Ser Leu Phe Ala His Cys Pro Glu Ser Gln Ala Thr Lys
        35                  40                  45

Tyr Phe Asp Ile Tyr Gly Lys Pro Cys Thr Arg Lys Leu Phe Ala Asn
    50                  55                  60

Met Arg Asp Ala Ser Gln Trp Ile Lys Arg Met Glu Asp Ile Gly Leu
65                  70                  75                  80

Glu Ala Leu Gly Met Asp Asp Phe Lys Leu Ala Tyr Leu Ser Asp Thr
                85                  90                  95

Tyr Asn Tyr Glu Ile Lys Tyr Asp His Thr Lys Ile Arg Val Ala Asn
            100                 105                 110

Phe Asp Ile Glu Val Thr Ser Pro Asp Gly Phe Pro Glu Pro Ser Gln
        115                 120                 125

Ala Lys His Pro Ile Asp Ala Ile Thr His Tyr Asp Ser Ile Asp Asp
```

130 135 140

Arg Phe Tyr Val Phe Asp Leu Leu Asn Ser Pro Tyr Gly Asn Val Glu
145 150 155 160

Glu Trp Ser Ile Glu Ile Ala Ala Lys Leu Gln Glu Gln Gly Gly Asp
165 170 175

Glu Val Pro Ser Glu Ile Ile Asp Lys Ile Ile Tyr Met Pro Phe Asp
180 185 190

Asn Glu Lys Glu Leu Leu Met Glu Tyr Leu Asn Phe Trp Gln Gln Lys
195 200 205

Thr Pro Val Ile Leu Thr Gly Trp Asn Val Glu Ser Phe Asp Ile Pro
210 215 220

Tyr Val Tyr Asn Arg Ile Lys Asn Ile Phe Gly Glu Ser Thr Ala Lys
225 230 235 240

Arg Leu Ser Pro His Arg Lys Thr Arg Val Lys Val Ile Glu Asn Met
245 250 255

Tyr Gly Ser Arg Glu Ile Ile Thr Leu Phe Gly Ile Ser Val Leu Asp
260 265 270

Tyr Ile Asp Leu Tyr Lys Lys Phe Ser Phe Thr Asn Gln Pro Ser Tyr
275 280 285

Ser Leu Asp Tyr Ile Ser Glu Phe Glu Leu Asn Val Gly Lys Leu Lys
290 295 300

Tyr Asp Gly Pro Ile Ser Lys Leu Arg Glu Ser Asn His Gln Arg Tyr
305 310 315 320

Ile Ser Tyr Asn Ile Ile Asp Val Tyr Arg Val Leu Gln Ile Asp Ala
325 330 335

Lys Arg Gln Phe Ile Asn Leu Ser Leu Asp Met Gly Tyr Tyr Ala Lys
340 345 350

Ile Gln Ile Gln Ser Val Phe Ser Pro Ile Lys Thr Trp Asp Ala Ile
355 360 365

Ile Phe Asn Ser Leu Lys Glu Gln Asn Lys Val Ile Pro Gln Gly Arg
370 375 380

Ser His Pro Val Gln Pro Tyr Pro Gly Ala Phe Val Lys Glu Pro Ile
385 390 395 400

```
Pro Asn Arg Tyr Lys Tyr Val Met Ser Phe Asp Leu Thr Ser Leu Tyr
                405                 410                 415

Pro Ser Ile Ile Arg Gln Val Asn Ile Ser Pro Glu Thr Ile Ala Gly
            420                 425                 430

Thr Phe Lys Val Ala Pro Leu His Asp Tyr Ile Asn Ala Val Ala Glu
        435                 440                 445

Arg Pro Ser Asp Val Tyr Ser Cys Ser Pro Asn Gly Met Met Tyr Tyr
    450                 455                 460

Lys Asp Arg Asp Gly Val Val Pro Thr Glu Ile Thr Lys Val Phe Asn
465                 470                 475                 480

Gln Arg Lys Glu His Lys Gly Tyr Met Leu Ala Ala Gln Arg Asn Gly
                485                 490                 495

Glu Ile Ile Lys Glu Ala Leu His Asn Pro Asn Leu Ser Val Asp Glu
            500                 505                 510

Pro Leu Asp Val Asp Tyr Arg Phe Asp Phe Ser Asp Glu Ile Lys Glu
        515                 520                 525

Lys Ile Lys Lys Leu Ser Ala Lys Ser Leu Asn Glu Met Leu Phe Arg
    530                 535                 540

Ala Gln Arg Thr Glu Val Ala Gly Met Thr Ala Gln Ile Asn Arg Lys
545                 550                 555                 560

Leu Leu Ile Asn Ser Leu Tyr Gly Ala Leu Gly Asn Val Trp Phe Arg
                565                 570                 575

Tyr Tyr Asp Leu Arg Asn Ala Thr Ala Ile Thr Thr Phe Gly Gln Met
            580                 585                 590

Ala Leu Gln Trp Ile Glu Arg Lys Val Asn Glu Tyr Leu Asn Glu Val
        595                 600                 605

Cys Gly Thr Glu Gly Glu Ala Phe Val Leu Tyr Gly Asp Thr Asp Ser
    610                 615                 620

Ile Tyr Val Ser Ala Asp Lys Ile Ile Asp Lys Val Gly Glu Ser Lys
625                 630                 635                 640

Phe Arg Asp Thr Asn His Trp Val Asp Phe Leu Asp Lys Phe Ala Arg
                645                 650                 655
```

```
Glu Arg Met Glu Pro Ala Ile Asp Arg Gly Phe Arg Glu Met Cys Glu
            660                 665                 670

Tyr Met Asn Asn Lys Gln His Leu Met Phe Met Asp Arg Glu Ala Ile
        675                 680                 685

Ala Gly Pro Pro Leu Gly Ser Lys Gly Ile Gly Gly Phe Trp Thr Gly
    690                 695                 700

Lys Lys Arg Tyr Ala Leu Asn Val Trp Asp Met Glu Gly Thr Arg Tyr
705                 710                 715                 720

Ala Glu Pro Lys Leu Lys Ile Met Gly Leu Glu Thr Gln Lys Ser Ser
                725                 730                 735

Thr Pro Lys Ala Val Gln Lys Ala Leu Lys Glu Cys Ile Arg Arg Met
            740                 745                 750

Leu Gln Glu Gly Glu Glu Ser Leu Gln Glu Tyr Phe Lys Glu Phe Glu
        755                 760                 765

Lys Glu Phe Arg Gln Leu Asn Tyr Ile Ser Ile Ala Ser Val Ser Ser
    770                 775                 780

Ala Asn Asn Ile Ala Lys Tyr Asp Val Gly Gly Phe Pro Gly Pro Lys
785                 790                 795                 800

Cys Pro Phe His Ile Arg Gly Ile Leu Thr Tyr Asn Arg Ala Ile Lys
                805                 810                 815

Gly Asn Ile Asp Ala Pro Gln Val Val Glu Gly Glu Lys Val Tyr Val
            820                 825                 830

Leu Pro Leu Arg Glu Gly Asn Pro Phe Gly Asp Lys Cys Ile Ala Trp
        835                 840                 845

Pro Ser Gly Thr Glu Ile Thr Asp Leu Ile Lys Asp Asp Val Leu His
    850                 855                 860

Trp Met Asp Tyr Thr Val Leu Leu Glu Lys Thr Phe Ile Lys Pro Leu
865                 870                 875                 880

Glu Gly Phe Thr Ser Ala Ala Lys Leu Asp Tyr Glu Lys Lys Ala Ser
                885                 890                 895

Leu Phe Asp Met Phe Asp Phe
            900
```

<210> 288
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 288

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
```

740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 289
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 289

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
```

435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Gly His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  290
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  290

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Arg Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
```

```
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  291
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  291

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95
```

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Gly Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  292
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  292

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Gly Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
```

565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 293
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 293

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Met Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
```

260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

```
His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 294
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 294

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480
```

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Gly Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 295
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 295

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gln Leu
                485                 490                 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Ser Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
```

690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 296
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 296

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
```

385 390 395 400

Lys Arg Ala Ile Ser His Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 297
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 297

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
```

85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  298
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  298

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Asn Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Cys Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  299
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  299
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```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ala Leu
                485                 490                 495

Leu Ala Gly Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
```

```
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 300
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 300

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu

210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met His Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  301
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  301

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Ser Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 302
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 302

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415


Ser Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
```

645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 303
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 303

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
```

```
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Ile Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 304
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 304

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
```

35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Val
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 305
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 305

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ser Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
```

770

<210> 306
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 306

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
```

```
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Val Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  307
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  307

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
```

```
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 308
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 308

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Tyr Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  309
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  309

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
                405                 410                 415

Tyr Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
```

595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 310
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 310

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
```

290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

```
Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 311
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 311

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Arg Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 312
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 312

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Phe Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
```

725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 313
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 313

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
```

420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Ser Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asn Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 314
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 314

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
```

```
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  315
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  315

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala His Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  316
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  316

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Leu
                405                 410                 415

Tyr Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
```

545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 317
<211> 773
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 317

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
```

245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ser Leu
485 490 495

Leu Ala Ser Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 318
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 318

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Val Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 319
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 319

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Lys Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Val Arg Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asn Val Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Val Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Ile Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Ser Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
```

675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 320
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 320

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
```

370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Lys
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  321
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  321

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
```

65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  322
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  322

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Arg Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 323
<211> 766
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 323

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240
```

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
```

```
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys
        755                 760                 765
```

<210> 324
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 324

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu

210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Ile Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 325
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 325

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Lys Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 326
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 326

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Ile Lys Gln Gln Ala Leu Lys Ala
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
```

645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 327
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 327

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
```

```
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Arg Ser Leu Lys Ala
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  328
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  328

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
```

35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Ile Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 329
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 329

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Ser Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
```

770

<210> 330
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 330

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Met Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
```

```
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  331
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  331

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
```

```
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 332
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 332

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Asp Met Glu Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gln Leu
                485                 490                 495

Leu Ala Ala Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  333
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  333

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Lys Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asn Val Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Val Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Ile Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Ser Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
```

595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 334
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 334

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
```

290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Val Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 335
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 335

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Arg Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 336
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 336

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Trp Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
```

725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 337
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 337

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Gly Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
```

420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 338
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 338

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
```

```
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Gly Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  339
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  339

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Gly Gly
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  340
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  340

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Pro Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
```

545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 341
<211> 773
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 341

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
```

245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Gly Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

```
Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 342
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 342

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Ala Arg Gly Met Ala Glu Tyr Ile Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 343
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 343

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Lys Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
```

675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 344
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 344

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
```

370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
405 410 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  345
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  345

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
```

65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Ser Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590
```

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  346
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  346

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30
```

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 347
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 347

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Ile Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240
```

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
```

```
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 348
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 348

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile

```
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Leu Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  349
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  349

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160
```

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Asp Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415
```

```
Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  350
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  350

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Ala
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Lys
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
```

625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 351
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 351

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu His Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
```

325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

```
Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  352
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  352

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
```

```
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285
```

```
Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Gly Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 353
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 353

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495
```

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
```

```
         755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  354
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  354

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
```

```
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720
```

```
Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  355
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  355

Met Lys Lys Thr Leu Leu Asp Ala Asp Phe Ile Thr Arg Lys Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Val Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Val Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
```

145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
405 410 415

```
Gly Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Ser Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670
```

```
Gln Ile Thr Arg Gly Met Ala Asp Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 356
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 356

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110
```

```
Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365
```

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Ser Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  357
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  357

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Arg Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
```

```
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  358
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  358

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
```

```
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Ser Leu
                485                 490                 495

Leu Ala Ala Ser Met Thr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540
```

```
Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  359
<211>  773
<212>  PRT
```

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 359

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240
```

```
Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Val Leu Gln Leu
                485                 490                 495
```

```
Leu Ala Val Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 360
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 360

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Thr
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
```

705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 361
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 361

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
```

405 410 415

Ser Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

```
Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 362
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 362

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
```

100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

```
Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  363
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  363

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60
```

```
Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Ser Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Ser
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770
```

<210> 364
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 364

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Lys Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
```

530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 365
<211> 773

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 365

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp

225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Val
405 410 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

```
Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750
```

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  366
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  366

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190
```

```
Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  367
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  367

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415


Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ala Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
```

660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 368
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 368

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
```

```
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Ser Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620
```

```
Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  369
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  369

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
```

```
     50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320
```

```
Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575
```

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 370
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 370

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15
```

```
Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270
```

```
Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ser Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525
```

```
Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 371

<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 371

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220
```

```
Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gly Ser Leu Lys Ala
```

485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

```
Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  372
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  372

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
```

```
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ile
                405                 410                 415

Gly Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445
```

```
Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700
```

```
Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  373
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  373

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140
```

```
Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400
```

```
Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ala
                405                 410                 415

Ile Thr Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655
```

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 374
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 374

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

```
Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400


Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415


Ala Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430


Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445


Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460


Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
```

610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 375
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 375

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
```

305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Thr
405 410 415

Ala Ala Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

```
Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 376
<211> 775
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 376

```
Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
```

```
1               5                   10                  15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30

Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Ala Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270
```

```
Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Ser Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480

Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510

Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525
```

```
Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765

Leu Lys Val Lys Gly Lys Lys
    770                 775
```

<210> 377
<211> 775
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 377

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1 5 10 15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
20 25 30

Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
35 40 45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
50 55 60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65 70 75 80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
85 90 95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
100 105 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
115 120 125

Ala Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
130 135 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145 150 155 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
165 170 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
180 185 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
195 200 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
210 215 220

```
Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Phe Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480
```

```
Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495


Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510


Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525


Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540


His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560


Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575


Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590


Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605


Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620


Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640


Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655


Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670


Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685


Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700


Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720


Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735


Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
```

740 745 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
755 760 765

Leu Lys Val Lys Gly Lys Lys
770 775

<210> 378
<211> 775
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 378

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1 5 10 15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
20 25 30

Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
35 40 45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
50 55 60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65 70 75 80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
85 90 95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
100 105 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
115 120 125

Ala Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
130 135 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145 150 155 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
165 170 175

```
Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190


Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205


Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220


Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240


Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255


His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270


Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285


Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300


Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320


Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335


Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350


Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365


Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380


Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400


Val Tyr Leu Asp Phe Arg Ser Phe Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415


Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430


Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
```

435 440 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
450 455 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465 470 475 480

Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Gly Phe Tyr Gly Tyr
485 490 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
500 505 510

Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
515 520 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
530 535 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545 550 555 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
565 570 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
580 585 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
595 600 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
610 615 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625 630 635 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
645 650 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
660 665 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
675 680 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
690 695 700

```
Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720


Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735


Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750


Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765


Leu Lys Val Lys Gly Lys Lys
    770                 775


<210>  379
<211>  775
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  379

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15


Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30


Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45


Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60


Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80


Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95


Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110


Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125


Met Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
```

130 135 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145 150 155 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
165 170 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
180 185 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
195 200 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
210 215 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225 230 235 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
245 250 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
260 265 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
275 280 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
290 295 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305 310 315 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
325 330 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
340 345 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
355 360 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
370 375 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385 390 395 400

```
Val Tyr Leu Asp Phe Arg Ser Ser Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480

Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510

Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655
```

```
Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765

Leu Lys Val Lys Gly Lys Lys
    770                 775


<210>  380
<211>  775
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  380

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15

Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30

Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45

Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95
```

```
Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350
```

```
Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Phe Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480

Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510

Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605
```

```
Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620


Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640


Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655


Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670


Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685


Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700


Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720


Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735


Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750


Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765


Leu Lys Val Lys Gly Lys Lys
    770                 775


<210>  381
<211>  775
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  381

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15


Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30


Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45
```

```
Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60

Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80

Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95

Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110

Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125

Met Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140

Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160

Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175

Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300
```

```
Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320


Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335


Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350


Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365


Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380


Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400


Val Tyr Leu Asp Phe Arg Ser Phe Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415


Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430


Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445


Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460


Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480


Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Gly Phe Tyr Gly Tyr
                485                 490                 495


Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510


Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525


Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540


His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560


Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
```

565 570 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
580 585 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
595 600 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
610 615 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625 630 635 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
645 650 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
660 665 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
675 680 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
690 695 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705 710 715 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
725 730 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
740 745 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
755 760 765

Leu Lys Val Lys Gly Lys Lys
770 775

<210> 382
<211> 775
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 382

```
Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15


Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30


Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45


Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60


Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80


Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95


Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110


Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125


Ala Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140


Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160


Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175


Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190


Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205


Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220


Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240


Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255


His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
```

260 265 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
275 280 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
290 295 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305 310 315 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
325 330 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
340 345 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
355 360 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
370 375 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385 390 395 400

Val Tyr Leu Asp Phe Arg Ser Ser Ala Gly Ser Ile Ile Ile Thr His
405 410 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
420 425 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
435 440 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
450 455 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465 470 475 480

Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
485 490 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
500 505 510

Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
515 520 525

```
Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765

Leu Lys Val Lys Gly Lys Lys
    770                 775
```

<210> 383
<211> 775
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 383

```
Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15


Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30


Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45


Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60


Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80


Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95


Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110


Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125


Ala Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140


Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160


Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175


Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190


Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205


Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220
```

```
Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Phe Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430

Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445

Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460

Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480
```

```
Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Ser Phe Tyr Gly Tyr
                485                 490                 495

Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510

Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525

Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540

His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560

Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575

Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590

Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605

Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620

Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640

Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655

Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670

Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685

Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
    690                 695                 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705                 710                 715                 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
                725                 730                 735
```

```
Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
            740                 745                 750


Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
        755                 760                 765


Leu Lys Val Lys Gly Lys Lys
    770                 775


<210>  384
<211>  775
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  384

Met Ile Leu Asp Thr Asp Tyr Ile Thr Glu Asn Gly Lys Pro Val Ile
1               5                   10                  15


Arg Val Phe Lys Lys Glu Asn Gly Glu Phe Lys Ile Glu Tyr Asp Arg
            20                  25                  30


Thr Phe Glu Pro Tyr Phe Tyr Ala Leu Leu Lys Asp Asp Ser Ala Ile
        35                  40                  45


Glu Asp Val Lys Lys Val Thr Ala Lys Arg His Gly Thr Val Val Lys
    50                  55                  60


Val Lys Arg Ala Glu Lys Val Gln Lys Lys Phe Leu Gly Arg Pro Ile
65                  70                  75                  80


Glu Val Trp Lys Leu Tyr Phe Asn His Pro Gln Asp Val Pro Ala Ile
                85                  90                  95


Arg Asp Arg Ile Arg Ala His Pro Ala Val Val Asp Ile Tyr Glu Tyr
            100                 105                 110


Asp Ile Pro Phe Ala Lys Arg Tyr Leu Ile Asp Lys Gly Leu Ile Pro
        115                 120                 125


Ala Glu Gly Asp Glu Glu Leu Thr Met Leu Ala Phe Ala Ile Ala Thr
    130                 135                 140


Leu Tyr His Glu Gly Glu Glu Phe Gly Thr Gly Pro Ile Leu Met Ile
145                 150                 155                 160


Ser Tyr Ala Asp Gly Ser Glu Ala Arg Val Ile Thr Trp Lys Lys Ile
                165                 170                 175
```

```
Asp Leu Pro Tyr Val Asp Val Val Ser Thr Glu Lys Glu Met Ile Lys
            180                 185                 190

Arg Phe Leu Arg Val Val Arg Glu Lys Asp Pro Asp Val Leu Ile Thr
        195                 200                 205

Tyr Asn Gly Asp Asn Phe Asp Phe Ala Tyr Leu Lys Lys Arg Cys Glu
    210                 215                 220

Glu Leu Gly Ile Lys Phe Thr Leu Gly Arg Asp Gly Ser Glu Pro Lys
225                 230                 235                 240

Ile Gln Arg Met Gly Asp Arg Phe Ala Val Glu Val Lys Gly Arg Ile
                245                 250                 255

His Phe Asp Leu Tyr Pro Val Ile Arg Arg Thr Ile Asn Leu Pro Thr
            260                 265                 270

Tyr Thr Leu Glu Ala Val Tyr Glu Ala Val Phe Gly Lys Pro Lys Glu
        275                 280                 285

Lys Val Tyr Ala Glu Glu Ile Ala Gln Ala Trp Glu Ser Gly Glu Gly
    290                 295                 300

Leu Glu Arg Val Ala Arg Tyr Ser Met Glu Asp Ala Lys Val Thr Tyr
305                 310                 315                 320

Glu Leu Gly Arg Glu Phe Phe Pro Met Glu Ala Gln Leu Ser Arg Leu
                325                 330                 335

Ile Gly Gln Ser Leu Trp Asp Val Ser Arg Ser Ser Thr Gly Asn Leu
            340                 345                 350

Val Glu Trp Phe Leu Leu Arg Lys Ala Tyr Lys Arg Asn Glu Leu Ala
        355                 360                 365

Pro Asn Lys Pro Asp Glu Arg Glu Leu Ala Arg Arg Arg Gly Gly Tyr
    370                 375                 380

Ala Gly Gly Tyr Val Lys Glu Pro Glu Arg Gly Leu Trp Asp Asn Ile
385                 390                 395                 400

Val Tyr Leu Asp Phe Arg Ser Phe Ala Gly Ser Ile Ile Ile Thr His
                405                 410                 415

Asn Val Ser Pro Asp Thr Leu Asn Arg Glu Gly Cys Lys Glu Tyr Asp
            420                 425                 430
```

```
Val Ala Pro Glu Val Gly His Lys Phe Cys Lys Asp Phe Pro Gly Phe
        435                 440                 445


Ile Pro Ser Leu Leu Gly Asp Leu Leu Glu Glu Arg Gln Lys Ile Lys
    450                 455                 460


Arg Lys Met Lys Ala Thr Val Asp Pro Leu Glu Lys Lys Leu Leu Asp
465                 470                 475                 480


Tyr Arg Gln Arg Ser Ile Lys Ile Leu Ala Asn Gly Phe Tyr Gly Tyr
                485                 490                 495


Tyr Gly Tyr Ala Lys Ala Arg Trp Tyr Cys Leu Glu Cys Ala Glu Ser
            500                 505                 510


Val Thr Ala Trp Gly Arg Glu Tyr His Glu Met Val Ile Arg Glu Leu
        515                 520                 525


Glu Glu Lys Phe Gly Phe Lys Val Leu Tyr Ala Asp Thr Asp Gly Leu
    530                 535                 540


His Ala Thr Ile Pro Gly Ala Asp Ala Glu Thr Val Lys Lys Asp Ala
545                 550                 555                 560


Lys Glu Phe Leu Lys Tyr Ile Asn Pro Lys Leu Pro Gly Leu Leu Glu
                565                 570                 575


Leu Glu Tyr Glu Gly Phe Tyr Val Arg Gly Phe Phe Val Thr Lys Lys
            580                 585                 590


Lys Tyr Ala Val Ile Asp Glu Glu Gly Lys Ile Thr Thr Arg Gly Leu
        595                 600                 605


Glu Ile Val Arg Arg Asp Trp Ser Glu Ile Ala Lys Glu Thr Gln Ala
    610                 615                 620


Arg Val Leu Glu Ala Ile Leu Lys His Gly Asp Val Glu Glu Ala Val
625                 630                 635                 640


Arg Ile Val Lys Glu Val Thr Glu Lys Leu Ser Lys Tyr Glu Val Pro
                645                 650                 655


Pro Glu Lys Leu Val Ile His Glu Gln Ile Thr Arg Asp Leu Arg Asp
            660                 665                 670


Tyr Lys Ala Thr Gly Pro His Val Ala Val Ala Lys Arg Leu Ala Ala
        675                 680                 685


Arg Gly Val Lys Ile Arg Pro Gly Thr Val Ile Ser Tyr Ile Val Leu
```

690 695 700

Lys Gly Ser Gly Arg Ile Gly Asp Arg Ala Ile Pro Ala Asp Glu Phe
705 710 715 720

Asp Pro Thr Lys His Arg Tyr Asp Ala Glu Tyr Tyr Ile Glu Asn Gln
725 730 735

Val Leu Pro Ala Val Glu Arg Ile Leu Lys Ala Phe Gly Tyr Arg Lys
740 745 750

Glu Asp Leu Arg Tyr Gln Lys Thr Lys Gln Val Gly Leu Gly Ala Trp
755 760 765

Leu Lys Val Lys Gly Lys Lys
770 775

<210> 385
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 385

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175


Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190


Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205


Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220


Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240


Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255


Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270


Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285


Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300


Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320


Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335


His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350


Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365


Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380


Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
```

385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Val Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

```
Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 386
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 386

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
```

```
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350
```

```
Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Ala Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605
```

```
Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770


<210>  387
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  387

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45
```

```
Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300
```

```
Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Ala Val Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  388
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  388
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```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Gly
                405                 410                 415

Gly Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
```

```
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 389
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 389

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu

210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385 390 395 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
405 410 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

```
Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Val Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735
```

```
Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  390
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  390

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80


Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95


Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110


Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125


Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140


Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160


Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175
```

```
Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430
```

```
Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Ile Lys Gln Gln Ser Leu Lys Ala
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685
```

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 391
<211> 778
<212> PRT
<213> Unknown

<220>
<223> Description of Unknown: Candidatus Altiarchaeales archaeon sequence

<400> 391

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Val Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125
```

```
Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Asp Met Glu Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Lys
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Asn Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380
```

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Ser Gln Gly Ser Tyr Thr
    770                 775


<210>  392
<211>  773
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic polypeptide

<400>  392

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15


Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30


Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45


Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60


Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80
```

```
Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335
```

```
His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
```

595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
690 695 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705 710 715 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 393
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 393

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

```
Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
```

```
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Leu
                405                 410                 415

Tyr Pro Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Arg Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

Ile Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560
```

```
Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 394
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 394

```
Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Lys Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu Arg
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asn Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Val Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
        115                 120                 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
    130                 135                 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145                 150                 155                 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255
```

```
Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Ile Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510
```

```
Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685

Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asp Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765
```

Lys Leu Gly Gly Phe
770

<210> 395
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 395

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

```
Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Ser
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460
```

```
Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480


Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ala Leu Lys Ala
                485                 490                 495


Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510


Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525


His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540


Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545                 550                 555                 560


Arg Glu Arg Val Met Lys Asn Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575


Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590


Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605


Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620


Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640


Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
```

725 730 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
740 745 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
755 760 765

Lys Leu Gly Gly Phe
770

<210> 396
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 396

Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Gly Glu Lys
1 5 10 15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
20 25 30

Glu Val Ala Asp Ser Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
35 40 45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
50 55 60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65 70 75 80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
85 90 95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
100 105 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Gln Ile Pro Met Gln
115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

```
Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
                165                 170                 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
            180                 185                 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
        195                 200                 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
    210                 215                 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225                 230                 235                 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
                245                 250                 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
            260                 265                 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
        275                 280                 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
    290                 295                 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305                 310                 315                 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
                325                 330                 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
            340                 345                 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
        355                 360                 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
    370                 375                 380

Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
```

420 425 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
435 440 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
450 455 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465 470 475 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
485 490 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
500 505 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
515 520 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
530 535 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Asp
545 550 555 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
565 570 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
580 585 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
595 600 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
610 615 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625 630 635 640

Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
645 650 655

Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
660 665 670

Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
675 680 685

```
Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700

Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720

Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735

Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750

Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765

Lys Leu Gly Gly Phe
    770
```

<210> 397
<211> 773
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 397

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Met Lys Lys Thr Leu Leu Asp Ala Asp Tyr Ile Thr Arg Glu Glu Lys
1               5                   10                  15

Ala Val Val Arg Leu Phe Tyr Lys Thr Glu Glu Gly Arg Glu Ile Gln
            20                  25                  30

Glu Val Ala Asp Phe Arg Pro Tyr Met Tyr Val Leu Pro Glu Glu His
        35                  40                  45

Asp Leu Lys Lys Leu Gln Arg Glu Ile Lys Glu Leu Lys Asn Ile Thr
    50                  55                  60

Asn Val Glu Ile Lys Arg Met Ile Glu Gly Asp Arg Glu Val Glu Val
65                  70                  75                  80

Leu Lys Val Met Val Asn Gln Pro Arg Asp Val Pro Asn Leu Arg Gly
                85                  90                  95

Leu Ile Lys Glu Leu Glu Gly Cys Lys Glu Val Arg Glu Ala His Ile
            100                 105                 110

Pro Phe Ala Glu Arg Tyr Leu Ile Asp Ser Gly Leu Ile Pro Met Gln
```

115 120 125

Asp Cys Glu Asn Phe Asp Leu Arg Ile Ala Ala Phe Ala Met Ala Val
130 135 140

Tyr Asn Pro Arg Gly Glu Pro Lys Ala Glu Arg Asp Pro Ile Ile Ile
145 150 155 160

Ile Ser Tyr Ala Asp Asn Arg Gly Leu Arg Arg Val Trp Thr Tyr Lys
165 170 175

Thr Val Glu Asn Leu Asn Leu Asp Tyr Met Glu Val Leu Lys Asp Glu
180 185 190

Arg Glu Ile Ile Arg Arg Phe Ile Asp Thr Ile Arg Glu Arg Glu Ile
195 200 205

Asp Ile Ile Val Thr Tyr Asn Gly Asp Asn Phe Asp Phe Pro Tyr Leu
210 215 220

Lys Glu Arg Ala Glu Lys His Arg Ile Pro Val Ser Leu Gly Val Asp
225 230 235 240

Gly Ser Pro Leu Arg Leu Glu Arg Arg Gly Met Asn Leu Gly Ala Arg
245 250 255

Val Thr Gly Arg Pro His Ile Asp Met Tyr Pro Val Cys Arg Gln Ile
260 265 270

Phe Asn Leu Ser Arg Tyr Thr Leu Glu Asp Val Tyr Leu Glu Ile Thr
275 280 285

Gly Arg Glu Lys Lys Asp Ile Arg Val Gly Glu Met Ala Gly Ile Trp
290 295 300

Asp Asn Pro Glu Lys Glu Lys Phe Lys Glu Leu Ile Glu Tyr Ala Met
305 310 315 320

Ser Asp Ala Glu Ser Thr Leu Glu Ile Ala Ile Thr Leu Leu Pro Leu
325 330 335

His Tyr Glu Ile Ser Arg Ile Thr Arg Glu Leu Ile Tyr Gln Ser Ser
340 345 350

Arg Ala Gly Ser Gly Gln Arg Val Glu Ser Leu Leu Ile Lys Lys Ala
355 360 365

Phe Glu Lys Ser Ile Leu Val Pro Asn Arg Pro Ser Asp Arg Val Val
370 375 380

```
Asn Glu Arg Gln Arg Lys Thr Tyr Ile Gly Ala Tyr Val Val Glu Pro
385                 390                 395                 400

Lys Arg Gly Ile His Asp Asn Ile Leu Leu Phe Asp Phe Arg Ser Phe
                405                 410                 415

Ala Gly Ser Ile Ile Ile Ser His Asn Ile Asp Pro Ser Thr Ile Asp
            420                 425                 430

Cys Glu Cys Cys Pro Glu Asp Ser Tyr Arg Ser Pro Thr Gly His Tyr
        435                 440                 445

Phe Cys Lys Lys Lys Arg Gly Leu Ile Pro Glu Thr Leu Asn Glu Leu
    450                 455                 460

Val Gln Arg Arg Ile Glu Val Lys Lys Gly Leu Lys Asn Glu Lys Asn
465                 470                 475                 480

Pro Glu Arg Arg Arg Phe Leu Asp Val Lys Gln Gln Ser Leu Lys Leu
                485                 490                 495

Leu Ala Asn Ser Met Tyr Gly Tyr Phe Gly Phe Pro Arg Ala Arg Trp
            500                 505                 510

Tyr Cys Leu Glu Cys Ala Glu Ser Ile Thr Ala Leu Gly Arg Lys Tyr
        515                 520                 525

His Leu His Thr Ile Asp Ile Val Pro Lys Phe Gly Phe Asp Val Ile
    530                 535                 540

Tyr Gly Asp Thr Asp Ser Val Tyr Leu Ile Lys Pro Asn Ile Thr Glu
545                 550                 555                 560

Arg Glu Arg Val Met Lys Asp Ala Glu His Phe Leu Asp Lys Ile Asn
                565                 570                 575

Ser Glu Leu Pro Glu Ala Met Glu Leu Glu Phe Glu Gly Phe Tyr Pro
            580                 585                 590

Arg Gly Ile Phe Ile Thr Lys Lys Arg Tyr Ala Leu Ile Asp Glu Arg
        595                 600                 605

Gly Lys Leu Ile Val Lys Gly Leu Glu Thr Lys Arg Arg Asp Trp Ala
    610                 615                 620

Asn Ile Ala Lys Asp Thr Gln Glu Lys Val Leu Asp Ala Leu Leu Lys
625                 630                 635                 640
```

```
Asp Lys Asn Pro Glu Lys Ala Ala Ser Ile Val Lys Asp Val Ile Arg
                645                 650                 655


Asn Ile Lys Thr Gly Lys Ile Pro Leu Lys Asp Leu Ala Ile Asn Thr
            660                 665                 670


Gln Ile Thr Arg Gly Met Ala Glu Tyr Lys Thr Glu Gly Pro His Ile
        675                 680                 685


Val Ala Ala Lys Lys Ala Met Lys Arg Gly Leu Glu Phe Lys Gln Gly
    690                 695                 700


Asn Ile Val Thr Tyr Val Val Thr Lys Lys Gly Lys Ser Ile Ser Asp
705                 710                 715                 720


Lys Ala Arg Val Ile Asp Phe Val Glu Glu Gly Asp Tyr Asp Pro Asp
                725                 730                 735


Tyr Tyr Ile Asn Asn Gln Val Leu Pro Ser Val Leu Arg Ile Leu Glu
            740                 745                 750


Ala Leu Gly Tyr Ser Glu Asp Glu Leu Lys Gly Leu Gly Lys Gln Met
        755                 760                 765


Lys Leu Gly Gly Phe
    770


<210>  398
<211>  6
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: Synthetic 6x his tag

<400>  398

His His His His His His
1               5


<210>  399
<211>  5
<212>  PRT
<213>  Unknown

<220>
<223>  Description of Unknown: Candidatus Altiarchaeales archaeon
       sequence

<400>  399

Gln Gly Ser Tyr Thr
1               5
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