SEQUENCE LISTING

<110> DNA TWOPOINTO INC.

<120> TRANSPOSITION OF NUCLEIC ACID CONSTRUCTS INTO EUKARYOTIC GENOMES WITH A TRANSPOSASE FROM AMYELOIS

<130> 062195/546917

<150> 62/831,097
<151> 2019-04-08

<150> 62/873,342
<151> 2019-07-12

<150> 62/990,568
<151> 2020-03-17

<160> 931

<170> PatentIn version 3.5

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cggccatttt gacgagcgaa cttcagtctc acgtgagcgt gcgtgcgagt agcacgtgtg 180

taaagtgcgc gcgggcccgt gggaccctac caggcataca acgtaacatt ctgtcggtaa 240

gaatattttc tttatttttt ggcatttctt tgtttaatgt gttaaattat aatacgaaaa 300

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cggccatttt gacgagcgaa cttcagtctc acgtgagcgt gcgtgcgagt agcacgtgtg 180

taaagtgcgc gcgggcccgt gggaccctac caggcat 217

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ttaatttctg ttaattaaaa ttaagcgatt ttgaataatt gttaaataaa gatattttca 180

catacattta catattttat ttattatctg taataataat acattctaaa agacataaat 240

ataaaacaaa attttcctag cttgttcatt tgtgtaaaac atgtattttc aatatcgggt 300

ttgacagacc caccaggcat gccgtgtgat ttttatgtac caggcatgtc aagggttaa 359

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tttaaattga aggctattgt tgacgtgtgt tatagtagct tcgcgcaata aaccggcggc 120

cattttgacg agcgaacttc agtctcacgt gagcgtgcgt gcgagtagca cgtgtgtaaa 180

gtgcgcgcgg gcccgtggga ccctaccagg catacaacgt aacattctgt cggtaagaat 240

attttcttta ttttttggca tttctttgtt taatgtgtta aattataata cgaaaaaaat 300

attgttgcag tagaa 315

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ttaatttctg ttaattaaaa ttaagcgatt ttgaataatt gttaaataaa gatattttca 180

catacattta catattttat ttattatctg taataataat acattctaaa agacataaat 240

ataaaacaaa attttcctag cttgttcatt tgtgtaaaac atgtattttc aatatcgggt 300

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gttgacgtgt gttatagtag cttcgcgcaa taaaccggcg gccattttga cgagcgaact 120

tcagtctcac gtgagcgtgc gtgcgagtag cacgtgtgta aagtgcgcgc gggcccgtgg 180

gaccctacca ggcatacaac gtaacattct gtcggtaaga atattttctt tatttttggg 240

catttctttg tttaatgtgt taaattataa tacgaaaaaa atattgttgc agtagaa 297

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tgaaagtctg acttcgatct ctgcattata tgtaagattg ttaattatag aactaagagt 120

ttaatttctg ttaattaaaa ttaagcgatt ttgaataatt gttaaataaa gatattttca 180

catacattta catattttat ttattatctg taataataat acattctaaa agacataaat 240

ataaaacaaa attttcctag cttgttcatt tgtgtaaaac atgtattttc aatatcgggt 300

ttgacagacc caccaggcat gccgtgtgat ttttatg 337

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taccaggcat gycaaggg 18

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<400> 11
cccttggcat gcctggta 18

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<400> 12
taccaggcat gtcaaggg 18

<210> 13
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gttgacgtgt gttatagtag cttcgcgcaa taaaccggcg gccattttga cgagcgaact 120

tcagtctcac gtgagcgtgc gtgcgagtag cacgtgtgta aagtgcgcgc gggcccgtgg 180

gaccctacca ggcat 195

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<212> DNA
<213> Artificial sequence

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gttgacgtgt gttatagtag cttcgcgcaa taaaccggac cctaccaggc at 112

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<211> 187
<212> DNA
<213> Artificial sequence

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taataataat acattctaaa agacataaat ataaaacaaa attttcctag cttgttcatt 120

tgtgtaaaac atgtattttc aatatcgggt ttgacagacc caccaggcat gccgtgtgat 180

ttttatg 187

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<211> 82
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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ggcatgccgt gtgattttta tg 82

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<212> PRT
<213> Artificial sequence

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<223> Synthetic

<400> 17

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Ser Asp Asp Glu Leu Val Gly Glu Asp Ser Asp Ser Glu Val Ser Asp
20 25 30

His Val Ser Glu Asp Asp Val Gln Ser Asp Thr Glu Glu Ala Phe Ile
35 40 45

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

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

```
Arg Ile Leu Thr Leu Pro Gln Arg Thr Ile Arg Gly Lys Asn Lys His
                85                  90                  95

Cys Trp Ser Thr Ser Lys Ser Thr Arg Arg Ser Arg Val Ser Ala Leu
            100                 105                 110

Asn Ile Val Arg Ser Gln Arg Gly Pro Thr Arg Met Cys Arg Asn Ile
        115                 120                 125

Tyr Asp Pro Leu Leu Cys Phe Lys Leu Phe Phe Thr Asp Glu Ile Ile
    130                 135                 140

Ser Glu Ile Val Lys Trp Thr Asn Ala Glu Ile Ser Leu Lys Arg Arg
145                 150                 155                 160

Glu Ser Met Thr Ser Ala Thr Phe Arg Asp Thr Asn Glu Asp Glu Ile
                165                 170                 175

Tyr Ala Phe Phe Gly Ile Leu Val Met Thr Ala Val Arg Lys Asp Asn
            180                 185                 190

His Met Ser Thr Asp Asp Leu Phe Asp Arg Ser Leu Ser Met Val Tyr
        195                 200                 205

Val Ser Val Met Ser Arg Asp Arg Phe Asp Phe Leu Ile Arg Cys Leu
    210                 215                 220

Arg Met Asp Asp Lys Ser Ile Arg Pro Thr Leu Arg Glu Asn Asp Val
225                 230                 235                 240

Phe Thr Pro Val Arg Lys Ile Trp Asp Leu Phe Ile His Gln Cys Ile
                245                 250                 255

Gln Asn Tyr Thr Pro Gly Ala His Leu Thr Ile Asp Glu Gln Leu Leu
            260                 265                 270

Gly Phe Arg Gly Arg Cys Pro Phe Arg Val Tyr Ile Pro Asn Lys Pro
        275                 280                 285
```

```
Ser Lys Tyr Gly Ile Lys Ile Leu Met Met Cys Asp Ser Gly Thr Lys
    290                 295                 300

Tyr Met Ile Asn Gly Met Pro Tyr Leu Gly Arg Gly Thr Gln Thr Asn
305                 310                 315                 320

Gly Val Pro Leu Gly Glu Tyr Tyr Val Lys Glu Leu Ser Lys Pro Val
                325                 330                 335

His Gly Ser Cys Arg Asn Ile Thr Cys Asp Asn Trp Phe Thr Ser Ile
            340                 345                 350

Pro Leu Ala Lys Asn Leu Leu Gln Glu Pro Tyr Lys Leu Thr Ile Val
        355                 360                 365

Gly Thr Val Arg Ser Asn Lys Arg Glu Ile Pro Glu Val Leu Lys Asn
    370                 375                 380

Ser Arg Ser Arg Pro Val Gly Thr Ser Met Phe Cys Phe Asp Gly Pro
385                 390                 395                 400

Leu Thr Leu Val Ser Tyr Lys Pro Lys Pro Ala Lys Met Val Tyr Leu
                405                 410                 415

Leu Ser Ser Cys Asp Glu Asp Ala Ser Ile Asn Glu Ser Thr Gly Lys
            420                 425                 430

Pro Gln Met Val Met Tyr Tyr Asn Gln Thr Lys Gly Gly Val Asp Thr
        435                 440                 445

Leu Asp Gln Met Cys Ser Val Met Thr Cys Ser Arg Lys Thr Asn Arg
    450                 455                 460

Trp Pro Met Ala Leu Leu Tyr Gly Met Ile Asn Ile Ala Cys Ile Asn
465                 470                 475                 480

Ser Phe Ile Ile Tyr Ser His Asn Val Ser Ser Lys Gly Glu Lys Val
                485                 490                 495

Gln Ser Arg Lys Lys Phe Met Arg Asn Leu Tyr Met Ser Leu Thr Ser
            500                 505                 510
```

Ser Phe Met Arg Lys Arg Leu Glu Ala Pro Thr Leu Lys Arg Tyr Leu
515 520 525

Arg Asp Asn Ile Ser Asn Ile Leu Pro Lys Glu Val Pro Gly Thr Ser
530 535 540

Asp Asp Ser Thr Glu Glu Pro Val Met Lys Lys Arg Thr Tyr Cys Thr
545 550 555 560

Tyr Cys Pro Ser Lys Ile Arg Arg Lys Ala Asn Ala Ser Cys Lys Lys
565 570 575

Cys Lys Lys Val Ile Cys Arg Glu His Asn Ile Asp Met Cys Gln Ser
580 585 590

Cys Phe

<210> 18
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<212> PRT
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<220>
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<400> 18

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
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Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
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```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 19
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<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 19

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Arg Ser Asn Lys Thr Glu Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Met Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
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Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 20
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<212> PRT
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<223> Synthetic

<400> 20

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Met Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Ser Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Ile Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
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```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Lys Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  21
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<400>  21

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asn Asn
65                  70                  75                  80


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Met Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
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```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Arg Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Glu
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 22
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 22

Ser Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

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

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Arg Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 23
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 23

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

Glu Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65 70 75 80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Met Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 24
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 24

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

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

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Lys Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 25
<211> 588

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 25

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asn Asn
65                  70                  75                  80


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Asn Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 26
<211> 588
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 26

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Pro Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Leu Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Met Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 27
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 27

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Pro Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Lys
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 28
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 28

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gly Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Arg Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 29
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 29

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Asp Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Lys Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  30
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  30

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asn Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Ser Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 31
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 31

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Leu Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Met His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Met Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 32
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 32

Ser Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Pro Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  33
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  33

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe Gln Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Lys
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 34
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 34

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Met Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Arg Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Gly Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  35
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  35

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

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

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Lys
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  36
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  36

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Ala Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205


Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220


Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240


Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255


Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270


Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285


Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300


Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320


Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335


Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350


His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Met Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Pro Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Lys Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 37
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 37

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Pro Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Gly Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

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

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 38
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 38

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Glu Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Ala Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Met Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 39
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 39

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Asn Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Ala Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Glu
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 40
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 40

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Ile Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445


Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


Leu Asp Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Lys
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  41
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  41

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


Leu Asn Met Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Arg Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  42
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  42

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Met Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Glu Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Gln Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  43
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  43

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Ala Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Gln Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
485 490 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 44
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 44

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Gly Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Gln
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Gln Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 45
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 45

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

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

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

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

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asp Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  46
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  46

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Asp Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Ala Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asp Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  47
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  47

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Ile Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Ala Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Leu Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  48
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  48

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asp Met Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  49
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  49

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Gln
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Met Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 50
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 50

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Gly Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Cys
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Ser Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 51
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 51

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Ile Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Glu Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Gln
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 52
<211> 588

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 52

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

Glu Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65 70 75 80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
165 170 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
180 185 190

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Arg Ser Asn Lys Thr Cys Ile
        355                 360                 365

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

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Lys Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 53
<211> 588
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 53

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Leu Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Ala Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Leu Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Gly Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 54
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 54

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Asp Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Leu Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Met His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Met Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 55
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 55

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Ile Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Lys Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 56
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 56

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe Gln Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Glu Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Ile Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  57
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  57

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Arg Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Leu Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Lys Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 58
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 58

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Asn Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gly Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Gln
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 59
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 59

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Ile Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gly Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Gln Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  60
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  60

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Glu Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Glu
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 61
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 61

```
Ser Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


Glu Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Ile Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  62
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  62

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Gln Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  63
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  63

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


Glu Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205


Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220


Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240


Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255


Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270


Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285


Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300


Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320


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


Asp Asn Trp Phe Thr Ser Ile Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350


His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 64
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 64

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Leu Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Gly Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 65
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 65

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Asp Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

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

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 66
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 66

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asn Asn
65                  70                  75                  80


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Pro Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Lys His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 67
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 67

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe Gln Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Asn Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445


Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Pro Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  68
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  68

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Arg Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Glu Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Lys His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  69
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  69

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Glu Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

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

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Cys
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  70
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  70

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Ala Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Cys
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Lys Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  71
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  71

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Cys
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Met His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 72
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 72

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gly Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Ser Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Met Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 73
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 73

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Asn Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Ile Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  74
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  74

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Ile Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Ile Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Met Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  75
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  75

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Arg Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Arg Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Glu
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  76
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  76

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Asp Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 77
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 77

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Pro Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Arg Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 78
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 78

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Met Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Met Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 79
<211> 588

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 79

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
165 170 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
180 185 190

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Leu Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Ile Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Lys Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 80
<211> 588
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 80

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asn Asn
65                  70                  75                  80


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Gly Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Lys Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 81
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 81

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asp Thr Ala Gly Ile Asn Ala Lys Ile Ile Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 82
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 82

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Ala Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Met Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 83
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 83

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

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

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Met His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Lys Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  84
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  84

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Pro Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gly Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
485 490 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 85
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 85

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Asp Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Asp Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 86
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 86

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Arg Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Gln
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Arg Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 87
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 87

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Ile Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Arg Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 88
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 88

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Ala Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

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

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Lys His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  89
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  89

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Pro Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Gly Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  90
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  90

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Pro Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Ile Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Pro Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

```
Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  91
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  91

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160
```

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Glu Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Lys Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 92
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 92

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Asp Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Cys
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 93
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 93

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Ser Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Met Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 94
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 94

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Pro Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Arg Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Asp Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445


Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  95
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  95

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Pro Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Leu Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  96
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  96

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  97
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  97

Ser Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Gly Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Met Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
485 490 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 98
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 98

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

```
Glu Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Glu
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Met Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 99
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 99

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Gly Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Lys Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 100
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 100

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe Gln Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Arg Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 101
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 101

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Arg Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  102
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  102

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe Gln Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Lys Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  103
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  103

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Leu Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

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

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 104
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 104

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Ile Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
130 135 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 105
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 105

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Arg Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Ile Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Lys His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 106
<211> 588

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 106

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Arg Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Pro Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 107
<211> 588
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 107

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Glu Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 108
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 108

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Asp Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Met His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 109
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 109

```
Ser Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Lys Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 110
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 110

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Met Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Lys
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  111
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  111

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Met Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Lys His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 112
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 112

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Ile Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Ile Gln Met Leu Asn Ser
465                 470                 475                 480

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
500 505 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 113
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 113

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

Leu Ser Val Ile Leu Glu His Thr Asn His Lys Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Asp
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Met Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 114
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 114

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 115
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 115

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  116
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  116

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  117
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  117

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 118
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 118

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 119
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 119

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 120
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 120

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1   5   10   15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20   25   30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35   40   45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85   90   95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100   105   110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115   120   125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145   150   155   160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165   170   175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180   185   190

```
Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 121
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 121

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
165 170 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
180 185 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
195 200 205

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445


Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  122
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  122

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  123
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  123

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Arg Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  124
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  124

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  125
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  125

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 126
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 126

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  127
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  127

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 128
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 128

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  129
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  129

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  130
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  130

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 131
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 131

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 132
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 132

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 133
<211> 588

<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 133

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 134
<211> 588
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 134

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 135
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 135

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 136
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 136

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 137
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 137

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  138
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  138

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 139
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 139

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 140
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 140

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 141
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 141

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 142
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 142

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  143
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  143

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  144
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  144

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205


Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220


Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240


Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255


Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270


Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285


Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300


Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320


Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335


Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350


His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 145
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 145

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 146
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 146

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 147
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 147

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Phe Ala Ser Asp Gly Thr
            180                 185                 190
```

```
Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 148
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 148

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445


Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  149
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  149

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  150
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  150

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  151
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  151

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  152
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  152

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 153
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 153

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Pro Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
530 535 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545 550 555 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 154
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 154

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  155
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  155

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  156
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  156

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

```
Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  157
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  157

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140
```

```
Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575
```

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 158
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 158

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

```
Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365
```

```
Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 159
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 159

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175
```

```
Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380
```

```
Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400


Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415


Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430


Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445


Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460


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


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  160
<211>  588
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<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 160

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1 5 10 15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
20 25 30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
35 40 45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
85 90 95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
100 105 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
115 120 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145 150 155 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
165 170 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
180 185 190

```
Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400
```

```
Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 161
<211> 588
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 161

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125


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


Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160


Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175


Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190


Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205
```

```
Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415
```

```
Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 162
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 162

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                  10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Arg Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220
```

```
Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430
```

```
Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 163
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 163

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15
```

```
Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240
```

```
Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445
```

```
Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 164
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 164

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30
```

```
Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255
```

```
Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460
```

```
Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480


Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495


Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510


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


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  165
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  165

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45
```

```
Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270
```

```
Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Lys
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

Leu Asn Thr Ala Gly Ile Asn Ala Lys Ile Val Gln Met Leu Asn Ser
465                 470                 475                 480
```

```
Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 166
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 166

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

Pro Thr Leu Glu Pro Gln Gln Gly Ser Ser Asp Ser Glu Asn Asp Gln
    50                  55                  60
```

```
Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285
```

```
Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495
```

```
Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 167
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 167

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

Pro Leu Ser Asn Leu Ala Arg Arg Ser Phe Tyr Lys Gly Lys Asp Asn
65                  70                  75                  80
```

```
Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300
```

```
Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Leu Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Thr Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510
```

```
Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525


Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540


Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  168
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  168

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95
```

```
Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110

Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Val Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Gly Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Leu Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320
```

```
Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

Pro Val Ser Leu Arg Lys Arg Ile Gly Ser His Leu Gly Glu Ser Ser
        515                 520                 525
```

```
Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Arg Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585
```

<210> 169
<211> 588
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 169

```
Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15

Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30

Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45

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

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

Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95

Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110
```

```
Ala Leu Leu Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125

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

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335
```

```
Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350

His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540
```

```
Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560


Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
                565                 570                 575


Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
            580                 585


<210>  170
<211>  588
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  170

Met Ala Arg Gly Leu Thr Asp Leu Glu Ile Asn Gln Ile Leu Glu Leu
1               5                   10                  15


Glu Asp Val Glu Asn Asp Val Ile Phe Asp Glu Ser Gly Asp Glu Ser
            20                  25                  30


Asp His Val Ser Ile Arg Val Glu Ser Asp Thr Glu Glu Val Glu Ile
        35                  40                  45


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


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


Thr Ile Trp Asn Arg Ala Pro Pro Asn Pro Arg Val Arg Thr Ser Ser
                85                  90                  95


Glu Asn Ile Val Thr Gly Thr Pro Gly Val Lys Arg Gln Ala Lys Asn
            100                 105                 110


Ala Leu Asp Glu Leu Asp Cys Phe His Leu Phe Val Asn Glu Ser Ile
        115                 120                 125
```

```
Leu Ser Val Ile Leu Glu His Thr Asn His Glu Ile Arg Ser Glu Arg
    130                 135                 140

Gln Gly Lys Asn Thr Ser Asn Glu Tyr Ala Tyr Ser Glu Thr Thr Leu
145                 150                 155                 160

Thr Glu Leu Arg Ala Phe Ile Gly Leu Leu Tyr Leu Ala Gly Leu Phe
                165                 170                 175

Lys Ser Asn Arg Gln Asn Leu Gln Asp Leu Trp Ala Ser Asp Gly Thr
            180                 185                 190

Gly Ile Glu Ile Phe Arg Met Thr Met Ser Arg Arg Arg Phe Ala Phe
        195                 200                 205

Ile Val Asn Cys Leu Arg Phe Asp Asp Ser Asp Thr Arg Glu Glu Arg
    210                 215                 220

Ala Ala Ile Asp Arg Leu Ala Pro Ile Arg Gln Ile Tyr Glu Glu Phe
225                 230                 235                 240

Val Lys Asn Cys Lys Asp Val Tyr Thr Pro Tyr Glu Asn Leu Thr Ile
                245                 250                 255

Asp Glu Glu Leu Val Ala Phe Arg Gly Arg Cys Lys Phe Arg Gln Tyr
            260                 265                 270

Leu Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Ile Ile Ala Leu Val
        275                 280                 285

Asp Ala Tyr Thr Tyr Tyr Ser Leu Asn Met Glu Ile Tyr Ala Gly Arg
    290                 295                 300

Gln Pro Asp Gly Pro Tyr Lys Val Ser Asn Lys Pro His Asp Val Val
305                 310                 315                 320

Asp Arg Ile Val Gln Pro Ile Ser Gln Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Tyr Pro Thr Tyr Ala His Leu Leu Lys Asn
            340                 345                 350
```

```
His Lys Leu Thr Ala Val Gly Thr Met Lys Ser Asn Lys Arg Cys Ile
        355                 360                 365

Pro Pro Lys Phe Arg Glu Arg Arg Glu Ile Asn Thr Ser Leu Phe Gly
    370                 375                 380

Phe Gln Asp Asp Phe Thr Ile Val Ser Tyr Ile Pro Lys Arg Asn Lys
385                 390                 395                 400

Asn Val Phe Met Leu Ser Ser Leu His His Asp Ser Glu Ile Asp Ser
                405                 410                 415

Glu Thr Gly Glu Gln Gln Lys Pro Ser Ile Ile Thr Phe Tyr Asn Lys
            420                 425                 430

Thr Lys Ser Gly Val Asp Asn Val Asp Lys Leu Ile Arg Thr Tyr Asp
        435                 440                 445

Val Ser Arg Asn Ser Arg Arg Trp Pro Leu Thr Ile Phe Phe Trp Ile
    450                 455                 460

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

Ser Asp Asn Thr Pro Thr Arg Arg Ala Phe Ile Lys Lys Leu Gly Met
                485                 490                 495

Ser Leu Ile Ala Pro His Gln Ala Glu Arg Lys Thr Asn Ser Lys Ile
            500                 505                 510

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

Ala Ser Pro Ala Lys Ile Pro Asn Val Gly Val Lys Lys Arg Cys Tyr
    530                 535                 540

Ile Cys Pro Val Lys Lys Asp Arg Lys Ser Lys Tyr Ile Cys Ile Ser
545                 550                 555                 560
```

Cys Thr Ser His Ile Cys Leu Glu His Ala Asn Phe Val Cys Glu Asn
565 570 575

Cys Arg Arg Asn Glu Glu Glu Asn Ser Asp Ser Ser
580 585

<210> 171
<211> 1767
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 171
atggctaggg gactgacgga tctggaaatc aaccagatcc tggaactcga ggatgtggag 60

aacgatgtca tcttcgacga gtccggcgat gaatccgacc atgtgtcgat ccgggtggag 120

agcgacaccg aagaggtcga gattccaact ttggaaccgc aacagggtag tagcgattcc 180

gaaaacgatc aacctctctc caacctggcc cggcgcagct tctacaaggg aaaggataac 240

accatctgga accgggctcc ccctaacccc cgcgtccgga ccagatcgga aaacatcgtg 300

accggcactc ctggagtgaa gagacaggcc aagaatgccc tcctcgagct cgactgcttc 360

cacttgtttg tgaacgaatc cattctgtcc gtcatcctcg agcacacgaa ccacaagatc 420

cgctcagagc gacagggaaa gaacacctcc aacgaatacg cttatagcga aaccaccttg 480

actgaactgc gggccgtgat cggacttctg tacctcgcgg gcctgttcaa gagcggacgg 540

cagaatctgc aagacctgtg ggcgtccgac ggtaccggta tcgagatatt cccgatgact 600

atgtcactgc ggcggttcgc cttcatcgtg aactgtctgc ggttcgacga ctccgatacc 660

cgcgaggaaa gggccgcaat cgacaggctg gccccgatta gacagatcta cgaagagttc 720

gtgaagaact gcaaagacgt gtacactcct tacgaaaacc tgaccatcga cgaagaactc 780

gtggcgttcc gcggacgctg caaattcaga cagtacctcc ctaacaagcc cgcgaaatac 840

gggatcaaga tcatcgccct ggtcgatgcg tacacgtact attcattgaa catggaaatc 900

tacgccggcg accagccgga cggcccatac aaagtgtcaa acaagcccca cgatgtggtg 960

gacaggattg tgcagccaat ctcgcaaact ggccggaacg tcaccatgga caattggttc 1020

acatcctacc ccacctacgc ccatcttctg aagaaccaca agctgaccgc cgtggggacc 1080

atgaagtcca acaagacttg catcccgcct aagtttcgcg agcgccgcga gatcaacact 1140

tccctttcg gattccaaga tgacttcact attgtgtcct acatcccgaa gcgcaacaag 1200

aacgtgttca tgcttagctc cctgcatcac gactcggaaa ttgacagcga aaccggggag 1260

cagcagaagc cttccattat cacttttac aacaagacca agagcggggt ggacaacgtc 1320

gacaagctga ttcggaccta cgacgtgtcc cggaactcca gacgctggcc gctgaccatc 1380

ttcttctgga ttctgaacac tgccggcatc aacgccaaga ttgtgcagat gctgaattcg 1440

tccgataaca cccctacccg gagagctttt atcaagaagc tcggaatgtc actgattgca 1500

ccgcatcagg ccgagagaaa gaccaactcc aagatccccg tgtccctgcg gaagcggatt 1560

ggttcccacc tgggagagtc gagcgccagc ccagcgaaga ttccgaacgt cggcgtcaag 1620

aagcgctgtt acatctgccc cgtgaagaag gaccggaagt cgaagtacat ctgcatttct 1680

tgtacctccc acatctgcct ggaacacgcc aatttcgtgt gcgagaactg caggcgcaac 1740

gaagaagaga actccgacag ctcgtga 1767

<210> 172
<211> 610
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 172

Met Asp Ile Ser Ser Asp Thr Pro Lys Pro Arg Thr Ser Ala Arg Lys
1 5 10 15

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

Trp Leu Glu Glu Glu Ser Asp Asp Gly Phe Ser Gly Ile Asp Asp Glu
35 40 45

Asp Gly Asp Pro Ser Phe Glu Pro Glu Ile Gln Arg Asp Glu Asp Asp
50 55 60

Ile Ile Ser Arg Glu Glu Asp Ser Glu Ser Ile Leu Glu Glu Gln Gln
65 70 75 80

```
Glu Pro Val Val Glu Val Glu Arg Gln Gln Ser Ser Asp Lys Ser Gln
                85                  90                  95

Glu His Tyr Thr Gly Lys Asn Gly Phe Ile Trp Ser Ala Gln Glu Gly
            100                 105                 110

Arg Arg Thr Ser Arg Val Ser Ala His Asn Ile Ile Arg Leu Pro Gly
        115                 120                 125

Arg Ile Ile Thr Lys Lys Phe Glu Gly Tyr Leu Glu Leu Trp Ser Lys
    130                 135                 140

Leu Ile Asp Pro Thr Met Leu Glu Ser Leu Val Arg Tyr Thr Asn Gln
145                 150                 155                 160

Lys Leu Ser Ser Tyr Arg Thr Lys Phe Lys Asn Asn Ser Met Ala Glu
                165                 170                 175

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

Tyr Tyr Ser Ser Val Phe Lys Cys Asn Asp Glu Asn Ile Asn Thr Ile
        195                 200                 205

Phe Ala Thr Asn Gly Thr Gly Arg Glu Ile Phe Arg Cys Val Met Ser
    210                 215                 220

Lys Leu Arg Phe Ser Cys Leu Ile Asn Cys Leu Arg Phe Asp Asp Ser
225                 230                 235                 240

Ile Thr Arg Gln Glu Arg Leu Lys Asp Asp Thr Leu Ala Pro Ile Ser
                245                 250                 255

Glu Ile Phe Asp Lys Phe Ile Ser Asn Ser Gln Ser Glu Tyr Thr Pro
            260                 265                 270

Gly Ala Tyr Leu Cys Ile Asp Glu Met Leu Val Pro Phe Arg Gly Arg
        275                 280                 285

Cys Lys Phe Ile Ile Tyr Met Pro Gln Lys Pro Ala Lys Tyr Gly Ile
    290                 295                 300
```

```
Lys Ile Leu Leu Leu Val Asp Ala Arg Thr Tyr Tyr Ile Tyr Asn Ala
305                 310                 315                 320

Tyr Ile Tyr His Gly Lys Tyr Ser Asp Gly Lys Gly Leu Thr Asp Gln
                325                 330                 335

Glu Lys Lys Met Ala Val Pro Thr Gln Ser Val Leu Arg Leu Ala Lys
            340                 345                 350

Val Val Glu Asn Ser Asn Arg Asn Ile Thr Ala Asp Asn Trp Phe Ser
        355                 360                 365

Ser Ile Pro Leu Val Glu Ile Leu Leu Lys Arg Gly Leu Thr Tyr Leu
    370                 375                 380

Gly Thr Leu Lys Lys Asn Lys Ala Glu Ile Pro Pro Cys Phe Leu Pro
385                 390                 395                 400

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

Tyr Thr Leu Leu Ser Tyr Val Pro Lys Pro Asn Lys Ala Val Leu Leu
            420                 425                 430

Ile Ser Ser Ser His His Ile Gln Glu Ile Asp Lys Asp Thr Gly Lys
        435                 440                 445

Pro Ile Met Ile Ala Asp Tyr Asn Ser Thr Lys Gly Gly Val Asp Glu
    450                 455                 460

Val Asp Lys Lys Cys Ser Ile Tyr Cys Cys Ser Arg Lys Thr Arg Arg
465                 470                 475                 480

Trp Pro Met Ala Ile Phe Gln Arg Ile Leu Asp Met Ala Gly Ile Asn
                485                 490                 495

Ser Phe Val Leu Tyr Gln Ser Cys Asp Asp Ser Asp Gly Lys Met Arg
            500                 505                 510
```

```
Arg Gly Thr Phe Leu Leu Asn Met Ala Arg Asp Leu Val Leu Asp His
        515                 520                 525

Met Lys Asn Arg Val Tyr Asn Glu Arg Leu Pro Arg Glu Leu Arg Met
    530                 535                 540

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

Ala Arg Ser Val Pro Pro Ser Gly Lys Lys Leu Cys Tyr Ile Cys Pro
                565                 570                 575

Thr Lys Ile Lys Arg Gln Thr Lys Tyr Arg Cys Cys Asp Cys Ser Lys
            580                 585                 590

Pro Ile Cys Leu Gln Cys Ser Lys Pro Leu Cys Asp Asn Cys Gln Thr
        595                 600                 605

Lys Leu
    610
```

<210> 173
<211> 578
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 173

```
Met Pro Arg Gly Leu Lys Asp Ser Glu Ile Ile Gln Phe Leu Glu Glu
1               5                   10                  15

Glu Glu Glu Ala Ile Asp Ser Ala Ser Glu Asn Glu Gln Asp His Asp
            20                  25                  30

Val Ile Val Ser Asp His Val Thr Glu Ser Glu Gln Ser Glu Asn Glu
        35                  40                  45

Ser Asn Asp Gln Trp Arg Ser Glu Asp Glu Val Pro Leu Gln Asn Leu
    50                  55                  60
```

```
Ala Ser Ser Ser Gln Ser His Asp Gln Ser Phe Tyr Leu Gly Lys Asn
65                  70                  75                  80

Arg Leu Thr Lys Trp Tyr Lys His Pro Pro Arg Ser Met Val Arg Thr
                85                  90                  95

Gln Arg Ser Asn Ile Val Thr Glu Thr Ala Gly Pro Lys Gly Pro Ala
            100                 105                 110

Arg Asp Ile Met Thr Leu Ser Asp Ala Phe Leu Ser Ile Phe Ser Arg
        115                 120                 125

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

Ile Gln Asn Asn Phe Gln Arg Glu Arg Asp Cys Lys Val Val Ser Tyr
145                 150                 155                 160

Glu Glu Leu Leu Ala Phe Phe Gly Leu Leu Tyr Met Ser Gly Val Leu
                165                 170                 175

Arg Ser Ser His Leu Asn Tyr Gln Asp Leu Trp Ala Ala Asp Gly Thr
            180                 185                 190

Gly Ile Glu Phe Phe Ser Asn Thr Met Ser Cys Lys Arg Phe Leu Phe
        195                 200                 205

Ile Leu Arg Ser Leu Arg Phe Asp Ser Arg Thr Thr Arg Glu Val Arg
    210                 215                 220

Gln Ser Leu Asp Lys Leu Ala Ala Ile Arg Asp Phe Cys Asn Leu Met
225                 230                 235                 240

Asn Asp Asn Phe Gln Lys Cys Tyr Ser Met Ser Glu Asn Val Thr Ile
                245                 250                 255

Asp Glu Gln Leu Pro Ala Phe Arg Gly Arg Phe Cys Gly Val Val Tyr
            260                 265                 270

Met Pro Ser Lys Pro Thr Lys Tyr Gly Ile Lys His Phe Ala Leu Val
        275                 280                 285
```

```
Asp Ser Ala Thr Tyr Tyr Leu Gln Arg Phe Glu Val Tyr Val Gly Val
    290                 295                 300

Gln Pro Asp Gly Pro Phe Lys Leu Pro Ser Asp Thr Lys Ser Leu Val
305                 310                 315                 320

Lys Arg Leu Ile Glu Pro Ile Ser Gly Thr Gly Arg Asn Val Thr Met
                325                 330                 335

Asp Asn Trp Phe Thr Ser Val Pro Leu Ala Lys Ser Leu Leu Asp Glu
            340                 345                 350

His Thr Leu Thr Met Val Gly Thr Leu Arg Lys Asn Lys Pro Glu Ile
        355                 360                 365

Pro Lys Cys Phe Leu Pro Glu Lys Lys Arg Glu Thr Thr Ser Ser Ile
    370                 375                 380

Phe Gly Phe Gln Lys Asp Met Thr Leu Cys Ser Tyr Val Pro Lys Pro
385                 390                 395                 400

Arg Lys Ala Val Met Leu Leu Ser Thr Met His His Asp Asp Asn Val
                405                 410                 415

Glu Gly Glu Lys Arg Lys Pro Glu Ile Ile His Phe Tyr Asn Lys Thr
            420                 425                 430

Lys Gly Gly Val Asp Thr Asn Asp Gln Met Cys Ala Thr Tyr Asn Val
        435                 440                 445

Gly Arg Arg Thr Lys Arg Trp Pro Met Val Ile Phe Phe His Ile Phe
    450                 455                 460

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

Ser Asn Ile Ser Arg Arg Leu Phe Leu Lys Leu Leu Ala Val Asp Leu
                485                 490                 495
```

```
Val Lys Pro His Gln Met Ser Arg Ala Ser Ile Pro Thr Leu Pro Arg
            500                 505                 510

Pro Leu Gln Lys Arg Leu Lys Arg Gln His Glu Ile Gln Asp Gln Val
        515                 520                 525

Ser Ile Pro Glu Ala Gly Arg Ser Gln Ser Tyr Lys Arg Cys His Val
    530                 535                 540

Cys Pro Arg Ser Lys Asp Arg Lys Thr Lys Thr Glu Cys Phe Lys Cys
545                 550                 555                 560

His Lys His Val Cys Asn Asp His Met Asn Ile Val Cys Lys Asn Cys
                565                 570                 575

Asn Asp
```

<210> 174
<211> 563
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 174

```
Met Ala Ser Ile Leu Thr Asp Glu Glu Ile Leu Ser Met Ile Asn Asn
1               5                   10                  15

Gly Asp Phe Leu Leu Ser Asp Glu Asp Phe Gly Leu Asn Ser Gly Ser
            20                  25                  30

Asp Ser Leu Gly Glu Gly Asp Ser Ala Asp Asp Asp Cys Asp Gln Asn
        35                  40                  45

Asn Ile Val Glu Gln Asn Ile Ala Asn Gln Ser Pro Ala Ser Leu Thr
    50                  55                  60

Glu Thr Asp Leu Ala Ser Pro Gln Ile Ser Arg Glu Asn Asn Tyr Asn
65                  70                  75                  80
```

```
Trp Ser Thr Cys Arg Pro Gln Val Ile Asp Ile Pro Phe Ser Glu Thr
                85                  90                  95

Pro Gly Leu Lys Ile Phe Pro Lys Gly Asn Asp Pro Ile Asp Tyr Phe
            100                 105                 110

Asn Leu Phe Val Thr Asn Thr Phe Trp Glu Phe Leu Val Glu Glu Ala
        115                 120                 125

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

Arg Ile Ser Thr Trp Lys Asn Thr Asp Val Val Glu Met Lys Lys Phe
145                 150                 155                 160

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

Asp Tyr Trp Lys Thr Asn Glu Leu Phe Asn Phe His Ile Phe Arg Ser
            180                 185                 190

Thr Met Ser Arg Asn Arg Phe Met Leu Leu Leu Arg Val Leu His Phe
        195                 200                 205

Cys Lys Asn Pro Gly Gln Asn Asp Asn Pro Thr Ser Arg Leu His Lys
    210                 215                 220

Ile Asp Lys Met Thr Asn Tyr Phe Asn Lys Thr Met Glu Glu Leu Tyr
225                 230                 235                 240

Gln Pro Ser Lys Asn Leu Ser Ile Asp Glu Ser Met Val Leu Phe Arg
                245                 250                 255

Gly Arg Leu Met Phe Arg Gln Tyr Ile Lys Asn Lys Arg His Lys Tyr
            260                 265                 270

Gly Ile Lys Leu Tyr Met Met Thr Glu Ser Trp Gly Leu Val His Arg
        275                 280                 285

Val Leu Ile Tyr Ser Gly Glu Gly Thr Gly Thr Ser Glu Glu Leu Ser
    290                 295                 300
```

```
His Thr Glu Tyr Val Val Glu Lys Leu Met Glu Gly Tyr Tyr Tyr Lys
305                 310                 315                 320

Gly His Ser Ile Tyr Met Asp Asn Tyr Tyr Asn Ser Val Lys Leu Ala
                325                 330                 335

His Tyr Leu Leu Glu Lys Gln Thr Tyr Cys Thr Gly Thr Leu Arg Ala
            340                 345                 350

Asn Arg Lys Asn Asn Pro Lys Ala Ile Asn Asp Lys Lys Leu Lys Lys
        355                 360                 365

Gly Glu Thr Ile Cys Gln Tyr Thr Glu Lys Gly Val Gly Val Val Lys
    370                 375                 380

Trp Lys Asp Arg Arg Asp Val Ile Ala Ile Ser Ser Glu His Ser His
385                 390                 395                 400

Asp Leu Val Asn Ile Thr Asn Arg Lys Gly Ile Ile Lys Ser Lys Pro
                405                 410                 415

Leu Ser Ile Ile Lys Tyr Asn Glu Tyr Met Ser Gly Ile Asp Arg Gln
            420                 425                 430

Asp Gln Met Leu Ser Tyr Tyr Pro Cys Glu Arg Lys Thr Leu Arg Trp
        435                 440                 445

Tyr Lys Lys Leu Gly Ile His Phe Ile Gln Ile Leu Leu Leu Asn Ser
    450                 455                 460

Tyr Leu Leu Tyr Asn Lys Asn Val Lys Lys Ile Ser Phe Tyr Asp Tyr
465                 470                 475                 480

Arg Leu Lys Ile Ile Ser Thr Ile Leu Asn Ser Gly Glu Asn Asn Ile
                485                 490                 495

Thr Lys Arg Gln Pro Thr Asn Asn Asn Ala Leu His Phe Ser Lys Lys
            500                 505                 510
```

Val Pro Lys Asn Lys Asn Asn Lys Ile Met Tyr Lys Arg Cys Lys Leu
515 520 525

Cys Ser Ser Lys Gly Val Arg Lys Met Thr Ser Phe Tyr Cys Ser Met
530 535 540

Cys Glu Asp Glu Pro Gly Phe Cys Leu Asp Cys Phe Glu Glu Phe His
545 550 555 560

Arg Ser Ile

<210> 175
<211> 592
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 175

Met Ile Met Ser Asn Arg Lys Thr Val Arg Ala Thr Asp Pro Asn Phe
1 5 10 15

Glu Ser Gln Val Met Ala Trp Phe Glu Glu Ser Asn Glu Glu Leu Ser
20 25 30

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

Asn Asp Val Ile Glu Asn His His Thr Ser Glu Glu Glu Glu Glu Glu
50 55 60

Glu Glu Glu Glu Gly Glu Asp Phe Asp Lys Glu Asn Glu Glu Gln Pro
65 70 75 80

Asn Gln Asn Tyr Phe Tyr Gly Lys Asn Lys Ile Thr Arg Trp Asn Lys
85 90 95

Asn Cys Pro Val Asn Ser Arg Thr Arg Ser His Asn Ile Val Lys Ile
100 105 110

```
Arg Val Pro Gly Pro Gln Ser Ser Ala Lys Asn Cys Lys Thr Gln Leu
        115                 120                 125

Glu Thr Leu Arg Cys Phe Leu Asp Glu Glu Ile Ile Thr Leu Ile Val
    130                 135                 140

Lys Tyr Thr Asn Ile Tyr Ile Asn Glu Val Lys Asp Lys Tyr Ser Arg
145                 150                 155                 160

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

Gly Ile Leu Tyr Leu Ala Gly Leu Leu Gln Ser Gly Arg Gln His Ile
            180                 185                 190

Leu Gln Met Trp Asp Asn Ser Lys Gly Leu Gly Val Glu Ala Ile Tyr
        195                 200                 205

Leu Thr Met Gly Ile Asn Arg Phe Arg Phe Leu Met Arg Cys Leu Arg
    210                 215                 220

Phe Asp Asn Ile Ile Asp Arg Asn Glu Arg Lys Lys Thr Asp Asn Leu
225                 230                 235                 240

Ala Ala Ile Arg Lys Ile Phe Glu Met Phe Val Leu Lys Phe Lys Ser
                245                 250                 255

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

Phe Arg Gly Asn Cys Pro Phe Arg Thr Tyr Ile Pro Ser Lys Pro Ala
        275                 280                 285

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

Thr Cys Asn Leu Glu Ile Tyr Cys Gly Lys Gln Pro Ala Gly Pro His
305                 310                 315                 320

Ser Thr Ser Trp Lys Asn Tyr Asp Leu Val Met Arg Met Ile Ala His
                325                 330                 335
```

```
Ile Thr Gly Thr Gly Arg Asn Val Ser Met Asp Asn Trp Phe Thr Ser
            340                 345                 350

Val Pro Leu Ala Val Asp Leu Leu Gln Met Lys Thr Thr Ile Ile Gly
        355                 360                 365

Thr Leu Arg Lys Asn Lys Pro Asp Ile Pro Pro Gln Phe Ile Asn Ala
    370                 375                 380

Thr His Arg Glu Val Tyr Ser Ser Leu Phe Gly Phe His Lys Met Cys
385                 390                 395                 400

Thr Leu Val Ser Tyr Val Pro Lys Arg Lys Lys Val Val Leu Leu Leu
                405                 410                 415

Ser Thr Met His His Asp Cys Ala Ile Asp Asn Asp Thr Gly Asp Leu
            420                 425                 430

Lys Lys Pro Glu Ile Ile Thr Asp Tyr Asn Asn Thr Asn Tyr Gly Val
        435                 440                 445

Asp Met Leu Asp Lys Met Cys Ser His Tyr Asp Val Ser Arg Asn Ser
    450                 455                 460

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

Ile Asn Gly Met Cys Ile Tyr Lys Thr Lys Ser Ile Asn Lys Ile Asp
                485                 490                 495

Arg Lys Ser Asp Leu Gln Thr Ile Gly Tyr Glu Leu Ile Thr Pro Leu
            500                 505                 510

Leu Arg Lys Arg Leu Glu Ser Asp Asn Ile Ala Thr Asn Ile Lys Glu
        515                 520                 525

His Ile Arg Lys Leu Leu Asn Ile Glu Pro Glu Ile Leu Ala Glu Ile
    530                 535                 540
```

```
Gln Pro Asn Thr Ser Thr Val Gly Lys Cys Phe Tyr Cys Gly Arg Gln
545                 550                 555                 560


Lys Asn Lys Ser Thr Arg Lys His Cys Ser Lys Cys Gly Lys Trp Val
                565                 570                 575


Cys Pro Ala His Leu Arg His Ile Cys Pro Lys Cys Asn Glu Glu Asp
            580                 585                 590
```

<210> 176
<211> 565
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 176

```
Met Ala Gly Gln Tyr Asn Leu Arg Pro Ile Ser Ala Leu Ala Glu Thr
1               5                   10                  15


Leu Arg Ala Thr Glu Arg Glu Gln Ala Ser Asp Ile Pro Ser Glu Glu
            20                  25                  30


Glu Asp His Ala Val Glu Phe Ser Gly Ser Glu Ser Glu Glu Asp Ala
        35                  40                  45


Asp Glu Ile Ser Glu Gln Pro Asp Glu Gly Asn Ser Arg Lys Arg Ser
    50                  55                  60


Asn Pro Ser Ile Ile His Gly Lys Asp Gly His Arg Trp Tyr Thr Thr
65                  70                  75                  80


Pro Gln Gln Arg Ser Gln Gly Arg Gln Asn Thr Pro Val Ser Tyr Leu
                85                  90                  95


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


Trp Ser Leu Leu Phe Pro Asp Ser Leu Ile Glu Lys Ile Val Arg His
        115                 120                 125
```

```
Thr Asn Glu Glu Ile Arg Arg Tyr Arg Asp Ser Leu Glu Ile Asp Asp
    130                 135                 140

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

Tyr Ile Gly Leu Leu Tyr Phe Ser Gly Leu Gln Lys Thr Ser His Thr
                165                 170                 175

Asn Leu Glu Asp Leu Trp Asn Pro Glu Tyr Gly Ser Ile Met Tyr Arg
            180                 185                 190

Ser Thr Met Ser Cys Asn Arg Phe Ser Val Ile Ser Arg Asn Leu Arg
        195                 200                 205

Phe Asp Asp Lys Thr Thr Arg Ala Glu Arg Arg Glu Thr Asp Lys Phe
    210                 215                 220

Ala Pro Ile Arg Glu Leu Trp Glu Gln Phe Ile Ser Asn Cys Thr Lys
225                 230                 235                 240

Tyr Tyr Asn Pro Thr Ser Tyr Cys Thr Ile Asp Glu Gln Leu Val Ser
                245                 250                 255

Phe Arg Gly Arg Cys Pro Phe Lys Val Tyr Asn Gly Ala Lys Pro Asp
            260                 265                 270

Lys Tyr Gly Ile Lys Ile Val Met Leu Asn Asp Ser Arg Thr Phe Tyr
        275                 280                 285

Met Phe Ser Ala Glu Pro Tyr Val Gly Arg Val Thr Thr Glu Lys Gly
    290                 295                 300

Glu Ser Val Pro Ser Tyr Tyr Ile Arg Lys Leu Ser Gln Pro Leu His
305                 310                 315                 320

Gly Thr Lys Arg Asn Ile Thr Cys Asp Asn Trp Phe Ser Ser Ile Pro
                325                 330                 335

Ile Phe Glu Lys Met Leu Thr Glu His Ser Ile Thr Met Val Gly Thr
            340                 345                 350
```

```
Leu Arg Lys Asn Lys Arg Glu Ile Pro Gly His Phe Arg Ser Ala Gly
        355                 360                 365

Pro Val Ser Ser Ser Lys Phe Ala Phe Asp Gly Arg Met Thr Leu Met
    370                 375                 380

Ala His Thr Pro Lys Gln Asn Lys Ile Val Ile Leu Leu Ser Thr Phe
385                 390                 395                 400

His Asp Cys Ala Thr Ile Asn Gln Glu Thr Gln Lys Met Glu Ile Ile
                405                 410                 415

His Phe Tyr Asn Thr Thr Lys Gly Gly Thr Asp Ser Phe Asp Gln Met
            420                 425                 430

Cys His Glu Tyr Ser Thr Ala Arg Lys Thr Leu Arg Trp Pro Met Arg
        435                 440                 445

Ile Trp Leu Ala Met Leu Asp Gln Gly Gly Ile Asn Ala Leu Ile Leu
    450                 455                 460

Tyr Asn Ser Asn Ala Asn Leu Glu Ala Phe Asn Arg Lys Thr Phe Leu
465                 470                 475                 480

Lys Asn Leu Ile Lys Ala Leu Val Glu Pro His Leu Arg Ala Arg Leu
                485                 490                 495

Gln Leu Pro Asn Phe Arg Arg Glu Leu Arg Phe Asn Ile His Thr Ile
            500                 505                 510

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

Arg Cys Gly Leu Cys Pro Arg Ala Gln Asp Arg Lys Val Gln Met Tyr
    530                 535                 540

Cys Glu Met Cys His Arg Thr Val Cys Glu Asp His Arg Val Ile Phe
545                 550                 555                 560
```

Cys Cys Asp Cys Ala
565

<210> 177
<211> 587
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 177

Met Glu Asp Ala Lys Lys Arg Lys Leu Thr Ser Asp Asp Pro Ser Val
1 5 10 15

Trp Leu Lys Trp Phe Glu Glu Met Ser Glu Glu Glu Asn Glu Lys Asp
20 25 30

Glu Glu Ser Cys Ser Glu Ile Glu Ala Asp Ile Leu Glu Glu Ser Pro
35 40 45

His Asp Thr Ala Ser Glu Gln Glu Ala Gly Asp Leu Glu Ser Asp Asn
50 55 60

Asp Cys Asp Asp Ile Ser Asp Ser Glu Ser Glu Asn Phe Tyr Ile Gly
65 70 75 80

Lys Asp Lys Phe Thr Lys Trp Cys Lys Val Lys Pro Arg Gln Asn Val
85 90 95

Arg Thr Arg Ser Cys Asn Ile Ile Ile His Leu Pro Gly Pro Arg Arg
100 105 110

Glu Ala His Gly Val Gln Lys Glu Ile Asp Ile Leu Lys Phe Phe Leu
115 120 125

Asp Asp Asn Val Phe Arg Met Ile Val Ala Ser Thr Asn Ile Lys Ile
130 135 140

Gly Val Val Arg Glu Lys Tyr Cys Arg Ala Arg Asp Ala Ala Asp Thr
145 150 155 160

```
Asp Val Thr Glu Ile Cys Ala Phe Ile Gly Leu Leu Tyr Leu Ile Gly
                165                 170                 175

Ser Leu Arg Cys Ser Arg Lys Asn Met His Asp Leu Trp Asp Asn Ser
            180                 185                 190

Arg Gly Asn Gly Leu Glu Ser Cys Tyr Leu Thr Met Ser Glu Asn Arg
        195                 200                 205

Phe Lys Phe Leu Leu Arg Cys Leu Arg Phe Asp Asp Ile Arg Asp Arg
    210                 215                 220

His Met Arg Lys Glu Val Asp Lys Leu Cys Ser Ile Arg Asp Leu His
225                 230                 235                 240

Glu Leu Leu Ile Asn Asn Phe Gln Arg Tyr Phe Cys Ala Ser Glu Tyr
                245                 250                 255

Leu Thr Val Asp Glu Gln Leu Leu Ala Phe Arg Gly Asn Cys Ser Phe
            260                 265                 270

Arg Gln Tyr Ile Pro Ser Lys Pro Ala Lys Tyr Gly Leu Lys Ile Phe
        275                 280                 285

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

Val Gly Lys Gln Pro Glu Gly Pro Tyr Gln Val Gly Asn Ser Gly Glu
305                 310                 315                 320

Glu Ile Val Leu Arg Leu Cys Asn Pro Val Glu Gly Thr Asn Arg Asn
                325                 330                 335

Ile Thr Ala Asp Asn Trp Phe Thr Ser Val Thr Val Ser Glu Arg Leu
            340                 345                 350

Leu Leu Glu Lys Lys Leu Thr Tyr Val Gly Thr Met Arg Lys Asn Lys
        355                 360                 365

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

```
Ser Ser Ile Phe Gly Phe Gly Lys Asn Ser Thr Leu Val Ser Tyr Cys
385                 390                 395                 400

Leu Lys Lys Gly Lys Ser Val Ile Leu Leu Ser Ser Met His Phe Asp
                405                 410                 415

Asp Thr Ile Asp Val Ser Thr Gly Asp His Lys Lys Pro Glu Ile Val
            420                 425                 430

Thr Phe Tyr Asn Met Thr Lys Val Gly Val Asp Leu Val Asp Gln Leu
        435                 440                 445

Cys Gln Lys Tyr Asp Val Ser Arg Asn Thr Arg Arg Trp Pro Leu Val
    450                 455                 460

Met Phe Tyr Asn Leu Leu Asn Ile Ser Ala Ile Asn Ala Phe Val Ile
465                 470                 475                 480

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

Leu Gln Asn Ile Ser Trp Glu Leu Ile Lys Pro Gln Ile Glu Arg Arg
            500                 505                 510

Thr Ala Val Leu Thr Ile Pro Lys Glu Ile Arg Arg Arg Ala Arg Val
        515                 520                 525

Leu Leu Gly Ile Glu Glu Ser Thr Val Pro Gln Lys Arg Pro Gly Thr
    530                 535                 540

Arg Gly Arg Cys Leu Pro Cys Gly Arg Gln Arg Asn Lys Thr Thr Arg
545                 550                 555                 560

Arg Trp Cys Cys Lys Cys Gln Ile Trp Ala Cys Gly Glu His Leu Thr
                565                 570                 575

Asp Ile Cys Leu Gln Cys Leu Glu Asn Thr Asn
            580                 585
```

<210> 178
<211> 564
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 178

```
Met Thr Arg Tyr Met Asn Tyr Asp Glu Glu Asn Glu Tyr Phe Arg His
1               5                  10                  15


Leu Ile Glu Thr Val Ser Ser Asp Asp Glu Ala Ile Ser Asp Glu Ser
            20                  25                  30


Val Ala Ser Glu Asp Asp Glu Tyr Cys Ser Asn His Asp Ser Ser Ser
        35                  40                  45


Glu Ile Glu Thr Glu Thr Glu Asp Glu Ser Ser Leu Ser Ala Thr Asp
    50                  55                  60


Phe Tyr Ile Gly Lys Asp Lys Val Thr Lys Trp Leu Lys Lys Lys Tyr
65                  70                  75                  80


Ser Gln Ser Val Arg Lys Pro Ala Arg Asn Ile Ile Ser Lys Leu Pro
                85                  90                  95


Gly Asn Thr Ala Tyr Ser Lys His Val Ala Ser Pro Val Asp Ala Trp
            100                 105                 110


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


Asn Ile Tyr Ile Glu Ser Ile Gln Glu Arg Phe Thr Arg Glu Arg Asp
    130                 135                 140


Ala Arg Lys Thr Asp Glu Thr Glu Ile Lys Ala Phe Ile Gly Leu Leu
145                 150                 155                 160


Tyr Leu Cys Gly Thr His Lys Ser Ser His Thr Asn Leu Lys Asp Leu
                165                 170                 175
```

```
Tyr Ala Thr Asp Gly Thr Gly Ile Asp Ile Phe Pro Lys Thr Met Ser
            180                 185                 190

Arg Thr Arg Phe Leu Phe Leu Met Arg Cys Leu Arg Phe Asp Asn Ile
        195                 200                 205

Asn Asp Arg Gln Ser Arg Arg Glu Ile Asp Lys Leu Ala Pro Ile Arg
    210                 215                 220

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

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

Cys Gly Phe Arg Gln Tyr Met Pro Lys Lys Pro Ala Lys Tyr Gly Ile
            260                 265                 270

Lys Ile Phe Ala Leu Val Asp Ser Arg Val Phe Tyr Thr Trp Asn Met
        275                 280                 285

Glu Ile Tyr Ala Gly Gln Gln Pro Asp Gly Pro Phe Lys Ile Asp Cys
    290                 295                 300

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

Gly Arg Asn Leu Thr Thr Asp Asn Trp Tyr Thr Gly Tyr Glu Leu Ala
                325                 330                 335

Gln Glu Leu Leu Lys Lys Lys Ile Thr Ile Val Gly Thr Leu Arg Gln
            340                 345                 350

Asn Lys Arg Glu Ile Pro Pro Gln Phe Leu Val Lys Lys Glu Leu Tyr
        355                 360                 365

Ser Ser Ile Phe Gly Phe Gln Lys Glu Thr Thr Met Val Ser Tyr Ser
    370                 375                 380

Ala Lys Lys Asn Lys Asn Val Val Met Leu Ser Thr Met His Thr Asp
385                 390                 395                 400
```

```
Asp Lys Ile Asp Glu Thr Thr Met Glu Leu Lys Lys Pro Asp Ile Ile
                405                 410                 415

Thr Phe Tyr Asn Leu Thr Lys Gly Ala Val Asp Val Val Asp Glu Met
            420                 425                 430

Ala Ala Ala Tyr Thr Thr Ala Arg Ile Ser Asn Arg Trp Pro Met Val
        435                 440                 445

Ile Leu Phe Ser Met Leu Asn Val Ala Ala Ile Asn Ala Arg Val Leu
    450                 455                 460

Leu Met Ser Thr Lys Asn Pro Pro Thr Gln Phe Arg Asn Arg Arg Phe
465                 470                 475                 480

Phe Leu Lys Thr Leu Gly Leu Val Leu Ser Glu Gln His Arg Lys Arg
                485                 490                 495

Lys Pro Leu Arg Lys Thr Thr Lys Pro Ser Thr Glu Glu Leu Glu Ile
            500                 505                 510

Thr Asn Ser Glu Pro Pro Ala Lys Lys Ile Lys Glu Thr Tyr Lys Arg
        515                 520                 525

Cys Ala Phe Cys Pro Cys Asn Lys Asp Arg Lys Ser Arg Phe Ile Cys
    530                 535                 540

Gln Lys Cys Glu Lys Ser Leu Cys Val Glu His Gln Tyr Val Ile Cys
545                 550                 555                 560

Gln Asn Cys Leu
```

<210> 179
<211> 628
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 179

```
Met Asp Leu Arg Lys Gln Asp Glu Lys Ile Arg Gln Trp Leu Glu Gln
1               5                  10                  15

Asp Ile Glu Glu Asp Ser Lys Gly Glu Ser Asp Asn Ser Ser Ser Glu
            20                  25                  30

Thr Glu Asp Ile Val Glu Met Glu Val His Lys Asn Thr Ser Ser Glu
        35                  40                  45

Ser Glu Val Ser Ser Glu Ser Asp Tyr Glu Pro Val Cys Pro Ser Lys
    50                  55                  60

Arg Gln Arg Thr Gln Ile Ile Glu Ser Glu Glu Ser Asp Asn Ser Glu
65                  70                  75                  80

Ser Ile Arg Pro Ser Arg Arg Gln Thr Ser Arg Val Ile Asp Ser Asp
                85                  90                  95

Glu Thr Asp Glu Asp Val Met Ser Ser Thr Pro Gln Asn Ile Pro Arg
            100                 105                 110

Asn Pro Asn Val Ile Gln Pro Ser Ser Arg Phe Leu Tyr Gly Lys Asn
        115                 120                 125

Lys His Lys Trp Ser Ser Ala Ala Lys Pro Ser Ser Val Arg Thr Ser
    130                 135                 140

Arg Arg Asn Ile Ile His Phe Ile Pro Gly Pro Lys Glu Arg Ala Arg
145                 150                 155                 160

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

Met Leu Gln Gln Val Val Thr Phe Thr Asn Ala Glu Met Leu Ile Arg
            180                 185                 190

Lys Asn Lys Tyr Lys Thr Glu Thr Phe Thr Val Ser Pro Thr Asn Leu
        195                 200                 205
```

```
Glu Glu Ile Arg Ala Leu Leu Gly Leu Leu Phe Asn Ala Ala Ala Met
    210                 215                 220

Lys Ser Asn His Leu Pro Thr Arg Met Leu Phe Asn Thr His Arg Ser
225                 230                 235                 240

Gly Thr Ile Phe Lys Ala Cys Met Ser Ala Glu Arg Leu Asn Phe Leu
                245                 250                 255

Ile Lys Cys Leu Arg Phe Asp Asp Lys Leu Thr Arg Asn Val Arg Gln
            260                 265                 270

Arg Asp Asp Arg Phe Ala Pro Ile Arg Asp Leu Trp Gln Ala Leu Ile
        275                 280                 285

Ser Asn Phe Gln Lys Trp Tyr Thr Pro Gly Ser Tyr Ile Thr Val Asp
    290                 295                 300

Glu Gln Leu Val Gly Phe Arg Gly Arg Cys Ser Phe Arg Met Tyr Ile
305                 310                 315                 320

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

Val Asn Ser Lys Tyr Ile Val Asn Ala Ile Pro Tyr Leu Gly Lys Gly
            340                 345                 350

Thr Asp Pro Gln Asn Gln Pro Leu Ala Thr Phe Phe Ile Lys Glu Ile
        355                 360                 365

Thr Ser Thr Leu His Gly Thr Asn Arg Asn Ile Thr Met Asp Asn Trp
    370                 375                 380

Phe Thr Ser Val Pro Leu Ala Asn Glu Leu Leu Met Ala Pro Tyr Asn
385                 390                 395                 400

Leu Thr Leu Val Gly Thr Leu Arg Ser Asn Lys Arg Glu Ile Pro Glu
                405                 410                 415

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

```
Tyr Asp Gly Asp Lys Thr Leu Val Ser Tyr Lys Ala Lys Ser Asn Lys
        435                 440                 445

Val Val Phe Ile Leu Ser Thr Ile His Asp Gln Pro Asp Ile Asn Gln
    450                 455                 460

Glu Thr Gly Lys Pro Glu Met Ile His Phe Tyr Asn Ser Thr Lys Gly
465                 470                 475                 480

Ala Val Asp Thr Val Asp Gln Met Cys Ser Ser Ile Ser Thr Asn Arg
                485                 490                 495

Lys Thr Gln Arg Trp Pro Leu Cys Val Phe Tyr Asn Met Leu Asn Leu
            500                 505                 510

Ser Ile Ile Asn Ala Tyr Val Val Tyr Val Tyr Asn Asn Val Arg Asn
        515                 520                 525

Asn Lys Lys Pro Met Ser Arg Arg Asp Phe Val Ile Lys Leu Gly Asp
    530                 535                 540

Gln Leu Met Glu Pro Trp Leu Arg Gln Arg Leu Gln Thr Val Thr Leu
545                 550                 555                 560

Arg Arg Asp Ile Lys Val Met Ile Gln Asp Ile Leu Gly Glu Ser Ser
                565                 570                 575

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

Tyr Leu Cys Pro Ser Lys Ala Arg Arg Met Thr Lys His Arg Cys Ile
        595                 600                 605

Lys Cys Lys Gln Ala Ile Cys Gly Pro His Asn Ile Asp Ile Cys Ser
    610                 615                 620

Arg Cys Ile Glu
625
```

<210> 180
<211> 599
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 180

Met Ala Ser Arg Gln His Leu Tyr Gln Asp Glu Ile Ala Ala Ile Leu
1 5 10 15

Glu Asn Glu Asp Asp Tyr Ser Pro His Asp Thr Asp Ser Glu Met Glu
20 25 30

Asp Cys Val Thr Gln Asp Asp Val Arg Ser Asp Val Glu Asp Glu Met
35 40 45

Val Asp Asn Ile Gly Asn Gly Thr Ser Pro Ala Ser Arg His Glu Asp
50 55 60

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

Leu Ser Ser His Arg Ile Ile Ile Leu Pro Gln Arg Ser Ile Arg Glu
85 90 95

Lys Asn Asn His Ile Trp Ser Thr Thr Lys Gly Gln Ser Ser Gly Arg
100 105 110

Thr Ala Ala Ile Asn Ile Val Arg Thr Asn Arg Gly Pro Thr Arg Met
115 120 125

Cys Arg Asn Ile Val Asp Pro Leu Leu Cys Phe Gln Leu Phe Ile Lys
130 135 140

Glu Glu Ile Val Glu Glu Ile Val Lys Trp Thr Asn Val Glu Met Val
145 150 155 160

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

```
Asn Glu Met Glu Ile Trp Ala Ile Ile Ser Met Leu Thr Leu Ser Ala
            180                 185                 190

Val Met Lys Asp Asn His Leu Ser Thr Asp Glu Leu Phe Asn Val Ser
        195                 200                 205

Tyr Gly Thr Arg Tyr Val Ser Val Met Ser Arg Glu Arg Phe Glu Phe
    210                 215                 220

Leu Leu Arg Leu Leu Arg Met Gly Asp Lys Leu Leu Arg Pro Asn Leu
225                 230                 235                 240

Arg Gln Glu Asp Ala Phe Thr Pro Val Arg Lys Ile Trp Glu Ile Phe
                245                 250                 255

Ile Asn Gln Cys Arg Leu Asn Tyr Val Pro Gly Thr Asn Leu Thr Val
            260                 265                 270

Asp Glu Gln Leu Leu Gly Phe Arg Gly Arg Cys Pro Phe Arg Met Tyr
        275                 280                 285

Ile Pro Asn Lys Pro Asp Lys Tyr Gly Ile Lys Phe Pro Met Val Cys
    290                 295                 300

Asp Ala Ala Thr Lys Tyr Met Val Asp Ala Ile Pro Tyr Leu Gly Lys
305                 310                 315                 320

Ser Thr Lys Thr Gln Gly Leu Pro Leu Gly Glu Phe Tyr Val Lys Glu
                325                 330                 335

Leu Thr Gln Thr Val His Gly Thr Asn Arg Asn Val Thr Cys Asp Asn
            340                 345                 350

Trp Phe Thr Ser Val Pro Leu Ala Lys Ser Leu Leu Asn Ser Pro Tyr
        355                 360                 365

Asn Leu Thr Leu Val Gly Thr Ile Arg Ser Asn Lys Arg Glu Ile Pro
    370                 375                 380

Glu Glu Val Lys Asn Ser Arg Ser Arg Gln Val Gly Ser Ser Met Phe
385                 390                 395                 400
```

```
Cys Phe Asp Gly Pro Leu Thr Leu Val Ser Tyr Lys Pro Lys Pro Ser
                405                 410                 415

Lys Met Val Phe Leu Leu Ser Ser Cys Asn Glu Asp Ala Val Val Asn
            420                 425                 430

Gln Ser Asn Gly Lys Pro Asp Met Ile Leu Phe Tyr Asn Gln Thr Lys
        435                 440                 445

Gly Gly Val Asp Ser Phe Asp Gln Met Cys Ser Ser Met Ser Thr Asn
    450                 455                 460

Arg Lys Thr Asn Arg Trp Pro Met Ala Val Phe Tyr Gly Met Leu Asn
465                 470                 475                 480

Met Ala Phe Val Asn Ser Tyr Ile Ile Tyr Cys His Asn Met Leu Ala
                485                 490                 495

Lys Lys Glu Lys Pro Leu Ser Arg Lys Asp Phe Met Lys Lys Leu Ser
            500                 505                 510

Thr Asp Leu Thr Thr Pro Ser Met Gln Lys Arg Leu Glu Ala Pro Thr
        515                 520                 525

Leu Lys Arg Ser Leu Arg Asp Asn Ile Thr Asn Val Leu Lys Ile Val
    530                 535                 540

Pro Gln Ala Ala Ile Asp Thr Ser Phe Asp Glu Pro Glu Pro Lys Lys
545                 550                 555                 560

Arg Arg Tyr Cys Gly Phe Cys Ser Tyr Lys Lys Lys Arg Met Thr Lys
                565                 570                 575

Thr Gln Cys Phe Lys Cys Lys Lys Pro Val Cys Gly Glu His Asn Ile
            580                 585                 590

Asp Val Cys Gln Asp Cys Ile
        595
```

<210> 181
<211> 567
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 181

Met Ala Arg Ser Thr Arg Glu Ala Lys Ser Cys Ala Leu Glu Arg Ile
1 5 10 15

Leu Gly Arg Glu Met Asn Met Pro Asp Ala Gln Ile Asp Leu Glu Glu
20 25 30

Ser Asp Lys Glu Glu His Leu Ser Asp Ile Glu Glu Ala Glu Leu Glu
35 40 45

Val Ala Leu Ser Asp Ala Ser Asp Gly Ser Ser Ser Ser Cys Ser Arg
50 55 60

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

Tyr Val Ser Pro Ser Gly Gln Ala Trp Ser Thr Asn Pro Pro Ala Arg
85 90 95

Cys Gly Gln Arg Pro Ala Gly Asn Ile Leu Arg Leu Arg Pro Gly Ile
100 105 110

Thr Gln Phe Ala Thr Ala Arg Leu His Asp Glu Glu Ser Ala Phe Lys
115 120 125

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

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

Val Glu Met Tyr Gly Tyr Ile Gly Leu Cys Phe Leu Arg Gly Val Phe
165 170 175

```
Lys Gly Asn Met Glu Ser Ile Glu Glu Leu Trp Ser Ala Asp Cys Gly
            180                 185                 190

Arg Lys Ile Phe Ala Glu Thr Met Ser Leu Ser Arg Phe Lys Ser Leu
        195                 200                 205

Leu Arg Phe Leu Arg Phe Asp Asn Arg Glu Thr Arg Ala Ala Arg Leu
    210                 215                 220

Gln Arg Asp Lys Leu Ala Ala Val Arg Leu Leu Leu Asp Gly Leu Val
225                 230                 235                 240

Ser Asn Ser Gln Arg Ser Tyr Val Pro Ser Gly Ala Val Thr Val Asp
                245                 250                 255

Glu Gln Leu Phe Pro Tyr Arg Gly Arg Cys Arg Tyr Ile Gln Tyr Met
            260                 265                 270

Pro Met Lys Pro Ala Lys Tyr Gly Leu Lys Phe Trp Cys Leu Asn Asp
        275                 280                 285

Ala Ala Asn Ala Tyr Cys Trp Asn Leu Gln Met Tyr Val Gly Arg Glu
    290                 295                 300

Glu Asp Arg Glu Val Ser Leu Gly Glu His Val Val Leu Arg Leu Ala
305                 310                 315                 320

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

Cys Ser Leu Ser Leu Ala Arg Arg Leu Gln Arg Trp Asn Leu Thr Leu
            340                 345                 350

Leu Gly Ser Met Arg Ser His Arg Arg Glu Val Pro Leu Gln Met Arg
        355                 360                 365

Ser Cys Arg Asn Arg Gln Leu His Ser Thr Glu Phe Val Tyr Thr Glu
    370                 375                 380

Glu Asp Lys Ile Gln Leu Ala Ala Tyr Lys Ala Lys Pro Asn Lys Leu
385                 390                 395                 400
```

```
Val Leu Ile Leu Ser Ser Gln His Ser Ser Pro Ala Val Ser Ala His
                405                 410                 415

Pro Ala Gln Lys Pro Gln Val Ile Leu Asp Tyr Asn Ala Thr Lys Gly
            420                 425                 430

Gly Thr Asp Leu Met Asp Gln Met Thr Ser Cys Tyr Ser Thr Lys Tyr
        435                 440                 445

Lys Ser Arg Arg Trp His Val Pro Val Phe Cys Asn Leu Leu Asn Ile
    450                 455                 460

Ala Gly Leu Asn Ser Phe Leu Leu His Gln Thr Val Phe Pro Asn Arg
465                 470                 475                 480

Phe Ala Asn Ala Pro His Arg Arg Arg Leu Tyr Leu Val Ala Leu Gly
                485                 490                 495

Arg Ala Leu Thr Gln Pro Leu Arg Tyr Gln Val Glu Ala Gly Arg Asn
            500                 505                 510

Pro Pro Ala Thr Val Pro Val His Gly Val Gln Arg Gly Arg Cys His
        515                 520                 525

Met Cys Gly Arg Ser Lys Asp Arg Lys Thr Arg Thr Arg Cys Thr His
    530                 535                 540

Cys Asp Arg Phe Cys Cys Ala Glu His Leu Gln Glu Ile Cys Leu Ala
545                 550                 555                 560

Cys Thr Gly Asp Met Pro Glu
                565
```

<210> 182
<211> 564
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 182

```
Met Ser Asp Ser Ser Asp Asp Asp Ile Val Ser Pro Gly Met Lys Arg
1               5                   10                  15

Lys Arg Val Asn Ile Phe Pro Ser Ser Ser Glu Glu Asn Asp Glu Ser
            20                  25                  30

Ile Glu Ser Asp Ser Glu Thr Asp Gln Tyr Asp Ser Asp Asp Ile Tyr
        35                  40                  45

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

Trp Lys Ser Thr Ser Gly Asn Arg Lys Pro Phe Asp Phe Ile Ala Asn
65                  70                  75                  80

Asn Gly Gln Gln Glu Ile Val Pro Gly Arg Phe Arg Ser Lys Cys Ser
                85                  90                  95

Ser Tyr Val Glu Lys Tyr Leu Asp Asp His Leu Ile Ser Ile Ile Val
            100                 105                 110

Lys Glu Thr Asn Leu Tyr Ala Asp Gln Phe Leu Gln Ser His Pro Asn
        115                 120                 125

Leu Lys Pro Arg Ser Arg Met Arg Lys Trp Tyr Ser Thr Thr Asn Asn
    130                 135                 140

Glu Val Arg Cys Phe Ile Ala Ile Leu Ile Leu Gln Gly Ile Val Lys
145                 150                 155                 160

Lys Pro Ala Leu Asp Met Tyr Phe Leu Lys Arg Glu Ile Ile Cys Ser
                165                 170                 175

Pro Phe Phe Gly Lys Ile Phe Ser Ala Asp Arg Phe Leu Leu Leu Cys
            180                 185                 190

Lys Phe Leu Tyr Phe Glu Asn Asn Ala Pro His Asn Asp Met Pro Ser
        195                 200                 205
```

```
Lys Lys Leu Cys Lys Ile Lys Thr Val Leu Glu Tyr Val Ile Asn Lys
    210                 215                 220

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

Leu Leu Met Trp Lys Gly Arg Leu Ser Trp Arg Gln Tyr Ile Pro Ser
                245                 250                 255

Lys Arg Ser Arg Phe Gly Ile Gln Phe Phe Val Leu Cys Glu Ser Glu
            260                 265                 270

Ser Gly Tyr Ile Trp Asn Phe Phe Ile Tyr Thr Gly Lys Glu Thr Tyr
        275                 280                 285

Cys Asp Ser Gln Tyr Ser Glu Phe Asn Ile Ser Ala Arg Ile Val Leu
    290                 295                 300

Gln Leu Cys Asp Glu Leu Phe Glu Arg Gly Tyr Arg Leu Tyr Leu Asp
305                 310                 315                 320

Asn Trp Tyr Thr Gly Val Pro Phe Ile Glu Lys Leu Cys Ala His Lys
                325                 330                 335

Thr Asp Val Val Gly Thr Ile Arg Lys Asn Arg Ile Gly Ile Cys Glu
            340                 345                 350

Glu Val Arg Glu Thr Arg Ile Lys Lys Gly Glu Tyr Ile Ala Arg Phe
        355                 360                 365

Lys Asn Lys Ile Met Leu Leu Lys Trp Arg Asp Lys Arg Glu Val Tyr
    370                 375                 380

Leu Val Ser Thr Val His Asn Asp Asn Ile Val Glu Met Gln Lys Arg
385                 390                 395                 400

Asn Val Ile Lys Lys Val Pro Glu Val Val Phe Asp Tyr Asn Asn Lys
                405                 410                 415

Met Gly Gly Val Asp Met Ser Asp Ser Ile Ile Ile Ala Tyr Ser Thr
            420                 425                 430
```

```
Ala Arg Lys Arg Leu Lys Lys Tyr Tyr Lys Lys Ile Phe Leu His Leu
        435                 440                 445


Leu Asp Val Ile Cys Leu Asn Ser Tyr Leu Ile Tyr Lys Met Asn Gly
    450                 455                 460


Gly Lys Leu Ser Arg Ile His Phe Leu Leu Glu Tyr Ile Glu Asp Thr
465                 470                 475                 480


Ile Ala Ser Tyr Pro Ile Glu Ser Arg Asn Leu Pro Lys Ser Arg Ser
                485                 490                 495


Thr Ala Pro Asn Val Ser Arg Leu Ile Glu Lys His Phe Pro Asp Tyr
            500                 505                 510


Ile Pro Gly Ser Ser Arg Thr Thr Asn Pro Ser Arg Arg Cys Ala Val
        515                 520                 525


Cys Tyr Lys Lys Lys Ile Arg Lys Glu Ser Arg Tyr Trp Cys Pro Thr
    530                 535                 540


Cys Gln Val Pro Leu Cys Val Val Pro Cys Phe Arg Glu Tyr His Thr
545                 550                 555                 560


Thr Glu Thr Ile
```

<210> 183
<211> 553
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 183

```
Met Phe Ser Arg Lys Arg Phe Cys Asp Glu Asp Ser Glu Asn Cys Ala
1               5                   10                  15


Ile Asn Phe Ala Asn Glu Ser Asp Ser Ser Asp Glu Ile Cys Lys Phe
            20                  25                  30
```

```
Arg Arg Lys Tyr Arg Arg Ile Ile Val Asp Asp Thr Ser Asp Asp Asp
        35                  40                  45

Gln Leu Pro Glu Ser Trp Val Trp Asn Glu Arg Arg Asn Ser Pro Lys
    50                  55                  60

Ile Trp Asp Tyr Thr Met Thr Pro Gly Ile Ser Glu Ala Ala Leu Cys
65                  70                  75                  80

Gln Leu Gly Gly Ser Arg Gly Glu Phe Asp Thr Phe Asn Leu Thr Phe
                85                  90                  95

Asp Asp Ile Phe Trp Asn Asn Ile Val Thr Glu Thr Asn Gln Tyr Ala
            100                 105                 110

Asn Gln Leu Arg Glu Asn Pro His Thr Arg Arg Lys Ile Asp Glu Thr
        115                 120                 125

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

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

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

Lys Arg Tyr Leu Gln Ile Thr Arg Phe Leu His Phe Ser Asn Asn Asn
            180                 185                 190

Leu Val Ala Asn Thr Asp Lys Leu Lys Lys Val Arg Pro Val Ile Asn
        195                 200                 205

Phe Leu Asn Gln Lys Phe Lys Glu Leu Tyr Ile Met Arg Lys Asp Ile
    210                 215                 220

Ser Ile Asp Glu Ser Leu Met Lys Phe Arg Gly Arg Leu Ser Tyr Lys
225                 230                 235                 240
```

```
Gln Phe Asn Pro Ser Lys Arg Ala Arg Phe Gly Val Lys Phe Tyr Lys
                245                 250                 255

Leu Cys Glu Ser Asp Ser Gly Tyr Cys Tyr Glu Phe Lys Ile Tyr Thr
            260                 265                 270

Gly Asn Asp Lys Ile Asn Cys Lys Asp Ser Ala Ser Glu Ser Val Val
        275                 280                 285

Lys Glu Leu Ser Glu Ser Val Leu His Arg Gly His Thr Leu Tyr Ile
    290                 295                 300

Asp Ser Trp Tyr Ser Ser Pro Lys Leu Phe Met Ile Leu Ser His Lys
305                 310                 315                 320

Tyr Lys Thr Asn Val Ile Gly Thr Val Arg Ser Asn Arg Lys Asn Met
                325                 330                 335

Pro Lys Asp Leu Cys Ser Val Lys Leu Lys Arg Gly Glu Tyr Val Ile
            340                 345                 350

Arg Ser Cys Asn Arg Val Leu Ala Leu Lys Trp Arg Asp Lys Arg Asp
        355                 360                 365

Val Tyr Met Met Ser Thr Lys His Glu Thr Ala Glu Met Thr Ser Gln
    370                 375                 380

Gly Ser Lys Arg Thr Leu Lys Pro Asn Cys Ile Thr Glu Tyr Asn Lys
385                 390                 395                 400

Gly Met Asn Gly Ile Asp Leu Gln Asp Gln Ile Leu Ala Cys Phe Pro
                405                 410                 415

Ile Met Arg Lys Tyr Met Lys Gly Tyr Lys Lys Ile Phe Phe Tyr Leu
            420                 425                 430

Phe Asp Ile Gly Leu Phe Asn Ser Tyr Ile Leu Trp Lys Lys Leu Asn
        435                 440                 445

Asp Gly Lys Lys Gln Cys Tyr Val Asp Tyr Lys Ile Asn Ile Ala Glu
    450                 455                 460
```

```
Ser Leu Leu Lys Lys Met Pro Lys Pro Ile Tyr Lys Glu Arg Gly Val
465                 470                 475                 480


Leu Ser Ser Gly Asp Ala Pro Asp Arg Leu Cys Ala Lys Glu Trp Ala
                485                 490                 495


His Phe Pro Lys His Ile Asp Pro Thr Pro Ser Lys Leu Arg Pro Ser
            500                 505                 510


Lys Arg Cys Thr Val Cys His Lys Asn Lys Lys Arg Lys Glu Thr Thr
        515                 520                 525


Trp Glu Cys Lys Lys Cys Lys Val Pro Leu His Val Pro Glu Cys Phe
    530                 535                 540


Glu Arg Tyr His Thr Val Thr Asp Tyr
545                 550


<210>  184
<211>  616
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  184

Met Ser Glu Ile Asn Asn Ala Gly Asn Ser Lys Ser Lys Arg Pro Ser
1               5                   10                  15


Thr Gly Ser Val Gln Gly Pro Ala Arg Lys Asn Phe Arg Val Ala Asp
            20                  25                  30


Pro Thr Phe Glu Gln Glu Val Ser Glu Leu Leu Ala Ser Asp Gln Ser
        35                  40                  45


Asp Asn Glu Glu Asn Ile Glu Gly Leu Phe Ile Leu Glu Asn Glu Leu
    50                  55                  60


Ile Gln Asn His Glu Ser Asp Asn Asp Glu Asp Gln Asp Gln Glu Ser
65                  70                  75                  80
```

```
Asp Gln Val Leu Gly Glu Glu Thr Asp Ser Asp Ser Ser Asp Asn Ile
                85                  90                  95

Pro Leu Ala Gln Phe Val Ala Ser Asn Tyr Tyr Tyr Gly Lys Asn Arg
            100                 105                 110

Tyr Lys Trp Ser Lys Thr Pro Pro Leu Ala Arg Val Arg Thr Pro Gln
        115                 120                 125

His Asn Ile Ile Thr Ser Arg Ala Gly Ser Ser Lys Leu Thr Ser Glu
    130                 135                 140

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

Met Leu Gln Cys Ile Leu Thr Trp Thr Asn His Arg Ile Ser Ser Tyr
                165                 170                 175

Arg Thr Lys Tyr Val Arg Tyr Asn Arg Pro Glu Leu Asn Asp Leu Asp
            180                 185                 190

Met Val Glu Leu Lys Ala Phe Ile Gly Leu Leu Phe Tyr Ser Ala Val
        195                 200                 205

Leu Lys Ser Asn Asp Glu Asn Thr Ser Tyr Leu Phe Ala Ser Asp Gly
    210                 215                 220

Thr Gly Cys Glu Ile Phe Arg Cys Gly Met Ser Glu Thr Arg Phe Leu
225                 230                 235                 240

Val Leu Leu Leu Cys Leu Arg Phe Asp Asn Pro Asp Asp Arg Glu Glu
                245                 250                 255

Arg Met Lys Ala Asp Lys Leu Ala Ala Ile Ser His Ile Phe Asn Lys
            260                 265                 270

Phe Val Ser Asn Ser Gln Gln Leu Tyr Glu Leu Ser Glu Cys Val Thr
        275                 280                 285
```

```
Val Asp Glu Met Leu Val Lys Phe Arg Gly Arg Ser Tyr Met Ile Ser
    290                 295                 300

Tyr Met Pro Lys Lys Pro Gly Lys Tyr Gly Leu Ile Ile Arg Ala Leu
305                 310                 315                 320

Cys Asp Ala Asn Asn Phe Tyr Phe Tyr Asn Gly Tyr Ile Tyr Ser Gly
                325                 330                 335

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

Val Pro Thr Gln Cys Val Leu Arg Leu Thr Lys Pro Ile His Gly Thr
        355                 360                 365

Asn Arg Asn Val Thr Ala Asp Asn Trp Phe Ser Ser Ile Glu Leu Val
    370                 375                 380

Asp Gln Leu Ser Ser Arg Lys Leu Thr Tyr Val Gly Thr Leu Lys Lys
385                 390                 395                 400

Asn Lys Arg Glu Ile Pro Lys Glu Phe Gln Pro Lys Lys Gln Arg Glu
                405                 410                 415

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

Tyr Val Pro Lys Lys Asn Arg Ala Val Ile Leu Val Ser Ser Met His
        435                 440                 445

His Ser Asn Gln Val Asp Glu Asn Thr Lys Lys Pro Glu Ile Ile Met
    450                 455                 460

Tyr Tyr Asn Ser Thr Lys Gly Gly Val Asp Glu Ala Asp Lys Lys Cys
465                 470                 475                 480

Ser Ile Tyr Ser Ser Ser Arg Arg Thr Arg Arg Trp Pro Met Val Leu
                485                 490                 495

Leu Tyr Arg Val Leu Asp Leu Thr Ala Met Asn Ala Tyr Ile Leu Tyr
            500                 505                 510
```

Asn Met His Gln Pro Lys Ala Val Glu Arg Gly Asp Phe Leu Lys Lys
515 520 525

Leu Ala Arg Val Leu Val Val Pro His Val Gln Arg Arg Val Ile Asn
530 535 540

Ala Arg Leu Pro Arg Glu Leu Arg Leu Thr Met Asn Arg Val Leu Gly
545 550 555 560

Asp Asp Met Val Thr Glu Gly Val Gln Asp Gln Glu Thr Ile Gln Gly
565 570 575

Ser Arg Arg Ala Cys Arg Ile Cys Pro Ala Lys Lys His Arg Met Thr
580 585 590

Thr Tyr Val Cys Val Gly Cys Lys Lys Pro Val Cys Leu Gln Cys Ser
595 600 605

Arg Pro Leu Cys Thr Asp Cys Gln
610 615

<210> 185
<211> 609
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 185

Met Phe Tyr Ser Met Ser Val Val Asn Leu Leu Ile Phe Tyr Ser Ile
1 5 10 15

Leu Pro Thr Met Ser Leu Ser Asn His Pro Asp Arg Ile Leu Thr Leu
20 25 30

Leu Glu Glu Ser Asp Ser Glu Asp Glu Asn Asn Asp Thr Ala Ser Asp
35 40 45

Val Asp Asn Glu Asp His Leu Ser Glu Arg Ser Asn Asn Ser Asp Ser
50 55 60

```
Glu Glu Asp Ala Ser Ser Ile Asp Ser Asp Ser Ser Glu Asn Leu Asp
65                  70                  75                  80

Leu Leu Ser Leu Gln Asn Arg Leu Arg Gln Gln Val Phe Arg Gly Lys
                85                  90                  95

Asp Gly Thr Leu Trp Gln Lys Glu Pro Gly Arg Ser Asn Val Arg Thr
            100                 105                 110

Arg Ser Glu Asn Ile Ile Thr Glu Leu Pro Gly Val Lys Leu Ile Ala
        115                 120                 125

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

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

Arg Arg Ala Leu Cys Ala Asp Val Ser Lys Gln Arg Phe Met Ser Glu
                165                 170                 175

Val Glu Ile Ser Glu Leu Lys Ala Phe Ile Gly Leu Leu Tyr Leu Ala
            180                 185                 190

Gly Phe Tyr Arg Ser Asn Arg Gln Asn Leu Lys Asp Leu Trp Gln Lys
        195                 200                 205

Asp Gly Thr Gly Ile Glu Ile Phe Arg Leu Thr Met Ser Ile Gln Arg
    210                 215                 220

Phe Tyr Phe Ile Gln Ser Cys Leu Arg Phe Asp Asp Lys Asn Thr Arg
225                 230                 235                 240

Ala Glu Arg Gln Asn Leu Asp Asn Leu Ala Pro Ile Arg Glu Leu Phe
                245                 250                 255

Lys Glu Phe Thr Glu Gln Cys Leu Ser Met Tyr Ser Pro Gly Glu Asn
            260                 265                 270
```

```
Cys Thr Ile Asp Glu Met Leu Val Ala Phe Arg Gly Arg Cys Lys Phe
        275                 280                 285

Arg Gln Tyr Ile Pro Ser Lys Pro Ala Lys Tyr Gly Ile Lys Ile Phe
    290                 295                 300

Ala Leu Val Asp Ser Lys Thr Phe Tyr Val Lys Asn Leu Glu Ile Tyr
305                 310                 315                 320

Ala Gly Lys Gln Pro Ser Gly Pro Tyr Ser Val Ser Asn Lys Pro Phe
                325                 330                 335

Asp Val Val Asn Arg Leu Val Leu Pro Ile Ser Lys Thr His Arg Asn
            340                 345                 350

Val Thr Phe Asp Asn Trp Phe Thr Ser Tyr Glu Val Val Ser His Leu
        355                 360                 365

Leu Asn Glu His Arg Leu Thr Thr Val Gly Thr Val Arg Lys Asn Lys
    370                 375                 380

Lys Gln Ile Pro Pro Gln Phe Leu Asn Ile Arg Gly Lys Glu Leu Asn
385                 390                 395                 400

Ser Ser Thr Phe Gly Phe Gln Lys Asp Ile Ser Leu Val Ser Tyr Ile
                405                 410                 415

Pro Lys Lys Asn Lys Ile Val Leu Leu Met Ser Ser Leu His His Asp
            420                 425                 430

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

Thr Tyr Tyr Asn Ala Thr Lys Ser Gly Val Asp Val Ala Asp Glu Leu
    450                 455                 460

Ser Ala Thr Tyr Asp Val Ser Arg Asn Ser Lys Arg Trp Pro Met Thr
465                 470                 475                 480

Ser Phe Tyr Ala Met Leu Asn Ile Ser Gly Ile Asn Ala Asn Ile Ile
                485                 490                 495
```

Tyr Arg Ala Asn Asn Thr Asp Thr Arg Met Thr Arg Arg His Phe Leu
500 505 510

Lys Lys Leu Gly Leu Asp Leu Ile His Asp His Leu Glu Val Arg Lys
515 520 525

Thr Gln Met Asn Leu Pro Arg Leu Leu Arg Lys Arg Ile Leu Asp Phe
530 535 540

Val Gly Gly Pro Ala Glu Glu Pro Pro Arg Lys Ile Thr Gly Thr Arg
545 550 555 560

Lys Arg Cys Gln Ile Cys Pro Ala Lys Lys Asp Lys Lys Thr Asn His
565 570 575

Thr Cys His Val Cys His Ile Tyr Ile Cys Pro Asp His Ile Ile Pro
580 585 590

Tyr Cys Asn Asn Cys Ser Thr Ser Met Ala Ile Ser Asp Asp Val Glu
595 600 605

Asp

<210> 186
<211> 615
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 186

Met Thr Arg Glu Ser Ile Ser Ser Asp Glu Ile Ile Arg Ile Leu Met
1 5 10 15

Asn Glu Asp Glu Ala Asn Gly Asp Asp Ile Phe Glu Glu Glu Cys Ser
20 25 30

Asp Asp Asp Phe Val Glu Glu Asp Asp Ala Ala Asn Asp Glu Val Asp
35 40 45

```
Val Glu Ser Val Val Asp Ser Glu Asn Glu Ser Glu Ile Ile Val Thr
    50                  55                  60

Glu Ser Lys Thr Ser Gly Lys Arg Lys Arg Val Gly Cys Asn Gly Asn
65                  70                  75                  80

Ala Gln Ala Leu Lys Lys Gly Lys Lys Ser Asp Asn Cys Trp Phe Thr
                85                  90                  95

Gln Glu Gly Thr Ile Val Thr Pro Lys Lys Arg Ile Leu Ile Gly Lys
            100                 105                 110

Asn Gly His Thr Trp His Ser Glu Pro Pro Pro Leu Gly Lys Thr Pro
        115                 120                 125

Glu Arg Asn Ile Val Met Arg Met Pro Gly Pro Lys Arg Ala Ala Lys
    130                 135                 140

Glu Ala Ile Ser Glu Arg Gln Cys Trp Asn Leu Phe Leu Asn Ser Asp
145                 150                 155                 160

Met Met Thr Ile Val Val Lys Asn Thr Asn Glu Glu Ile Ala Arg Gln
                165                 170                 175

Arg Gln Asn Tyr Ser Ser Ala Gln Ser Phe Thr Gly Asp Thr Cys Thr
            180                 185                 190

Glu Glu Met His Ala Tyr Phe Gly Ile Leu Ile Thr Ser Ala Ala Leu
        195                 200                 205

Lys Asp Asn His Leu Ser Val Glu Asp Met Trp Asn Asn Phe Tyr Gly
    210                 215                 220

Lys Pro Leu Tyr Arg Ala Ala Met Ser Lys Glu Arg Phe Arg Phe Leu
225                 230                 235                 240

Thr Asn Cys Met Arg Phe Asp Asp Lys Asn Thr Arg Asp Ala Arg Lys
                245                 250                 255
```

```
Ala Ser Asp Pro Phe Ala Ala Ile Arg Asp Ile Thr Asp Met Phe Ala
            260                 265                 270

Ser Asn Cys Gln Glu Met Tyr Thr Pro Ser Thr Cys Cys Thr Ile Asp
        275                 280                 285

Glu Gln Leu Leu Ala Phe Arg Gly Arg Cys Pro Phe Arg Ile Tyr Ile
    290                 295                 300

Pro Asn Lys Pro Ala Lys Tyr Gly Ile Lys Leu Val Met Leu Cys Asp
305                 310                 315                 320

Ser Lys Thr Phe Tyr Ala Val Asn Ile Ile Pro Tyr Val Gly Lys Ala
                325                 330                 335

Thr His Asn Gly Asp Ile Pro Leu Ala Asp Tyr Phe Val Lys Glu Leu
            340                 345                 350

Ser Lys Pro Ile His Gly Thr Asn Arg Asn Ile Thr Thr Asp Asn Trp
        355                 360                 365

Phe Thr Ser Val Ser Leu Gly Ser Ser Leu Leu Glu Asp Tyr Lys Leu
    370                 375                 380

Thr Thr Val Gly Thr Leu Arg Lys Asn Lys Lys Glu Ile Pro Pro Glu
385                 390                 395                 400

Met Thr Met Val Ser Gly Arg Lys Leu Glu Thr Ser Leu Phe Ile Phe
                405                 410                 415

Asp Asp Lys Lys Thr Met Thr Ser Phe Tyr Pro Lys Lys Asn Lys Met
            420                 425                 430

Val Leu Leu Leu Ser Thr Met His Gln Gly Lys Tyr Val Ile Pro Glu
        435                 440                 445

Thr Lys Lys Pro Glu Ile Ile Glu Phe Tyr Asn Lys Thr Lys Gly Gly
    450                 455                 460

Val Asp Thr Met Asp Gln Leu Cys Asn Thr Tyr Ser Cys Ser Arg Lys
465                 470                 475                 480
```

```
Thr Arg Arg Trp Pro Leu Cys Val Phe Tyr Gly Leu Met Asn Ile Ala
                485                 490                 495

Gly Val Asn Ala Ala Val Ile Tyr Asn Thr Asn Met Ala Val Lys Gly
            500                 505                 510

Arg Glu Ile Ile Pro Arg Lys Thr Phe Leu Leu Arg Leu Gly Arg Glu
        515                 520                 525

Leu Val Ile Pro Trp Ile Glu Ala Arg Ser Val Lys Pro Thr Leu Gln
    530                 535                 540

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

Gln Lys Asp Asn Ser Asn Val Asn Gln Gln Val Asn Ser Gly Lys Lys
                565                 570                 575

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

Val Lys Cys Asp Lys Cys Lys Glu Phe Val Cys Asn Ala His Lys Ile
        595                 600                 605

Ser Leu Cys Gln Lys Cys Lys
    610                 615
```

<210> 187
<211> 568
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 187

```
Met Gly Asp Tyr Glu Lys Glu Gln Gln Arg Leu Leu Ala Leu Trp Glu
1               5                   10                  15

Asp Met Glu Ser Asp Asp Glu Val Ile Asn Asn Asp Asp Ser Glu Glu
            20                  25                  30
```

```
Glu Asp Ile Asp Asn Ile Ser Val Cys Ser Asp Tyr Pro Asp Met Glu
        35                  40                  45

Gln Asp Ala Glu Asp Glu Leu Glu Pro Ala Glu Glu Gln Thr Gln Ala
    50                  55                  60

Lys Tyr Phe Phe Gly Lys Asp Gly Thr Lys Trp Ser Lys Gln His Pro
65                  70                  75                  80

Asn Lys Lys Val Arg Thr Arg Ala Glu Asn Ile Ile Ile His Leu Pro
                85                  90                  95

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

Ser Leu Phe Ile Asp Glu Gln Met Ile Ala Asp Ile Val Glu Arg Thr
        115                 120                 125

Asn Glu Arg Ile Thr Glu Lys Cys Ala Gln Trp Lys Asp Ser Pro His
    130                 135                 140

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

Tyr Leu Ser Gly Val Phe Arg Asn Asn His Arg His Leu Tyr Glu Leu
                165                 170                 175

Trp Asn Thr Asp Gly Thr Gly Met Asp Ile Phe Pro Ala Thr Met Ser
            180                 185                 190

Gln Arg Arg Cys Glu Phe Leu Ile Ser Cys Leu Arg Phe Asp Asn Lys
        195                 200                 205

Ser Asn Arg Ala Glu Arg Val Asn Val Asp Lys Leu Ala His Ile Arg
    210                 215                 220

Ala Ile Phe Asp Arg Phe Val Gln Asn Cys Gln Ser Ala Tyr Ser Pro
225                 230                 235                 240
```

```
Ser Glu Tyr Leu Thr Ile Asp Glu Lys Leu Glu Ser Phe Arg Gly Lys
                245                 250                 255

Cys Ser Phe Arg Gln Phe Ile Pro Asn Lys Pro Ala Arg Tyr Gly Ile
            260                 265                 270

Lys Val His Ala Leu Val Asp Ala Arg Thr Tyr Tyr Val Leu Asn Met
        275                 280                 285

Glu Val Tyr Val Gly Gln Gln Pro Gln Gly Pro Phe Arg Val Ser Asn
    290                 295                 300

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

Asn Arg Asn Ile Thr Phe Asp Asn Trp Tyr Thr Ser Leu Glu Leu Leu
                325                 330                 335

Gln Ser Leu Arg Gln Lys His Gln Leu Thr Ala Val Gly Thr Ile Arg
            340                 345                 350

Lys Asn Lys Pro Tyr Leu Pro Pro Ala Phe Leu Asn Val Lys Asn Arg
        355                 360                 365

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

Ser Tyr Cys Pro Lys Lys Gly Lys Val Val Leu Leu Leu Ser Ser Leu
385                 390                 395                 400

His His Asp Asp Ala Val Asp Gln Thr Asp Lys Lys Leu Pro Glu Val
                405                 410                 415

Ile Ser Phe Tyr Asn Phe Thr Lys Cys Gly Val Asp Val Val Asp Glu
            420                 425                 430

Met Ser Ala Ser Tyr Asn Val Ser Arg Asn Ser Arg Arg Trp Pro Leu
        435                 440                 445

Thr Leu Phe Tyr Ser Leu Leu Asn Thr Thr Gly Ile Asn Ser Gln Ile
    450                 455                 460
```

```
Ile Tyr Arg Glu Asn Asn Asn Gly Ile Lys Met Ala Arg Arg His Phe
465                 470                 475                 480


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


Met Ser Asn Pro Arg Leu Thr Arg Glu Leu Arg Gly Asn Ile Arg Lys
            500                 505                 510


Leu Leu Lys Glu Leu Leu Pro Ser Glu Val Phe Glu Tyr Ser Glu Pro
        515                 520                 525


Leu Ser Lys Lys Arg Asn Phe Gln Gln Gly Arg Cys Ser Glu Cys Pro
    530                 535                 540


Arg Ala Lys Asp Arg Lys Thr Arg Tyr Val Cys Glu Ala Cys Asp Lys
545                 550                 555                 560


Phe Ile Cys Leu Ile Leu Tyr Ala
                565


<210>  188
<211>  577
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  188

Met Glu Pro Asp Glu Cys Arg Arg Ile Gln Asp Leu Leu Gln Glu Val
1               5                   10                  15


Glu Glu Glu Glu Leu Val Ser Ser Glu Asp Glu Asp Ser Glu Val Asp
            20                  25                  30


Glu Val Gln Phe Ser Asp His Asn Ser Glu Ser Glu Leu Ser Glu Glu
        35                  40                  45


Glu Met Pro Val Val Glu Leu His Asp Gly Pro Thr Tyr Lys Gly Arg
    50                  55                  60
```

```
Asp Asn Val Thr Thr Trp Arg Lys His Gln Leu Pro Arg Asn Val Arg
65                  70                  75                  80

Thr Arg Gln Gln Asn Ile Val Ile His Leu Pro Gly Val Arg Pro Ile
                85                  90                  95

Gly Gln Asn Ser Asn Thr Pro Lys Glu Cys Phe Ser Leu Ile Phe Asp
            100                 105                 110

Asp Thr Met Ile Glu Thr Ile Val Ala Ser Thr Asn Ile Lys Ile Ala
        115                 120                 125

Lys His Ser Glu Lys Asn Lys Asn Asp Arg Ser Thr Tyr Leu Thr Ser
    130                 135                 140

Ile Thr Glu Met Asn Ala Leu Phe Gly Leu Leu Ile Leu Ser Gly Leu
145                 150                 155                 160

Val Lys Ser Gly His Gln Asn Leu Glu Asp Leu Trp Asn Val His Gln
                165                 170                 175

Leu Gly Ile Asp Ile Phe Gln Thr Thr Met Ser Leu Lys Arg Phe Lys
            180                 185                 190

Phe Leu Ile Arg Tyr Met Arg Phe Asp Asp Ile Asn Thr Arg His Ala
        195                 200                 205

Arg Arg Gln Glu Asp Lys Leu Ala Pro Ile Arg Glu Ile Phe Glu Arg
    210                 215                 220

Phe Asn His Asn Cys Lys Gln Val Tyr Thr Val Ser Glu Tyr Cys Thr
225                 230                 235                 240

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

Tyr Ile Pro Ser Lys Pro Ala Lys Tyr Gly Leu Lys Ile Phe Thr Leu
            260                 265                 270
```

```
Val Asp Ala Arg Thr Trp Tyr Ile Leu Lys Ser Glu Val Tyr Val Gly
        275                 280                 285

Lys Gln Asn Asp Gly Ser Phe Lys Val Ser Asn Thr Thr Val Asp Val
    290                 295                 300

Thr Met Arg Leu Thr Glu Pro Ile His Arg Ser Gly Arg Asn Leu Thr
305                 310                 315                 320

Ile Asp Asn Trp Phe Thr Ser Phe Pro Leu Ala Glu Leu Leu Leu Gln
                325                 330                 335

Gln Asn Val Thr Met Val Gly Thr Met Lys Lys Asn Lys Lys Glu Leu
            340                 345                 350

Pro Pro Glu Leu Leu Ala Lys Gly Arg Pro Glu Lys Ser Ser Val Phe
        355                 360                 365

Ala Tyr Gln Asn Asn Lys Thr Val Val Ser Tyr Val Pro Lys Lys Asn
    370                 375                 380

Lys Asn Val Val Leu Leu Ser Thr Met His Leu Glu Asp Gly Thr Ile
385                 390                 395                 400

Asp Glu Thr Thr Gly Glu Asp Ser Lys Pro Glu Ile Ile Thr Phe Tyr
                405                 410                 415

Asn Met Thr Lys Gly Gly Val Asp Val Val Asp Lys Leu Cys Ser Thr
            420                 425                 430

Tyr Ser Thr Ala Arg Lys Thr Asn Arg Trp Pro Leu Val Leu Leu Phe
        435                 440                 445

Arg Ile Leu Asp Leu Ala Ser Val Asn Ser Tyr Val Val Phe Gln Gly
    450                 455                 460

Asn Asn Pro Gln Ser Lys Met Asn Arg Lys Ser Phe Leu Gln Glu Leu
465                 470                 475                 480

Gly Phe Thr Leu Val Ala Gln Gln Val Gln Thr Arg Ala Thr Gln Met
                485                 490                 495
```

Arg Leu Pro Lys Glu Ile Arg Gln Arg Ala Ala Lys Arg Ala Lys Met
500 505 510

Asp Asn Ala Ile Ala Pro Ala Val Pro Pro Asn Pro Gly Gln Arg Ser
515 520 525

Arg Cys Thr Val Cys Pro Arg Lys Asn Asp Met Lys Val Lys Thr Thr
530 535 540

Cys Phe Lys Cys Asn Lys Tyr Met Cys Asn Lys His Met Lys Thr Val
545 550 555 560

Cys Glu Pro Cys Leu Ala Pro Ala Glu Asn Thr Ser Ser Asp Ser Asp
565 570 575

Tyr

<210> 189
<211> 589
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 189

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

Gln Leu Glu Thr Phe Leu Asn Ser Phe Thr Leu Asp Asp Ala Ala Ile
20 25 30

Asp Pro Gln Tyr Glu Asp Asp Glu Asp Asp Asp Glu Ala Asp His Leu
35 40 45

Glu Glu Arg Thr Glu Cys Thr Asp Thr Glu Glu Glu Ile Ser Asp Thr
50 55 60

Glu Glu Asp Phe Gly Thr Ser Pro Thr Ser Asp Ala Phe Tyr Val Cys
65 70 75 80

```
Lys Asp Gly Val Thr Lys Trp Asn Lys Lys Leu Ala Pro Lys His Glu
                85                  90                  95

Arg Val Pro Glu Asn Leu Leu Lys His Leu Pro Ser Pro Arg Thr Ala
            100                 105                 110

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

Glu Gly Met Leu Lys Val Ile Val Asp Cys Thr Asn Gln His Ile Ser
    130                 135                 140

Gly Thr Lys Ser His Phe Ser Arg Glu Arg Asp Ala Glu Asp Thr Asn
145                 150                 155                 160

Ile His Glu Ile Lys Ala Leu Leu Gly Leu Ile Tyr Met Ala Gly Val
                165                 170                 175

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

Cys Gly Ile Glu Ile Phe Arg Leu Thr Met Ser Ile Asn Arg Phe Leu
        195                 200                 205

Phe Leu Met Arg Asn Val Arg Phe Asp Asn Lys Glu Thr Arg Glu Gln
    210                 215                 220

Arg Lys Glu Ile Asp Lys Leu Ala Pro Ile Arg Gln Ile Phe Asp Asn
225                 230                 235                 240

Phe Val Val Asn Cys Gln Ser Ala Tyr Ser Pro Phe His Cys Val Thr
                245                 250                 255

Ile Asp Glu Lys Leu Glu Gly Phe Arg Gly Arg Cys Ser Phe Lys Gln
            260                 265                 270

Tyr Ile Pro Ser Lys Pro Asn Lys Tyr Gly Ile Lys Ile Phe Ala Leu
        275                 280                 285
```

```
Val Asp Ala Lys Cys Tyr Phe Thr Thr Asn Leu Glu Val Tyr Val Gly
    290                 295                 300

Lys Gln Pro Asp Gly Pro Tyr Ala Val Asp Asn Ser Ala Ser Ala Val
305                 310                 315                 320

Val Gln Arg Leu Cys Glu Pro Ile Asn Glu Ser Gly Arg Asn Val Thr
                325                 330                 335

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

Lys Lys Leu Thr Leu Leu Gly Thr Ile Arg Lys Asn Arg Lys Gly Leu
        355                 360                 365

Pro Lys Glu Phe Thr Gln Pro Pro Lys Ser Arg Ala Val Met Ser Thr
    370                 375                 380

Leu Phe Gly Phe Arg Asp Asn Ala Thr Leu Val Ser Tyr Lys Pro Lys
385                 390                 395                 400

Lys Asn Lys Asn Val Leu Leu Ile Ser Ser Gly His His Asp Asp Gly
                405                 410                 415

Ile Asp Glu Asn Thr Gln Lys Pro Asn Met Ile Leu Asp Tyr Asn Asn
            420                 425                 430

Thr Lys Gly Gly Val Asp Thr Val Asp Lys Leu Cys Ala Ser Tyr Asn
        435                 440                 445

Cys Ala Arg Ile Thr Arg Arg Trp Pro Met Val Val Phe Tyr Ala Leu
    450                 455                 460

Leu Asn Ile Ala Gly Ile Asn Ser Ile Val Ile His Lys Phe Asn Asn
465                 470                 475                 480

Pro Thr Val Thr Gln Pro Arg Arg Thr Phe Leu Arg Asn Leu Ser Met
                485                 490                 495

Ala Leu Ile Asp Gly His Leu Arg Gln Arg Ala Gln Leu His Cys Leu
            500                 505                 510
```

Pro Arg Gln Met Ser Ser Arg Ile Arg Glu Ile Thr Gly Tyr Glu Glu
515 520 525

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

Arg Gly Arg Cys Ala Tyr Cys Asp Arg Arg Lys Asn Arg Pro Thr Lys
545 550 555 560

Tyr Ser Cys Thr Thr Cys Gln Lys Phe Met Cys Leu Glu His Cys Thr
565 570 575

Ile Val Cys Glu Glu Cys Phe Asn Lys Asp Glu Ile Phe
580 585

<210> 190
<211> 567
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 190

Met Phe Ser Gly Lys Arg Phe Arg Asp Glu Ser Ser Val Asn Cys Ala
1 5 10 15

Asn Asn Phe Ala Asn Glu Ser Asp Ser Ser Asp Asp Ile Cys Cys Val
20 25 30

Arg Arg Lys Cys Arg Arg Leu Val Ile Asp Asp Thr Ser Asp Asp Gln
35 40 45

Leu Pro Glu Ser Trp Leu Trp Thr Lys Ile Arg Asn Ser Gln Lys Ile
50 55 60

Trp Glu Tyr Thr Met Ser Pro Gly Ile Lys Glu Ala Ala Leu Cys Gln
65 70 75 80

Leu Gly Gly Gly Arg Arg Glu Phe Asp Ile Phe Asn Leu Ile Phe Asp
85 90 95

```
Asp Ile Phe Trp Asn Asn Ile Val Thr Glu Thr Ser Gln Tyr Ala Asp
            100                 105                 110

Gln Ile Arg Ala Asn Pro His Ser Ser Arg Glu Ile Asp Glu Thr Trp
        115                 120                 125

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

Ile Met Ala Gln Val Lys Lys Pro Arg Ile Gln Met Asn Trp Ser Lys
145                 150                 155                 160

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

Arg Tyr Leu Gln Ile Thr Arg Cys Leu His Phe Ser Asn Asn Asn Leu
            180                 185                 190

Val Ala Asn Thr Asp Lys Leu Ser Lys Ile Lys Ser Val Ile Asn Phe
        195                 200                 205

Leu Asn Gln Lys Phe Lys Glu Val Tyr Ile Met Lys Glu Asp Ile Ala
    210                 215                 220

Ile Asp Glu Ser Leu Met Lys Phe Lys Gly Arg Leu Ser Tyr Lys Gln
225                 230                 235                 240

Phe Asn Pro Ser Lys Arg Thr Arg Phe Gly Val Lys Phe Tyr Lys Leu
                245                 250                 255

Cys Glu Ser Asp Ser Gly Tyr Cys Tyr Glu Phe Lys Ile Tyr Thr Gly
            260                 265                 270

His Asp Lys Thr Asn Tyr Asp Asp Ser Ala Ser Glu Ser Val Val Lys
        275                 280                 285

Glu Leu Ser Glu Ser Val Leu His Arg Gly His Thr Leu Tyr Ile Asp
    290                 295                 300
```

```
Asn Trp Tyr Ser Ser Pro Arg Leu Phe Met Thr Leu Ser His Lys Tyr
305                 310                 315                 320

Lys Thr Asn Val Ile Gly Thr Val Arg Gly Asn Arg Lys His Met Pro
                325                 330                 335

Lys Asp Leu Cys Asn Val Lys Leu Lys Arg Gly Glu Tyr Thr Ile Arg
            340                 345                 350

Ser Cys Asn Arg Ile Leu Ala Ile Lys Trp Lys Asp Lys Arg Asp Val
        355                 360                 365

Tyr Ile Met Ser Thr Lys His Glu Thr Val Glu Met Thr Ala Gln Arg
    370                 375                 380

Tyr Tyr Arg Thr Pro Lys Pro Asn Cys Ile Leu Glu Tyr Asn Lys Gly
385                 390                 395                 400

Met Ile Arg Ile Asp Leu Gln Asp Gln Ile Leu Ala Cys Phe Pro Val
                405                 410                 415

Met Arg Lys Tyr Met Lys Gly Tyr Lys Lys Ile Phe Phe Tyr Leu Phe
            420                 425                 430

Gly Ile Asp Leu Phe Asn Ser Tyr Ile Leu Trp Lys Lys Ile Asn Lys
        435                 440                 445

Glu Lys Lys Gln Cys Tyr Ile Asp Tyr Arg Ile Asn Ile Ala Glu Ser
    450                 455                 460

Leu Leu Lys Asn Met Pro Lys Pro Asn Tyr Arg Glu Arg Gly Gly Leu
465                 470                 475                 480

Ser Phe Gly Asp Ala Pro Glu Arg Leu His Ala Lys His Trp Ala His
                485                 490                 495

Phe Pro Lys His Ile Asp Pro Thr Ala Ser Lys Leu Arg Pro Ser Lys
            500                 505                 510

Pro Cys Arg Val Cys Gln Lys Asn Lys Lys Arg Ser Glu Thr Thr Trp
        515                 520                 525
```

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


Thr Arg Met Leu Arg Ile Ile Ser His His Cys Arg Leu Leu Ile Leu
545                 550                 555                 560


Tyr Tyr Cys Phe Leu Tyr Lys
                565


<210>  191
<211>  581
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  191

Met Ser Leu Ala Arg Phe Leu Ala Glu Glu Ala Leu Ser Gln Leu Met
1               5                   10                  15


Asn Trp Asp Ser Asp Val Glu Glu Asp Ile Ser Glu Thr Glu Asp Ala
            20                  25                  30


Ser Glu Pro Glu Asp Tyr Val Ile Asp Asp Pro Gly Cys Gln Phe Ser
        35                  40                  45


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


Asn Glu Asn Gln Glu Met Gln Lys Pro Pro Ser Thr Glu Gly Thr Leu
65                  70                  75                  80


Thr Ser Lys Asp Gly Gln Ile Lys Trp Ser Thr Ser Pro His Gln Thr
                85                  90                  95


Gln Ala Arg Leu Ser Ser Ser Asn Ala Ile Lys Met Thr Pro Gly Pro
            100                 105                 110


Thr Arg Phe Ala Leu Thr Arg Val Asp Gly Ile Glu Ser Ala Phe Gln
        115                 120                 125
```

```
Leu Phe Ile Ser Pro Pro Ile Glu Lys Ile Ile Leu Asp Met Thr Asn
    130                 135                 140

Leu Glu Gly Arg Arg Val Phe Gln Glu Lys Trp Lys Pro Leu Asp Pro
145                 150                 155                 160

Ser Asp Leu His Ala Tyr Ile Gly Ile Leu Val Leu Ala Gly Val Tyr
                165                 170                 175

Arg Ser Lys Gly Glu Ala Thr Ala Ser Leu Trp Ser Glu Glu Tyr Gly
            180                 185                 190

Arg Pro Ile Phe Arg Ala Thr Met Ser Leu Glu Thr Phe His Met Ile
        195                 200                 205

Ser Arg Val Ile Arg Phe Asp Asn Arg Ala Thr Arg Ala Gly Arg Arg
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Lys Ile Leu Pro Leu Leu Tyr Asn Pro Gly Pro His Val Thr Val Gly
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Asn Thr Thr Leu Val Ser Tyr Cys Pro Lys Arg Asn Lys Asn Val Leu
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Val Met Ser Thr Met His Lys Asp Ala Ser Leu Ser Thr Arg Glu Asp
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Met Lys Pro Gln Met Ile Leu Asp Tyr Asn Ser Thr Lys Glu Gly Val
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Asp Asn Leu Asp Lys Val Thr Ala Thr Tyr Ser Cys Gln Arg Lys Ser
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acttgtcatt tgtatagttt ttttatattg tagttgttct attttaatca aatgttagcg 1740

tgatttatat ttttttcgc ctcgacatca tctgcccaga tgcgaagtta agtgcgcaga 1800

aagtaatatc atgcgtcaat cgtatgtgaa tgctggtcgc tatactgctg tcgattcgat 1860

actaacgccg ccatccagtg tcgaaacgct atgatccaat atcaaaggaa ctttttgtag 1920

tacttgcatc taccacaatt attgcatcaa gctgtaatta catatcaaat attccaaaaa 1980

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attatccgcc aagtacaatt ttttactctt cgaagataga aaatttgctg acattggtaa 2280

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gaatgcacac ggtgtggtgg gcccaggtat tgttagcggt ttgaagcagg cggcagaaga 2400

agtaacaaag gaacctagag gccttttgat gttagcagaa ttgtcatgca agggctccct 2460

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tatcggcttt attgctcaaa gagacatggg tggaagagat gaaggttacg attggttgat 2580

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cgtggatgat gttgtctcta caggatctga cattattatt gttggaagag gactatttgc 2700

aaagggaagg gatgctaagg tagagggtga acgttacaga aaagcaggct gggaagcata 2760

tttgagaaga tgcggccagc aaaactaaaa aactgtatta taagtaaatg catgtatact 2820

aaactcacaa attagagctt caatttaatt atatcagtta ttaccc 2866

<210> 215
<211> 3047
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 215
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tatatatacg catatgtagt gttgaagaaa catgaaattg cccagtattc ttaacccaac 120

tgcacagaac aaaaaccagc aggaaacgaa gataaatcat gtcgaaagct acatataagg 180

aacgtgctgc tactcatcct agtcctgttg ctgccaagct atttaatatc atgcacgaaa 240

agcaaacaaa cttgtgtgct tcattggatg ttcgtaccac caaggaatta ctggagttag 300

ttgaagcatt aggtcccaaa atttgtttac taaaaacaca tgtggatatc ttgactgatt 360

tttccatgga gggcacagtt aagagacatt actaaacgaa aggcagtttt tctttacaca 420

cacacacaca cacacacaaa aaacaacaac tttgatgcag acttttgcct ggttcaggaa 480

tcgcgttcga gtaatgaaga ttacaacttc tggaaatcgc aatggggcga ggactcatgg 540

atgtcccatg gaaacagcca ttcagctgga actctaactc ttatattatg tttatggtca 600

atttgaccgg atttcaattt ttgtgttgat caaagcgcct ggttatcctt taaatttaaa 660

aatgtccttt tggtttactt tattttgata acttctgaag agtcattcag caccaggtgt 720

gtgtgaaaga ggaactttct ctccactgtc ctgtacacta tttccatgcc ctttctttga 780

gaaatagacc aaaagtttag cttgcctcgt ccccgccggg tcacccggcc agcgacatgg 840

aggcccagaa taccctcctt gacagtcttg acgtgcgcag ctcaggggca tgatgtgact 900

gtcgcccgta catttagccc atacatcccc atgtataatc atttgcatcc atacattttg 960

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aaggttagga tttgccactg aggttcttct ttcatatact tccttttaaa atcttgctag 1140

gatacagttc tcacatcaca tccgaacata aacaacaatg tctgttatta atttcacagg 1200

tagttctggt ccattggtga aagtttgcgg cttgcagagc acagaggccg cagaatgtgc 1260

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ggtcaatgat tacggcattg atatcgtcca actgcatgga gatgagtcgt ggcaagaata 1500

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cggtgggaca ggtgaacttt tggattggaa ctcgatttct gactgggttg gaaggcaaga 1680

gagccccgaa agcttacatt ttatgttagc tggtggactg acgccagaaa atgttggtga 1740

tgcgcttaga ttaaatggcg ttattggtgt tgatgtaagc ggaggtgtgg agacaaatgg 1800

tgtaaaagac tctaacaaaa tagcaaattt cgtcaaaaat gctaagaaat agtcagtact 1860

gacaataaaa agattcttgt tttcaagaac ttgtcatttg tatagttttt ttatattgta 1920

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ccgtggatga tgttgtctct acaggatctg acattattat tgttggaaga ggactatttg 2880

caaagggaag ggatgctaag gtagagggtg aacgttacag aaaagcaggc tgggaagcat 2940

atttgagaag atgcggccag caaaactaaa aaactgtatt ataagtaaat gcatgtatac 3000

taaactcaca aattagagct tcaatttaat tatatcagtt attaccc 3047

<210> 216
<211> 572
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 216
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ataccgtcat ttttcaaata tgagcgtcac tgctgcgagt accttactgt atagtgctcg 120

cgcgtcggtc agtgtgcggc ggggggtcgc agcgagcgca cgtgtgcgta gcggagggaa 180

ggtgtccacg agactaccac gtcagcgtta aggtaagtgt ccacgagatt accacttcag 240

tgaaatggtt atatcttcat agtgtctcct aaacaaccac gtcagtcatt gagtttcaat 300

gatttattat tttatgttat tttccaattt tcataaacta tttatactac tattttatta 360

ctacttatac tacttacaat taggacagat ttctactttt gtttgtaatc aattaacttg 420

aatacaaagc cgtttattta acatacaaac aacataacaa tacataataa tgttatctct 480

gagtaacaca ggttacagga aacaatatct atacagcacc cgcgtgtgct taagtcgtgc 540

tagaaaacta acagtattta acttgttttt ag 572

<210> 217
<211> 388
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 217
ttttgaaact ctctagtttt taagttgacc aacgaatgta tctcaatttt cctagactga 60

ttaatgttat tgtgaacttt taaaatgtat aatgtgaaat ttgaaaaatt tgattttgtt 120

atttttttat gtcataaatg tttaagaaga aatttataga ctgatttgtg ttaagtaaat 180

aaaccttgtt taattttgaa aatagatatt gttttttttt ttatttcaat taaatataaa 240

atataaaaag gcaagaaatc taacaaacat gaataaatta gctgcatatt ttaattctaa 300

aaaaatattt gctgttgaaa tggtgtctgg tatactacca cctcagttga attgtaacaa 360

tttaaccacg tcagttgcag agggttaa 388

<210> 218
<211> 378
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 218
ttaaccctta attggtcgcg tggggtgtca tacaccccag agcgggttcc caggcgcaca 60

acttttaaa atttgaattt agcgcgctgc tcttctaggt agcttcgtaa acacgtaaaa 120

cgtacatgat tcagttgcga gcggcgctcg gttgtggacg gttgagctca gagagtgtgt 180

ttggggtgca cgacacccca ggtgactgtt tgtgtggtct aaattccgag taagtaaata 240

gttgttaatt ttattatttc cgttttaaaa cattgtattt tgcaagtgat gaatgttaaa 300

agtgttcaat tataataatt tgacattttt gaggttatgt tgtgatattt ttgtttttgg 360

ttttcagtaa aatcaaaa 378

<210> 219
<211> 220
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 219
aactaggttt tgtaaaaaat atttttttata ttaaaaaaat aagttgatta tattaaaaat 60

atgtttaaaa gttaattaat atgtaagtta aaatgttcga attaatacaa gtgtgatttt 120

gcatgtattt agtattttat tttatttcct aattctgggg tgctaagcac cccacgcgac 180

cgcttatgca actttgtagg cgcgcccaat taagggttaa 220

<210> 220
<211> 455
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 220
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ctgtcaatac gttgttgaca ccaaaactat ccatttttaa tatattgtca cggggtcggc 120

ttttatcgca tgttatttat ttatttatta atagattcga tagcccgtgt aaaattgaat 180

ggtatagttg gattcatttt tcgaattatt tatagaatat ttttcctaat tattattttc 240

gttgatatta tttaatatct taatatataa tacacatata ccaaattatt attgttgaaa 300

tattacacag ttttatcttt tatgtttgac agtcattctt caacgtgcgt acattgtcgt 360

agtcagtcgt agtcactaga attgatatta ttttgtgtgt gttttttttaa gtacatttaa 420

aattgttcat tttaatccta catagtgata gtata 455

<210> 221
<211> 439
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 221
attaaaaatt atgtttattg ttttatttat atttatactt atttgtaagt taaaaactac 60

agtttaattc aataagtagt atttttttat tttatttcat tttattaaat attaaaaata 120

aatctataca aaaaaaaagt tgaattttca ttttacattt ttgtgtaacc gctgtgttgt 180

agtacaaatt gaaaaaaacc aaagtactta taaactcaat agtatcgtaa tattattgaa 240

aaacataatt gtaagtgtga tgtatgataa tttatcaagt atttatttag atataattgt 300

ggattcttat ttattattag catgaatcgg gcgcgcaacg ccggtgtcaa cacgtagttg 360

acagtatcag ccgagactgg tttttggtta cggctacgcg cgcgctaatg cataattcgg 420

tcggcagtga acgtgttaa 439

<210> 222
<211> 286
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 222
ttaacactcc accgcacgcg cgtctactat tgtagactgc agaatttagt tacgcaatat 60

ttacaacatt catgtaagag aagttgcctg ttttcgtgta ttcctcaaaa atgacaccct 120

taacgtattt agttggtttt caaacgcggt tgctagtgta tcgtcgagtt tttttgttat 180

ttctacgatt gtagagcacg cgtgttctcc cgtaactaat tctgttaccg cgtaagtatg 240

caatttaagc gttatttatg ggtttttcgt tatgttacat ttttag 286

<210> 223
<211> 204
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 223
cttgaagata tattttattt tactccatac tataccttat tttcttttga tttctataaa 60

taaagttgtt ataagtatat ctaatacttt ttattatcag aaatggaaaa taaataaaga 120

ttctaataag acgcgaatgt tctactattg tagtacatgc gtgttttgtt gtatgaaaaa 180

ggggcgcgtg cggtggagtg ttaa 204

<210> 224
<211> 365
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 224
ttaaccctag aatgcacgac tggggtcgat ttcgacccca ggcaaacttt gaactatata 60

cgctcctgtt cgactaactc tctaaaagta cgggctacgt cgggcgcagc gttagttgtt 120

cgctggcagt gacgcagcac cgtcgcaaag cgtgcgtggg gtcgatattg accccagttg 180

tgagtttccg tttgtgtttt gtcacggtaa gctaatttta tatttttgc tagaatcaat 240

atatttcatg tattattacg taatctgagc ataaatagtc ataaatatta tttaagacaa 300

aatatctcac gacttagtcg gtaaaaatcc cgttgcctac agataagatt gacattttgc 360

agaaa 365

<210> 225
<211> 529
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 225
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aattaaaata atacttaaaa tacaattttt tatggttttt tcatcgattt tttccatatt 120

tcaactttgc gaatttcttc atttttataa tcttaaataa atatactttt tgaacagaac 180

ataacgatga caatttttt ccaattgtct aatgtgtcct cttcaaagtt tgaattttga 240

aaattggttg attacaaaaa aagatacaaa tttttgtttt aaaaaagagg tttttgctga 300

ttttctgcat ttttcggtct tcaaatggat ttttcactaa ctaaacttga gtaaaattaa 360

atttatcgta tactattctc ttttttatta aaaaacgaag aaatttatgt actattaagg 420

ccctttatct ctgtaggacc ggttttacga tcaaaaaagc gttgagtcga tattgacccc 480

agttatgagt taaaaggtaa aaaaaatgac ttgtgcgttc tagggttaa 529

<210> 226
<211> 354
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 226
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gagttggtat aggtttaggt ggggaactgt ggttcccaat agctgcttat tatgtatacg 120

catgtggtat gaacgagtag ttttgaattg atttttagta ataaggctcc tagtgtgagt 180

taaagttacc cggaggacag gtgtcatcca cgcgaccatt gacgttagtg ttggtttcat 240

agacactgtg tatattttcc accatttctc atcgctgaag gtaccaatgc agtttatatt 300

ttacattagt tcaacacagc attttaggat ccatattgga ggaaattttc agct 354

<210> 227
<211> 214
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 227
cttgtaaaat aactatcatg tatgtaataa aaatattttt tgagttctgt tggtaattaa 60

tactttctct ataccatcag taataaattc tgattacctt gtaacacaaa aagatattaa 120

atccgtaaag tggccctaaa caaactgtgg atgaccactg tcatccgcgc gattatgccc 180

gtcctaaaca ttgacgcgac cgctgcaggg ttaa 214

<210> 228
<211> 253
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 228
ttaacccgcg agaactcgca ccgggtataa catgcccgat ccattttcat tcaaagtttt 60

tcttactttc ttctattgga acagagccag gatttcgtgt agctgtattc aaggtcacat 120

tctttcacta ggggaaaagc tggttttgtt ctataaatag attttcagga acaggtgtcg 180

ggggtatgtc atacccgtgc tagtcctggc gtcagtcgga tcattccttc tttttctctc 240

agtttagtga att 253

<210> 229
<211> 185
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 229
acatgtgagt atgtattttt aaactcaata aaattcttta atgtattatt ttgtaatgtt 60

taattatgta aggcttgctt ataaacagta ttatttcata tttaggtagc agaaatgaac 120

tagggtatga gatacccagc gcgagttctc gcgttggaaa acggttgcgt gttctcccgg 180

gttaa 185

<210> 230
<211> 411
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 230
ttaaccctag ataactaaac attcgtccgc tcgacgacgc gctatgccgc gaaattgaag 60

tttacctatt attccgcgtc ccccgccccc gccgcttttt ctagcttcct gatttgcaaa 120

atagtgcatc gcgtgacacg ctcgaggtca cacgacaatt aggtcgaaag ttacaggaat 180

ttcgtcgtcc gctcgacgaa agtttagtaa ttacgtaagt ttggcaaagg taagtgaatg 240

aagtattttt ttataattat tttttaattc tttatagtga taacgtaagg tttatttaaa 300

tttattactt ttatagttat ttagccaatt gttataaatt ccttgttatt gctgaaaaat 360

ttgcctgttt tagtcaaaat ttattaactt ttcgatcgtt ttttaggcct a 411

<210> 231
<211> 184

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 231
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atattcaaaa cttaagaggt ttaataaata ataataaaaa aaaaatggtt tttatttcgt 120

agtctgctcg acgaatgttt agttattacg taaccgtgaa tatagtttag tagtctaggg 180

ttaa 184

<210> 232
<211> 331
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 232
ttaaccctag aagcccaatc tacgtcattc tgacgtgtat gtcgccgaaa atactctgtc 60

tctttctcct gcacgatcgg attgccgcga acgctcgatt caacccagtt ggcgccgaga 120

tctattggag gactgcggcg ttgattcggt aagtcccgcc attttgtcat agtaacagta 180

ttgcacgtca gcttgacgta tatttgggct ttgtgttatt tttgtaaatt ttcaacgtta 240

gtttattatt gcatcttttt gttacattac tggtttattt gcatgtatta ctcaaatatt 300

atttttattt tagcgtagaa aatacagcct a 331

<210> 233
<211> 375
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 233
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taagaaaaac attaaaataa gtttcttttt gtaaaattta attaattata agaaaaagtt 120

taagttgatc tcatttttta taaaaatttg caatgtttcc aaagttatta ttgtaaaaga 180

ataaataaaa gtaaactgag ttttaattga tgttttatta tatcattata ctatatatta 240

cttaaataaa acaataactg aatgtatttc taaaaggaat cactagaaaa tatagtgatc 300

aaaaatttac acgtcatttt tgcgtatgat tgggctttat aggttctaaa aatatgattg 360

ggcctctagg gttaa 375

<210> 234
<211> 433
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 234
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caggggggcat gtgtacaata gcaggccaat atttttggag aattactttt tctatggctt 120

ttctatgccc atagaaactc aattgtgtga caggtttaat atcttgaata attggactta 180

ttcggttgaa tgaattctgg ggtccaaggg accccagaca agcaagccca taatattgtt 240

gtgatatcta tggttgatgc ccagtcatat aaatatgatt ccacaaagca actctcacga 300

ctattttatg tctgctgcct accgcaactg acttgtgtgt tctaacggca atcagcttca 360

gttgataagt tcaactatcg cgtacaactc tggcaacttt gtcaatccgc cactgaaagc 420

gctgccgaca ctg 433

<210> 235
<211> 531
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 235
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aaattgcctt taacacttga gcaagatgag ctgatagcat aactggctat aatacaacat 120

atacatacca tatatacata ttacatactt ataataagta atctcaaaaa tttaatctca 180

aatctcaaaa tctaaatttt ccataactta tcataagcac agagctatgt gcaagttctg 240

attgtacact ttttgcagct tcttttaatt gctcagcatc atgaatttgt acttacatgt 300

aaatatgact atcgcctaat tttcatgtaa ctgtcatctg tgtgcaaaca cctgttctgt 360

gctttgcaaa cacctgtact taataaagtc aaataataat taatattaaa attaatagtc 420

aaataaacta cacaaataat ctgttgtgct cagcatcaga ttctgaatgg ggtccattgg 480

accccagaaa aaagaaacag actatttttt ctttaactgt ttgagggtta a 531

<210> 236
<211> 837
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 236
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ccatgacgac tttatccgtc atgtgtaaaa ttttgttaca attcgatatt taaattgtag 120

ttctggagaa aattaaattt tattcctaaa ttttaatatg tttaaaatgt tcagaggtca 180

caacgaaatg aaacaagcaa ataaaaatta taaataattt aagttgattc ataacggtct 240

gagagctaac tcgtgaacag tgcagttata tctggatatt tgattatccc gattttcatc 300

ttgatgtacc aaaaccaaaa aaaagtttat tagattctta atttagattc tgtattcttt 360

tttatactag attctctatt tgcggtgata cctggaaaca gctcatgtgc gctatctcac 420

tccttgtttg ttttggatca ggcaattttt gttgctattc agcgcagttc taggacttat 480

cggggatgga gatgaaacgg ttgattttta tcagttgtcc gagaattcgt aaacgggggc 540

cacccggata tattgttagc ctcacatctt gtgcaaactt tagcgcaggc cgcgattaga 600

tatccccact taggtttatt cactcttccg cggtttacta gactctaacc cacgtttgtc 660

atttcaattt ttgaacgtga acgatgcagt gcatttcagt gtgtctgaaa tagtcagtga 720

atcgtgccaa gtcatataaa gtgcaatgta agtgtttcaa gtgtctaatt attatagtta 780

tccagaaaac tttcgtaacc cactattttt ttattcttag cttattttat ccccaaa 837

<210> 237
<211> 240
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 237
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gcgactgtac aagtattacg aataaaattg ttcattttct aaaatcaagt cgtcattttg 120

acccaatatt tcaacagtgc cacttactct gtgtttgacg actatacccg tcatcgcttg 180

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<220>
<223> Synthetic

<400> 238
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gcgcagcgtt cgggacgttc gcacgacttg ggtacacgcc gatccgggca attgtaaaca 120

tgacggacat cgcccgtggt agagcggtcg cggtttgtag atagcacaga caagactcgt 180

gatgtatttc tatcatctct tcgtatcgta attagtttcc agtcgttctt gatcgcattc 240

gcacgtcgaa atttacgttc ataaattcta gagaagcaaa cccacaag 288

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<220>
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<400> 239
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caccgtacgc gggctatgcc cgtcattgta ggttaagggg ttaa 164

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<211> 280
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 240
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ttcacctatt tccccccgct ccccgcgatt gagcagctca gtagcttttg ttttagttgc 120

caaactacca acgagggagg aggttgtgtc gtccggtgaa tctcacgtga gttataacca 180

tcgaaaaatt gactggagcc tgttaggcta cacgtccatt gttgtcatat aatatatttt 240

ataagggcga ttatgtttgt ttcagatttt gtagtacaaa 280

<210> 241
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<212> DNA
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<220>
<223> Synthetic

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taagttgagc tgttttaaat atctaaaaat gtagcctaag taaattaaga cttaaaagtg 180

ccataattat tgatttttca catttctata tttttgttaa taaaagatga ttatataagc 240

atgttatttt attgctaaat accttaactg taatatccaa tcagttttta agcaacctta 300

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gtagtgttaa gaaaaaatta cgtccatact taaaggttaa 400

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<220>
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ctccttagtc ggccggtaag tttagtgcta cgtcggctgc gcagcgagat acacgtgcgc 180

caagtcaacg cgggtaagtt tgacccagcg tcatcgcggg cgtcgtattt ttgtggcatt 240

ccttttttaa ttaatttt 258

<210> 243
<211> 362
<212> DNA
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<220>
<223> Synthetic

<400> 243
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agttcctatt attcgtaaga aaagtctatt aaaattgtta aaagtagaac aaactaatga 120

atgttaaatt ttgaaccttg attttgcatg tgttactttg gaaaccaata aaagtatgat 180

tgatttaata taatggcata attttatttt ataacaagcg cagacgaccc tttttaacaa 240

ataactaaaa aaaataagat aacgtctttt atttcgcaaa aaatttactt tataatgagg 300

ggtaattgtg acccagtgtc attgaccacg taatttttt cacgtcaatc acgccgggtt 360

aa 362

<210> 244
<211> 379
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 244
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tctattcagt tgcaggtttg aacttgttct aagtggttgt gttttgtggt atcgctgtct 180

tggggcagtc aattccccag tgtagtgttc atgtaagtat aacaaattat agcttttcta 240

tcttctataa ttgagaactg attattgata tttattataa gttgtataat gctttttat 300

aattaattat taattaataa tgtaaagttg attaattaat cataataatt gcattatttc 360

ttaattacag ctctccaaa 379

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<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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atcattaaag aaagtgtgag tttttacgat attatttta attattattt tccttgtggg 120

gcatctagtt ccccagtgta gtactagtgt cgccagcaac aactgtagta ttccagggtt 180

aa 182

<210> 246
<211> 378
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<220>
<223> Synthetic

<400> 246
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cggattaata cttcgggtct atcgggtgct gcgtcctagt agctttaagt gatacattaa 120

tccatacata tcgcttctca gtacacttga ccggttggcg taatatcgag taggcgtgtt 180

tcaaagtcgt ctggatttat cacaccccac ctgtcgaatc tttaaacttt taaacggttt 240

cattgtgttt tataataaat attttataat tttgctgctt agataaggta agtgatttta 300

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aattaatata ataatata 378

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<211> 354
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<220>
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tttatctttc atttttcata caaacccaat gtaggacaat aaacattttt ttttactata 180

aattaaatta atcgttattt gacatcatat caacaacaag tcccaccaga aatctaagaa 240

ataagtccca gaaataacaa ataaattcaa ataaaccgtt gtttgagttg gggtatatag 300

caccccacct gtcacaaatt gtcacaaaaa ttcacatgtc ggatgccggg ttaa 354

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<212> DNA
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<220>
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acagtctgta ttcagtagag tctcagtgct gacacatcct gtttattcaa cataacctcc 180

aaaagtgctt ggggagtctc tgtaccccca cgttacccgt tgtgtcagca catttcaccg 240

catccattct tctatttctt ttataaaagt aagtatatta tagtttttc tgacttgaat 300

aactagaatt gtagttgtta taacctaacc tataaactca cattaaattt ggccttcgta 360

aacataaact aacctggatg tgtgttacat agcaatttca tcatgtacga cttgccttta 420

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<211> 339
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<220>
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<400> 249
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acattttaga tatttgtgaa aaaaactcat acacaaaact aaaaaaaaaa gaaaaatgat 180

ttttttatga ttcttgaagt ttttcctaac aaaataaaca tctaaattaa atcaaaggtc 240

cataatgtct taagtaaata gaaaaaataa atgggggtaa tcagacaccc cacgttacca 300

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gtaaatagtt gttcttgttt tatattatta ttaagtagat tttagttagt gttagttagt 240

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gtattgtttg gttaaaacag gtaaataaaa gtacgatttc attaaattgt tgtcttga 358

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<400> 251
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aaaaatatat tttaatgcgg actctcagtc cggcgcgtgt aatcttgtgt gtattaaaaa 180

ccgcgtgtac tggaaggtta a 201

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gcgcaacctt cgagccattc gcgcgacttg tgtagtacgc tgatcgagcc tattatctct 120

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ataaattcta gagaagcagt cccacaag 208

<210> 253
<211> 299
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<220>
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<400> 253
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atcatcgtac tacgggctat gcccgtaata ttcacttctg gcccgatcat cgtacacggg 180

ctatgcccgt aatatttacg tttggcccga tcagcgtaca cgggctatgc ccgtaatatt 240

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<210> 254
<211> 416
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<400> 254
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gattacaact tctggaaatc gcaatggggc gaggactcat ggatgtccca tggaaacagc 180

cattcagctg gaactctaac tcttatatta tgtttatggt caatttgacc ggatttcaat 240

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<213> Artificial sequence

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Ala Gly Ala Val Glu Phe Trp Thr Asp Arg Leu Gly Phe Ser Arg Asp
20 25 30

Phe Val Glu Asp Asp Phe Ala Gly Val Val Arg Asp Asp Val Thr Leu
35 40 45

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

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

Val Val Ser Thr Asn Phe Arg Asp Ala Ser Gly Pro Ala Met Thr Glu
85 90 95

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

Gly Asn Cys Val His Phe Val Ala Glu Glu Gln Asp
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<400> 260

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Pro Trp Ser Ala Lys Gly Glu Gln Leu Leu Phe Lys Ala Ile Thr Tyr
20 25 30

Asn Gln Trp Leu Leu Val Gly Arg Lys Thr Phe Glu Ser Met Gly Ala
35 40 45

Leu Pro Asn Arg Lys Tyr Ala Val Val Thr Arg Ser Ser Phe Thr Ser
50 55 60

Asp Asn Glu Asp Val Leu Ile Phe Pro Ser Ile Lys Asp Ala Leu Thr
65 70 75 80

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

Ile Tyr Lys Ser Leu Ile Asp Gln Val Asp Thr Leu His Ile Ser Thr
100 105 110

Ile Asp Ile Glu Pro Glu Gly Asp Val Tyr Phe Pro Glu Ile Pro Ser
115 120 125

Asn Phe Arg Pro Val Phe Thr Gln Asp Phe Ala Ser Asn Ile Asn Tyr
130 135 140

Ser Tyr Gln Ile Trp Gln Lys Gly
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<210> 261
<211> 187
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 261

Met Val Arg Pro Leu Asn Cys Ile Val Ala Val Ser Gln Asn Met Gly
1 5 10 15

Ile Gly Lys Asn Gly Asp Leu Pro Trp Pro Pro Leu Arg Asn Glu Phe
20 25 30

Lys Tyr Phe Gln Arg Met Thr Thr Thr Ser Ser Val Glu Gly Lys Gln
35 40 45

Asn Leu Val Ile Met Gly Arg Lys Thr Trp Phe Ser Ile Pro Glu Lys
50 55 60

Asn Arg Pro Leu Lys Asp Arg Ile Asn Ile Val Leu Ser Arg Glu Leu
65 70 75 80

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

Ala Leu Arg Leu Ile Glu Gln Pro Glu Leu Ala Ser Lys Val Asp Met
100 105 110

Val Trp Ile Val Gly Gly Ser Ser Val Tyr Gln Glu Ala Met Asn Gln
115 120 125

Pro Gly His Leu Arg Leu Phe Val Thr Arg Ile Met Gln Glu Phe Glu
130 135 140

Ser Asp Thr Phe Phe Pro Glu Ile Asp Leu Gly Lys Tyr Lys Leu Leu
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Pro Glu Tyr Pro Gly Val Leu Ser Glu Val Gln Glu Glu Lys Gly Ile
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Lys Tyr Lys Phe Glu Val Tyr Glu Lys Lys Asp
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<210>  262
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<400>  262

Met Ile Glu Gln Asp Gly Leu His Ala Gly Ser Pro Ala Ala Trp Val
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Glu Arg Leu Phe Gly Tyr Asp Trp Ala Gln Gln Thr Ile Gly Cys Ser
            20                  25                  30


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


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


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


Leu Asp Val Val Thr Glu Ala Gly Arg Asp Trp Leu Leu Leu Gly Glu
                85                  90                  95


Val Pro Gly Gln Asp Leu Leu Ser Ser His Leu Ala Pro Ala Glu Lys
            100                 105                 110


Val Ser Ile Met Ala Asp Ala Met Arg Arg Leu His Thr Leu Asp Pro
        115                 120                 125


Ala Thr Cys Pro Phe Asp His Gln Ala Lys His Arg Ile Glu Arg Ala
    130                 135                 140
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Arg Thr Arg Met Glu Ala Gly Leu Val Asp Gln Asp Asp Leu Asp Glu
145                 150                 155                 160


Glu His Gln Gly Leu Ala Pro Ala Glu Leu Phe Ala Arg Leu Lys Ala
                165                 170                 175


Ser Met Pro Asp Gly Glu Asp Leu Val Val Thr His Gly Asp Ala Cys
            180                 185                 190


Leu Pro Asn Ile Met Val Glu Asn Gly Arg Phe Ser Gly Phe Ile Asp
        195                 200                 205


Cys Gly Arg Leu Gly Val Ala Asp Arg Tyr Gln Asp Ile Ala Leu Ala
    210                 215                 220


Thr Arg Asp Ile Ala Glu Glu Leu Gly Gly Glu Trp Ala Asp Arg Phe
225                 230                 235                 240


Leu Val Leu Tyr Gly Ile Ala Ala Pro Asp Ser Gln Arg Ile Ala Phe
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Tyr Arg Leu Leu Asp Glu Phe Phe
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<210>  263
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<400>  263

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


Gly Cys Ser Asp Ala Ala Val Phe Arg Leu Ser Ala Gln Gly Arg Pro
        35                  40                  45
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Val Leu Phe Val Lys Thr Asp Leu Ser Gly Ala Leu Asn Glu Leu Gln
    50                  55                  60

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

Ala Ala Val Leu Asp Val Val Thr Glu Ala Gly Arg Asp Trp Leu Leu
                85                  90                  95

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

Ala Glu Lys Val Ser Ile Met Ala Asp Ala Met Arg Arg Leu His Thr
        115                 120                 125

Leu Asp Pro Ala Thr Cys Pro Phe Asp His Gln Ala Lys His Arg Ile
    130                 135                 140

Glu Arg Ala Arg Thr Arg Met Glu Ala Gly Leu Val Asp Gln Asp Asp
145                 150                 155                 160

Leu Asp Glu Glu His Gln Gly Leu Ala Pro Ala Glu Leu Phe Ala Arg
                165                 170                 175

Leu Lys Ala Arg Met Pro Asp Gly Asp Asp Leu Val Val Thr His Gly
            180                 185                 190

Asp Ala Cys Leu Pro Asn Ile Met Val Glu Asn Gly Arg Phe Ser Gly
        195                 200                 205

Phe Ile Asp Cys Gly Arg Leu Gly Val Ala Asp Arg Tyr Gln Asp Ile
    210                 215                 220

Ala Leu Ala Thr Arg Asp Ile Ala Glu Glu Leu Gly Gly Glu Trp Ala
225                 230                 235                 240

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

Ile Ala Phe Tyr Arg Leu Leu Asp Glu Phe Phe
            260                 265
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Glu Arg Leu Phe Gly Tyr Asp Trp Ala Gln Gln Thr Ile Gly Cys Ser
            20                  25                  30


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


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


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


Leu Asp Val Val Thr Glu Ala Gly Arg Asp Trp Leu Leu Leu Gly Glu
                85                  90                  95


Val Pro Gly Gln Asp Leu Leu Ser Ser His Leu Ala Pro Ala Glu Lys
            100                 105                 110


Val Ser Ile Met Ala Asp Ala Met Arg Arg Leu His Thr Leu Asp Pro
        115                 120                 125


Ala Thr Cys Pro Phe Asp His Gln Ala Lys His Arg Ile Glu Arg Ala
    130                 135                 140


Arg Thr Arg Met Glu Ala Gly Leu Val Asp Gln Asp Asp Leu Asp Glu
145                 150                 155                 160


Glu His Gln Gly Leu Ala Pro Ala Glu Leu Phe Ala Arg Leu Lys Ala
                165                 170                 175
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Arg Met Pro Asp Gly Glu Asp Leu Val Val Thr His Gly Asp Ala Cys
            180                 185                 190


Leu Pro Asn Ile Met Val Glu Asn Gly Arg Phe Ser Gly Phe Ile Asp
        195                 200                 205


Cys Gly Arg Leu Gly Val Ala Asp Arg Tyr Gln Asp Ile Ala Leu Ala
    210                 215                 220


Thr Arg Asp Ile Ala Glu Glu Leu Gly Gly Glu Trp Ala Asp Arg Phe
225                 230                 235                 240


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


Tyr Arg Leu Leu Asp Glu Phe Phe
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<210> 265
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```
Met Val Glu Gln Asp Gly Leu His Ala Gly Ser Pro Ala Ala Trp Val
1               5                   10                  15


Glu Arg Leu Phe Gly Tyr Asp Trp Ala Gln Gln Thr Ile Gly Cys Ser
            20                  25                  30


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


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


Ala Arg Leu Ser Trp Leu Ala Thr Thr Gly Val Pro Cys Ala Ala Val
65                  70                  75                  80
```

```
Leu Asp Val Val Thr Glu Ala Gly Arg Asp Trp Leu Leu Leu Gly Glu
                85                  90                  95

Val Pro Gly Gln Asp Leu Leu Ser Ser His Leu Ala Pro Ala Glu Lys
            100                 105                 110

Val Ser Ile Met Ala Asp Ala Met Arg Arg Leu His Thr Leu Asp Pro
        115                 120                 125

Ala Thr Cys Pro Phe Asp His Gln Ala Lys His Arg Ile Glu Arg Ala
    130                 135                 140

Arg Thr Arg Met Glu Ala Gly Leu Val Asp Gln Asp Asp Leu Asp Glu
145                 150                 155                 160

Glu His Gln Gly Leu Ala Pro Ala Glu Leu Phe Ala Arg Leu Lys Ala
                165                 170                 175

Arg Met Pro Asp Gly Glu Asp Leu Val Val Thr His Gly Asp Ala Cys
            180                 185                 190

Leu Pro Asn Ile Met Val Glu Asn Gly Arg Phe Ser Gly Phe Ile Asp
        195                 200                 205

Cys Gly Arg Leu Gly Val Ala Asp Arg Tyr Gln Asp Ile Ala Leu Ala
    210                 215                 220

Thr Arg Asp Ile Ala Glu Glu Leu Gly Gly Glu Trp Ala Asp Arg Phe
225                 230                 235                 240

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

Tyr Arg Leu Leu Asp Glu Phe Phe
            260
```

<210> 266
<211> 341
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 266

```
Met Asp Arg Ser Gly Lys Pro Glu Leu Thr Ala Thr Ser Val Glu Lys
1               5                  10                  15


Phe Leu Ile Glu Lys Phe Asp Ser Val Ser Asp Leu Met Gln Leu Ser
            20                  25                  30


Glu Gly Glu Glu Ser Arg Ala Phe Ser Phe Asp Val Gly Gly Arg Gly
        35                  40                  45


Tyr Val Leu Arg Val Asn Ser Cys Ala Asp Gly Phe Tyr Lys Asp Arg
    50                  55                  60


Tyr Val Tyr Arg His Phe Ala Ser Ala Ala Leu Pro Ile Pro Glu Val
65                  70                  75                  80


Leu Asp Ile Gly Glu Phe Ser Glu Ser Leu Thr Tyr Cys Ile Ser Arg
                85                  90                  95


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


Ala Val Leu Gln Pro Val Ala Glu Ala Met Asp Ala Ile Ala Ala Ala
        115                 120                 125


Asp Leu Ser Gln Thr Ser Gly Phe Gly Pro Phe Gly Pro Gln Gly Ile
    130                 135                 140


Gly Gln Tyr Thr Thr Trp Arg Asp Phe Ile Cys Ala Ile Ala Asp Pro
145                 150                 155                 160


His Val Tyr His Trp Gln Thr Val Met Asp Asp Thr Val Ser Ala Ser
                165                 170                 175


Val Ala Gln Ala Leu Asp Glu Leu Met Leu Trp Ala Glu Asp Cys Pro
            180                 185                 190
```

```
Glu Val Arg His Leu Val His Ala Asp Phe Gly Ser Asn Asn Val Leu
        195                 200                 205

Thr Asp Asn Gly Arg Ile Thr Ala Val Ile Asp Trp Ser Glu Ala Met
    210                 215                 220

Phe Gly Asp Ser Gln Tyr Glu Val Ala Asn Ile Phe Phe Trp Arg Pro
225                 230                 235                 240

Trp Leu Ala Cys Met Glu Gln Gln Thr Arg Tyr Phe Glu Arg Arg His
                245                 250                 255

Pro Glu Leu Ala Gly Ser Pro Arg Leu Arg Ala Tyr Met Leu Arg Ile
            260                 265                 270

Gly Leu Asp Gln Leu Tyr Gln Ser Leu Val Asp Gly Asn Phe Asp Asp
        275                 280                 285

Ala Ala Trp Ala Gln Gly Arg Cys Asp Ala Ile Val Arg Ser Gly Ala
    290                 295                 300

Gly Thr Val Gly Arg Thr Gln Ile Ala Arg Arg Ser Ala Ala Val Trp
305                 310                 315                 320

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

Ser Thr Arg Pro Arg
            340
```

<210> 267
<211> 341
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 267

```
Met Lys Lys Pro Glu Leu Thr Ala Thr Ser Val Glu Lys Phe Leu Ile
1               5                   10                  15
```

```
Glu Lys Phe Asp Ser Val Ser Asp Leu Met Gln Leu Ser Glu Gly Glu
            20                  25                  30

Glu Ser Arg Ala Phe Ser Phe Asp Val Gly Gly Arg Gly Tyr Val Leu
        35                  40                  45

Arg Val Asn Ser Cys Ala Asp Gly Phe Tyr Lys Asp Arg Tyr Val Tyr
    50                  55                  60

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

Gly Glu Phe Ser Glu Ser Leu Thr Tyr Cys Ile Ser Arg Arg Ala Gln
                85                  90                  95

Gly Val Thr Leu Gln Asp Leu Pro Glu Thr Glu Leu Pro Ala Val Leu
            100                 105                 110

Gln Pro Val Ala Glu Ala Met Asp Ala Ile Ala Ala Ala Asp Leu Ser
        115                 120                 125

Gln Thr Ser Gly Phe Gly Pro Phe Gly Pro Gln Gly Ile Gly Gln Tyr
    130                 135                 140

Thr Thr Trp Arg Asp Phe Ile Cys Ala Ile Ala Asp Pro His Val Tyr
145                 150                 155                 160

His Trp Gln Thr Val Met Asp Asp Thr Val Ser Ala Ser Val Ala Gln
                165                 170                 175

Ala Leu Asp Glu Leu Met Leu Trp Ala Glu Asp Cys Pro Glu Val Arg
            180                 185                 190

His Leu Val His Ala Asp Phe Gly Ser Asn Asn Val Leu Thr Asp Asn
        195                 200                 205

Gly Arg Ile Thr Ala Val Ile Asp Trp Ser Glu Ala Met Phe Gly Asp
    210                 215                 220

Ser Gln Tyr Glu Val Ala Asn Ile Phe Phe Trp Arg Pro Trp Leu Ala
225                 230                 235                 240
```

```
Cys Met Glu Gln Gln Thr Arg Tyr Phe Glu Arg Arg His Pro Glu Leu
                245                 250                 255


Ala Gly Ser Pro Arg Leu Arg Ala Tyr Met Leu Arg Ile Gly Leu Asp
            260                 265                 270


Gln Leu Tyr Gln Ser Leu Val Asp Gly Asn Phe Asp Asp Ala Ala Trp
        275                 280                 285


Ala Gln Gly Arg Cys Asp Ala Ile Val Arg Ser Gly Ala Gly Thr Val
    290                 295                 300


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


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


Pro Arg Ala Lys Glu
            340
```

<210> 268
<211> 199
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 268

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


Pro Arg Ala Val Arg Thr Leu Ala Ala Ala Phe Ala Asp Tyr Pro Ala
            20                  25                  30


Thr Arg His Thr Val Asp Pro Asp Arg His Ile Glu Arg Val Thr Arg
        35                  40                  45


Ala Ala Arg Thr Leu Pro His Ala Arg Arg Ala Arg His Arg Gln Gly
    50                  55                  60
```

```
Val Gly Arg Ala Thr Arg Arg Arg Gly Gly Gly Leu Asp His Ala Gly
65                  70                  75                  80


Glu Arg Arg Ser Gly Gly Gly Val Arg Arg Asp Arg Asn Ala His Gly
                85                  90                  95


Arg Val Glu Arg Phe Pro Ala Gly Arg Ala Ala Thr Asp Gly Arg Pro
            100                 105                 110


Pro Gly Ala Ala Pro Ala Gln Gly Ala Arg Val Val Pro Gly His Arg
        115                 120                 125


Arg Arg Leu Ala Arg Pro Pro Gly Gln Gly Ser Gly Gln Arg Arg Arg
    130                 135                 140


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


Gly Asp Leu Arg Ala Pro Gln Pro Pro Phe Tyr Glu Arg Leu Gly Phe
                165                 170                 175


Thr Val Thr Ala Asp Val Glu Cys Pro Lys Asp Arg Ala Thr Trp Cys
            180                 185                 190


Met Thr Arg Lys Pro Gly Ala
        195


<210>  269
<211>  199
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  269

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


Pro Arg Ala Val Arg Thr Leu Ala Ala Ala Phe Ala Asp Tyr Pro Ala
            20                  25                  30
```

```
Thr Arg His Thr Val Asp Pro Asp Arg His Ile Glu Arg Val Thr Glu
        35                  40                  45

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

Trp Val Ala Asp Asp Gly Ala Ala Val Ala Val Trp Thr Thr Pro Glu
65                  70                  75                  80

Ser Val Glu Ala Gly Ala Val Phe Ala Glu Ile Gly Pro Arg Met Ala
                85                  90                  95

Glu Leu Ser Gly Ser Arg Leu Ala Ala Gln Gln Gln Met Glu Gly Leu
            100                 105                 110

Leu Ala Pro His Arg Pro Lys Glu Pro Ala Trp Phe Leu Ala Thr Val
        115                 120                 125

Gly Val Ser Pro Asp His Gln Gly Lys Gly Leu Gly Ser Ala Val Val
    130                 135                 140

Leu Pro Gly Val Glu Ala Ala Glu Arg Ala Gly Val Pro Ala Phe Leu
145                 150                 155                 160

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

Thr Val Thr Ala Asp Val Glu Cys Pro Lys Asp Arg Ala Thr Trp Cys
            180                 185                 190

Met Thr Arg Lys Pro Gly Ala
        195
```

<210> 270
<211> 199
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 270

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

Pro Arg Ala Val Arg Thr Leu Ala Ala Ala Phe Ala Asp Tyr Pro Ala
20 25 30

Thr Arg His Thr Val Asp Pro Asp Arg His Ile Glu Arg Val Thr Glu
35 40 45

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

Trp Val Ala Asp Asp Gly Ala Ala Val Ala Val Trp Thr Thr Pro Glu
65 70 75 80

Ser Val Glu Ala Gly Ala Val Phe Ala Glu Ile Gly Pro Arg Met Ala
85 90 95

Glu Leu Ser Gly Ser Arg Leu Ala Ala Gln Gln Gln Met Glu Gly Leu
100 105 110

Leu Ala Pro His Arg Pro Lys Glu Pro Ala Trp Phe Leu Ala Thr Val
115 120 125

Gly Val Ser Pro Asp His Gln Gly Lys Gly Leu Gly Ser Ala Val Val
130 135 140

Leu Pro Gly Val Glu Ala Ala Glu Arg Ala Gly Val Pro Ala Phe Leu
145 150 155 160

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

Thr Val Thr Ala Asp Val Glu Val Pro Glu Gly Pro Arg Thr Trp Cys
180 185 190

Met Thr Arg Lys Pro Gly Ala
195

<210> 271
<211> 600
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 271
atgaccgagt acaagcccac ggtgcgcctc gccacccgcg acgacgtccc cagggccgta 60

cgcaccctcg ccgccgcgtt cgccgactac cccgccacgc gccacaccgt cgatccggac 120

cgccacatcg agcgggtcac cgagctgcaa gaactcttcc tcacgcgcgt cgggctcgat 180

ataggtaagg tatgggtggc ggacgacggc gccgcggtgg cggtctggac cacgccggag 240

agcgtcgaag cgggggcggt gttcgccgag atcggcccgc gcatggccga gttgagcggt 300

tcccggctgg ccgcgcagca acagatggaa ggcctcctgg cgccgcaccg gcccaaggag 360

cccgcgtggt tcctggccac cgtcggcgtg tcgcccgacc accagggcaa gggtctgggc 420

agcgccgtcg tgctccccgg agtggaggcg gccgagcgcg ccggggtgcc cgccttcctg 480

gagacatccg cgccccgcaa cctccccttc tacgagcggc tcggcttcac cgtcaccgcc 540

gacgtcgagg tgcccgaagg accgcgcacc tggtgcatga cccgcaagcc cggtgcctga 600

<210> 272
<211> 132
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 272

Met Ala Lys Pro Leu Ser Gln Glu Glu Ser Thr Leu Ile Glu Arg Ala
1   5   10   15

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

Ser Ala Ala Leu Ser Ser Asp Gly Arg Ile Phe Thr Gly Val Asn Val
        35   40   45

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

Ala Ala Ala Ala Ala Ala Gly Asn Leu Thr Cys Ile Val Ala Ile Gly
65 70 75 80

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

Leu Leu Asp Leu His Pro Gly Ile Lys Ala Ile Val Lys Asp Ser Asp
100 105 110

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

Val Trp Glu Gly
130

<210> 273
<211> 399
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 273
atggccaagc ctttgtctca agaagaatcc accctcattg aaagagcaac ggctacaatc 60

aacagcatcc ccatctctga agattacagc gtcgccagcg cagctctctc tagcgacggc 120

cgcatcttca ctggtgtcaa tgtatatcat tttactgggg gaccttgtgc agaactcgtg 180

gtgctgggca ctgctgctgc tgcggcagct ggcaacctga cttgtatcgt cgcgatcgga 240

aatgagaaca ggggcatctt gagcccctgc ggacggtgcc gacaggtgct tctcgatctg 300

catcctggga tcaaagccat agtgaaggac agtgatggac agccgacggc agttgggatt 360

cgtgaattgc tgccctctgg ttatgtgtgg gagggctaa 399

<210> 274
<211> 373
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 274

```
Met Ala Thr Ser Ala Ser Ser His Leu Asn Lys Asn Ile Lys Gln Met
1               5                  10                  15

Tyr Leu Cys Leu Pro Gln Gly Glu Lys Val Gln Ala Met Tyr Ile Trp
            20                  25                  30

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

Cys Glu Pro Lys Cys Val Glu Glu Leu Pro Glu Trp Asn Phe Asp Gly
    50                  55                  60

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

Pro Val Ala Met Phe Arg Asp Pro Phe Arg Arg Asp Pro Asn Lys Leu
                85                  90                  95

Val Phe Cys Glu Val Phe Lys Tyr Asn Arg Lys Pro Ala Glu Thr Asn
            100                 105                 110

Leu Arg His Ser Cys Lys Arg Ile Met Asp Met Val Ser Asn Gln His
        115                 120                 125

Pro Trp Phe Gly Met Glu Gln Glu Tyr Thr Leu Met Gly Thr Asp Gly
    130                 135                 140

His Pro Phe Gly Trp Pro Ser Asn Gly Phe Pro Gly Pro Gln Gly Pro
145                 150                 155                 160

Tyr Tyr Cys Gly Val Gly Ala Asp Lys Ala Tyr Gly Arg Asp Ile Val
                165                 170                 175

Glu Ala His Tyr Arg Ala Cys Leu Tyr Ala Gly Val Lys Ile Thr Gly
            180                 185                 190

Thr Asn Ala Glu Val Met Pro Ala Gln Trp Glu Phe Gln Ile Gly Pro
        195                 200                 205
```

```
Cys Glu Gly Ile Arg Met Gly Asp His Leu Trp Val Ala Arg Phe Ile
    210                 215                 220

Leu His Arg Val Cys Glu Asp Phe Gly Val Ile Ala Thr Phe Asp Pro
225                 230                 235                 240

Lys Pro Ile Pro Gly Asn Trp Asn Gly Ala Gly Cys His Thr Asn Phe
                245                 250                 255

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

Ala Ile Glu Lys Leu Ser Lys Arg His Arg Tyr His Ile Arg Ala Tyr
        275                 280                 285

Asp Pro Lys Gly Gly Leu Asp Asn Ala Arg Arg Leu Thr Gly Phe His
    290                 295                 300

Glu Thr Ser Asn Ile Asn Asp Phe Ser Ala Gly Val Ala Asn Arg Ser
305                 310                 315                 320

Ala Ser Ile Arg Ile Pro Arg Thr Val Gly Gln Glu Lys Lys Gly Tyr
                325                 330                 335

Phe Glu Asp Arg Arg Pro Ser Ala Asn Cys Asp Pro Phe Ala Val Thr
            340                 345                 350

Glu Ala Ile Val Arg Thr Cys Leu Leu Asn Glu Thr Gly Asp Glu Pro
        355                 360                 365

Phe Gln Tyr Lys Asn
    370
```

<210> 275
<211> 373
<212> PRT
<213> Artificial sequence

<220>
<223> Synthetic

<400> 275

```
Met Ala Thr Ser Ala Ser Ser His Leu Asn Lys Gly Ile Lys Gln Met
1               5                   10                  15

Tyr Met Asn Leu Pro Gln Gly Glu Lys Ile Gln Leu Met Tyr Ile Trp
            20                  25                  30

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

Cys Asp Pro Lys Cys Val Glu Glu Leu Pro Glu Trp Asn Phe Asp Gly
    50                  55                  60

Ser Ser Thr Phe Gln Ser Glu Gly Ser Asn Ser Asp Met Tyr Leu His
65                  70                  75                  80

Pro Val Ala Met Phe Arg Asp Pro Phe Arg Arg Asp Pro Asn Lys Leu
                85                  90                  95

Val Phe Cys Glu Val Phe Lys Tyr Asn Arg Lys Pro Ala Glu Thr Asn
            100                 105                 110

Leu Arg His Ser Cys Lys Arg Ile Met Asp Met Val Ser Ser Gln His
        115                 120                 125

Pro Trp Phe Gly Met Glu Gln Glu Tyr Thr Leu Met Gly Thr Asp Gly
    130                 135                 140

His Pro Phe Gly Trp Pro Ser Asn Gly Phe Pro Gly Pro Gln Gly Pro
145                 150                 155                 160

Tyr Tyr Cys Gly Val Gly Ala Asp Lys Ala Tyr Gly Arg Asp Ile Val
                165                 170                 175

Glu Ala His Tyr Arg Ala Cys Leu Tyr Ala Gly Ile Lys Ile Thr Gly
            180                 185                 190

Thr Asn Ala Glu Val Met Pro Ala Gln Trp Glu Phe Gln Ile Gly Pro
        195                 200                 205

Cys Glu Gly Ile Arg Met Gly Asp His Leu Trp Val Ala Arg Phe Ile
    210                 215                 220
```

```
Leu His Arg Val Cys Glu Asp Phe Gly Val Ile Ala Thr Phe Asp Pro
225                 230                 235                 240


Lys Pro Ile Pro Gly Asn Trp Asn Gly Ala Gly Cys His Thr Asn Phe
                245                 250                 255


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


Ala Ile Asp Lys Leu Ser Lys Arg His Gln Tyr His Ile Arg Ala Tyr
        275                 280                 285


Asp Pro Lys Gly Gly Leu Asp Asn Ala Arg Arg Leu Thr Gly Phe His
    290                 295                 300


Glu Thr Ser Asn Ile Asn Asp Phe Ser Ala Gly Val Ala Asn Arg Ser
305                 310                 315                 320


Ala Ser Ile Arg Ile Pro Arg Ile Val Gly Gln Glu Lys Lys Gly Tyr
                325                 330                 335


Phe Glu Asp Arg Arg Pro Ser Ala Asn Cys Asp Pro Tyr Ala Val Thr
            340                 345                 350


Glu Ala Ile Val Arg Thr Cys Leu Leu Asn Glu Thr Gly Asp Glu Pro
        355                 360                 365


Phe Gln Tyr Lys Asn
    370


<210>  276
<211>  373
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  276

Met Ala Thr Ser Ala Ser Ser His Leu Asn Lys Gly Ile Lys Gln Met
1               5                   10                  15
```

```
Tyr Met Ser Leu Pro Gln Gly Glu Lys Ile Gln Ala Met Tyr Ile Trp
            20                  25                  30

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

Cys Asp Pro Lys Cys Val Glu Glu Leu Pro Glu Trp Asn Phe Asp Gly
    50                  55                  60

Ser Ser Thr Phe Gln Ser Glu Gly Ser Asn Ser Asp Met Tyr Leu His
65                  70                  75                  80

Pro Val Ala Met Phe Arg Asp Pro Phe Arg Lys Asp Pro Asn Lys Leu
                85                  90                  95

Val Leu Cys Glu Val Phe Lys Tyr Asn Arg Lys Pro Ala Glu Thr Asn
            100                 105                 110

Leu Arg His Ile Cys Lys Arg Ile Met Asp Met Val Ser Asn Gln His
        115                 120                 125

Pro Trp Phe Gly Met Glu Gln Glu Tyr Thr Leu Met Gly Thr Asp Gly
    130                 135                 140

His Pro Phe Gly Trp Pro Ser Asn Gly Phe Pro Gly Pro Gln Gly Pro
145                 150                 155                 160

Tyr Tyr Cys Gly Val Gly Ala Asp Lys Ala Tyr Gly Arg Asp Ile Val
                165                 170                 175

Glu Ala His Tyr Arg Ala Cys Leu Tyr Ala Gly Val Lys Ile Thr Gly
            180                 185                 190

Thr Asn Ala Glu Val Met Pro Ala Gln Trp Glu Phe Gln Ile Gly Pro
        195                 200                 205

Cys Glu Gly Ile Arg Met Gly Asp His Leu Trp Ile Ala Arg Phe Ile
    210                 215                 220
```

```
Leu His Arg Val Cys Glu Asp Phe Gly Val Ile Ala Thr Phe Asp Pro
225                 230                 235                 240


Lys Pro Ile Pro Gly Asn Trp Asn Gly Ala Gly Cys His Thr Asn Phe
                245                 250                 255


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


Ala Ile Asp Lys Leu Ser Lys Arg His Gln Tyr His Ile Arg Ala Tyr
        275                 280                 285


Asp Pro Lys Gly Gly Leu Asp Asn Ala Arg Arg Leu Thr Gly Phe His
    290                 295                 300


Glu Thr Ser Asn Ile Asn Asp Phe Ser Ala Gly Val Ala Asn Arg Ser
305                 310                 315                 320


Ala Ser Ile Arg Ile Pro Arg Thr Val Gly Gln Glu Lys Lys Gly Tyr
                325                 330                 335


Phe Glu Asp Arg Arg Pro Ser Ala Asn Cys Asp Pro Tyr Ala Val Thr
            340                 345                 350


Glu Ala Ile Val Arg Thr Cys Leu Leu Asn Glu Thr Gly Asp Glu Pro
        355                 360                 365


Phe Gln Tyr Lys Asn
    370


<210>  277
<211>  373
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  277

Met Ala Thr Ser Ala Ser Ser His Leu Asn Lys Asn Ile Lys Gln Met
1               5                   10                  15
```

```
Tyr Leu Cys Leu Pro Gln Gly Glu Lys Val Gln Ala Met Tyr Ile Trp
            20                  25                  30

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

Cys Glu Pro Lys Cys Val Glu Glu Leu Pro Glu Trp Asn Phe Asp Gly
    50                  55                  60

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

Pro Val Ala Met Phe Arg Asp Pro Phe Arg Arg Glu Pro Asn Lys Leu
                85                  90                  95

Val Phe Cys Glu Val Phe Lys Tyr Asn Arg Lys Pro Ala Glu Thr Asn
            100                 105                 110

Leu Arg His Ser Cys Lys Arg Ile Met Asp Met Val Ser Asn Gln His
        115                 120                 125

Pro Trp Phe Gly Met Glu Gln Glu Tyr Thr Leu Met Gly Thr Asp Gly
    130                 135                 140

His Pro Phe Gly Trp Pro Ser Asn Gly Phe Pro Gly Pro Gln Gly Pro
145                 150                 155                 160

Tyr Tyr Cys Gly Val Gly Ala Asp Lys Ala Tyr Gly Arg Asp Ile Val
                165                 170                 175

Glu Ala His Tyr Arg Ala Cys Leu Tyr Ala Gly Val Lys Ile Thr Gly
            180                 185                 190

Thr Asn Ala Glu Val Met Pro Ala Gln Trp Glu Phe Gln Ile Gly Pro
        195                 200                 205

Cys Glu Gly Ile His Met Gly Asp His Leu Trp Val Ala Arg Phe Ile
    210                 215                 220

Leu His Arg Val Cys Glu Asp Phe Gly Val Ile Ala Thr Phe Asp Pro
225                 230                 235                 240
```

```
Lys Pro Ile Pro Gly Asn Trp Asn Gly Ala Gly Cys His Thr Asn Phe
                245                 250                 255


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


Ala Ile Glu Lys Leu Ser Lys Arg His Gln Tyr His Ile Arg Ala Tyr
        275                 280                 285


Asp Pro Lys Gly Gly Leu Asp Asn Ala Arg Arg Leu Thr Gly Phe His
    290                 295                 300


Glu Thr Ser Asn Ile Asn Asp Phe Ser Ala Gly Val Ala Asn Arg Ser
305                 310                 315                 320


Ala Ser Ile Arg Ile Pro Arg Thr Val Gly Gln Glu Lys Lys Gly Tyr
                325                 330                 335


Phe Glu Asp Arg Arg Pro Ser Ala Asn Cys Asp Pro Phe Ala Val Thr
            340                 345                 350


Glu Ala Ile Val Arg Thr Cys Leu Leu Asn Glu Thr Gly Asp Glu Pro
        355                 360                 365


Phe Gln Tyr Lys Asn
    370


<210>  278
<211>  394
<212>  PRT
<213>  Artificial sequence

<220>
<223>  Synthetic

<400>  278

Met Ala Thr Ser Ala Ser Ser His Leu Asn Lys Asn Ile Lys Gln Met
1               5                   10                  15


Tyr Leu Cys Leu Pro Gln Gly Glu Lys Val Gln Ala Met Tyr Ile Trp
            20                  25                  30
```

```
Val Asp Gly Thr Gly Glu Gly Leu Arg Cys Lys Thr Arg Thr Leu Asp
        35                  40                  45

Cys Glu Pro Lys Cys Val Glu Glu Leu Pro Glu Trp Asn Phe Asp Gly
    50                  55                  60

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

Pro Val Ala Met Phe Arg Asp Pro Phe Arg Arg Glu Pro Asn Lys Leu
                85                  90                  95

Val Phe Cys Glu Val Phe Lys Tyr Asn Arg Lys Pro Ala Glu Thr Asn
            100                 105                 110

Leu Arg His Ser Cys Lys Arg Ile Met Asp Met Val Ser Asn Gln His
        115                 120                 125

Pro Trp Phe Gly Met Glu Gln Glu Tyr Thr Leu Met Gly Thr Asp Gly
    130                 135                 140

His Pro Phe Gly Trp Pro Ser Asn Gly Phe Pro Gly Pro Gln Gly Pro
145                 150                 155                 160

Tyr Tyr Cys Gly Val Gly Ala Asp Lys Ala Tyr Gly Arg Asp Ile Val
                165                 170                 175

Glu Ala His Tyr Arg Ala Cys Leu Tyr Ala Gly Val Lys Ile Thr Gly
            180                 185                 190

Thr Asn Ala Glu Val Met Pro Ala Gln Trp Glu Phe Gln Ile Gly Pro
        195                 200                 205

Cys Glu Gly Ile His Met Gly Asp His Leu Trp Val Ala Arg Phe Ile
    210                 215                 220

Leu His Arg Val Cys Glu Asp Phe Gly Val Ile Ala Thr Phe Asp Pro
225                 230                 235                 240
```

```
Lys Pro Ile Pro Gly Asn Trp Asn Gly Ala Gly Cys His Thr Asn Phe
                245                 250                 255

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

Ala Ile Glu Lys Leu Ser Lys Arg His Gln Tyr His Ile Arg Ala Tyr
        275                 280                 285

Asp Pro Lys Gly Gly Leu Asp Asn Ala Arg Arg Leu Thr Gly Phe His
    290                 295                 300

Glu Thr Ser Asn Ile Asn Asp Phe Ser Ala Gly Val Ala Asn Arg Ser
305                 310                 315                 320

Ala Ser Ile Arg Ile Pro Arg Thr Val Gly Gln Glu Lys Lys Gly Tyr
                325                 330                 335

Phe Glu Asp Arg Arg Pro Ser Ala Asn Cys Asp Pro Phe Ala Val Thr
            340                 345                 350

Glu Ala Ile Val Arg Thr Cys Leu Leu Asn Glu Thr Gly Asp Glu Pro
        355                 360                 365

Phe Gln Tyr Lys Asn Trp Ile Arg Ser Asp Met Ile Arg Tyr Ile Asp
    370                 375                 380

Glu Phe Gly Gln Thr Thr Thr Arg Met Gln
385                 390
```

<210> 279
<211> 1122
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 279
atggccacct cagcaagttc ccacttgaac aaaaacatca agcaaatgta cttgtgcctg 60

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cgctgcaaaa cccgcaccct ggactgtgag cccaagtgtg tagaagagtt acctgagtgg 180

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<400> 280
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<212> DNA
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<220>
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<400> 283
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 284
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<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 286
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<400> 287
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<220>
<223> Synthetic

<400> 290
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<211> 1321
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 291
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<210> 292
<211> 1899
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 292
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<210> 293
<211> 1049
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<220>
<223> Synthetic

<400> 293
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tacaaatgtg gtaggcgcgc cgaagacaa 1049

<210> 294
<211> 1472

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 294
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agtaaaacct ctacaaatgt ggtagaagac aa 1472

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<211> 1310
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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cgccgcaatt caaacttcgt gaggctccgg tgcccgtcag tggaagacta 1310

<210> 296
<211> 1266
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 296
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<210> 297
<211> 1371
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 297
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<210> 298
<211> 977
<212> DNA
<213> Artificial sequence

<220>
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<400> 298
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<210> 299
<211> 1796
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 299
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cccatggctg actaattttt tttatttatg cagaggccga ggccgcctcg gcctctgagc 180

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<400> 359
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aactgatgaa tgggagcagt ggtggaatgc ctttaatgag gaaaacctgt tttgctcaga 1680

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gggggatatt atgaagggcc ttgagcatct ggattctgcc taataaaaaa catttatttt 1860

cattgcaatg atgtatttaa attatttctg aatattttac taaaaaggga atgtgggagg 1920

tcagtgcatt taaaacataa agaaa 1945

<210> 371
<211> 1136
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 371
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tgctcaaggc ccttcataat atcccccagt ttagtagttg gacttaggga acaaaggaac 180

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ggaggagtag aaggtggcgc gaaggggcca ccaaagaacg gagccggttg gcgcctaccg 960

gtggatgtgg aatgtgtgcg aggccagagg ccacttgtgt agcgccaagt gcccagcggg 1020

gctgctaaag cgcatgctcc agactgcctt gggaaaagcg cctcccctac ccggtagaga 1080

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<212> DNA
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<220>
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aatggttaca aataaagcaa tagcatcaca aatttcacaa ataaagcatt tttttcactg 180

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caacgggcca cggggatgaa gcagctggaa gacta 1055

<210> 373
<211> 868
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 373
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aatggttaca aataaagcaa tagcatcaca aatttcacaa ataaagcatt tttttcactg 180

cattctagtt gtggtttgtc caaactcatc aatgtatctt atcatgtctg agcggatcca 240

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tccatcactg tccttcacta tggctttgat cccaggatgc agatcgagaa gcacctgtcg 360

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caggttgcca gctgccgcag cagcagcagt gcccagcacc acgagttctg cacaaggtcc 480

cccagtaaaa tgatatacat tgacaccagt gaagatgcgg ccgtcgctag agagagctgc 540

gctggcgacg ctgtaatctt cagagatggg gatgctgttg attgtagccg ttgctctttc 600

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ccacggggat gaagcagctg gaagacta 868

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<211> 1307
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<213> Artificial sequence

<220>
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<400> 374
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atccaccggt aggcgccaac cggctccgtt ctttggtggc cccttcgcgc caccttctac 180

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caagacaggc ttgcgagata tgtttgagaa taccacttta tcccgcgtca gggagaggca 540

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gcgacggccg catcttcact ggtgtcaatg tatatcattt tactgggggga ccttgtgcag 840

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acatgataag atacattgat gagtttggac aaaccacaac tagaatgcag tgaaaaaaat 1140

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aacaagttaa caacaacaat tgcattcatt ttatgtttca ggttcagggg gaggtgtggg 1260

aggtttttta aagcaagtaa aacctctaca atgtggtag aagacaa 1307

<210> 375
<211> 1200
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<220>
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<400> 375
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atattcagaa ataatttaaa tacatcattg caatgaaaat aaatgttttt tattaggcag 120

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tgacaccagt gaagatgcgg ccgtcgctag agagagctgc gctggcgacg ctgtaatctt 540

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<211> 1145
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 376
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attcagaaat aatttaaata catcattgca atgaaaataa atgtttttta ttaggcagaa 120

tccagatgct caaggccctt cataatatcc cccagtttag tagttggact tagggaacaa 180

aggaaccttt aatagaaatt ggacagcaag aaagcgagtt agccctccca cacataacca 240

gagggcagca attcacgaat cccaactgcc gtcggctgtc catcactgtc cttcactatg 300

gctttgatcc caggatgcag atcgagaagc acctgtcggc accgtccgca ggggctcaag 360

atgcccctgt tctcatttcc gatcgcgacg atacaagtca ggttgccagc tgccgcagca 420

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<211> 812
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 377
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cagaagtagt gaggaggctt ttttggaggt ataggctttt gcaaaatggc caagcctttg 180

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tctggttatg tgtgggaggg ctaatggatc cgctcagaca tgataagata cattgatgag 600

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gctattgctt tatttgtaac cattataagc tgcaataaac aagttaacaa caacaattgc 720

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<210> 378
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<212> DNA
<213> Artificial sequence

<220>
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<400> 378
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<210> 379
<211> 1827
<212> DNA
<213> Artificial sequence

<220>
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<400> 379
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<211> 1680
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<223> Synthetic

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<400> 383
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<213> Artificial sequence

<220>
<223> Synthetic

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<213> Artificial sequence

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<400> 386
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<212> DNA
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<220>
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<220>
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<400> 428
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<220>
<223> Synthetic

<400> 429
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aaaagaccgg gactcgggtt gccgtcgggt gttcacccgc gcggttcaca gaccgcacat 420

ccccaggctg agc 433

<210> 439
<211> 65

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 439
agaggggcgg aagggacgtt aggagggagg cagggaggca gggaggcagg gaggaacgga 60

gggag 65

<210> 440
<211> 1213
<212> DNA
<213> Artificial sequence

<220>
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<400> 440
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cgctaggggg cagcagcgag ccgcccgggg ctccgctccg gtccggcgct ccccccgcat 120

ccccgagccg gcagcgtgcg gggacagccc gggcacgggg aaggtggcac gggatcgctt 180

tcctctgaac gcttctcgct gctctttgag cctgcagaca cctgggggga tacggggaaa 240

aagctttagg ctgaaagaga gatttagaat gacagaatca tagaacggcc tgggttgcaa 300

aggagcacag tgctcatcca gatccaaccc cctgctatgt gcagggtcat caaccagcag 360

cccaggctgc ccagagccac atccagcctg gccttgaatg cctgcaggga tggggcatcc 420

acagcctcct tgggcaacct gttcagtgcg tcaccaccct ctgggggaaa aactgcctcc 480

tcatatccaa cccaaacctc ccctgtctca gtgtaaagcc attccccctt gtcctatcaa 540

gggggagttt gctgtgacat tgttggtctg gggtgacaca tgtttgccaa ttcagtgcat 600

cacggagagg cagatcttgg ggataaggaa gtgcaggaca gcatggacgt gggacatgct 660

ggtgttgagg gctctgggac actctccaag tcacagcgtt cagaacagcc ttaaggataa 720

gaagatagga tagaaggaca aagagcaagt taaaacccag catggagagg agcacaaaaa 780

ggccacagac actgctggtc cctgtgtctg agcctgcatg tttgatggtg tctggatgca 840

agcagaaggg gtggaagtgc ttgcctggag agatacagct gggtcagtag gactgggaca 900

ggcagctgga gaattgccat gtagatgttc atacaatcgt caaatcatga aggctggaaa 960

agccctccaa gatccccaag accaacccca acccacccac cgtgcccact ggccatgtcc 1020

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gtgggcagct gtgccactgc agcaccgctc tttggagaag gtaaatcttg ctaaatccag 1140

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cagtgagaat att 1213

<210> 441
<211> 246
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 441
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cgctaggggg cagcagcgag ccgcccgggg ctccgctccg gtccggcgct ccccccgcat 120

ccccgagccg gcagcgtgcg gggacagccc gggcacgggg aaggtggcac gggatcgctt 180

tcctctgaac gcttctcgct gctctttgag cctgcagaca cctgggggga tacggggaaa 240

aagctt 246

<210> 442
<211> 1536
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 442
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gccttttaat atttctctaa tttagtgtat atgcaatgat agttctctga tttctgagat 120

tgagtttctc atgtgtaatg attatttaga gtttctcttt catctgttca aatttttgtc 180

tagttttatt ttttactgat ttgtaagact tctttttata atctgcatat tacaattctc 240

tttactgggg tgttgcaaat attttctgtc attctatggc ctgacttttc ttaatggttt 300

tttaatttta aaaataagtc ttaatattca tgcaatctaa ttaacaatct tttctttgtg 360

gttaggactt tgagtcataa gaaatttttc tctacactga agtcatgatg gcatgcttct 420

atattatttt ctaaaagatt taaagttttg ccttctccat ttagacttat aattcactgg 480

aatttttttg tgtgtatggt atgacatatg ggttcccttt tatttttttac atataaatat 540

atttccctgt ttttctaaaa aagaaaaaga tcatcatttt cccattgtaa aatgccatat 600

ttttttcata ggtcacttac atatatcaat gggtctgttt ctgagctcta ctctatttta 660

tcagcctcac tgtctatccc cacacatctc atgctttgct ctaaatcttg atatttagtg 720

gaacattctt tcccattttg ttctacaaga atatttttgt tattgtcttt gggctttcta 780

tatacatttt gaaatgaggt tgacaagtta ataacaggcc tattgattgg aaagtttgtc 840

aacgaattgt gggtcttttg gggtttgctg ccccttttac gcaatgtgga tatcctgctt 900

taatgccttt atatgcatgt atacaagcaa aacaggcttt tactttctcg ccaacttaca 960

aggcctttct cagtaaacag tatatgaccc tttaccccgt tgctcggcaa cggcctggtc 1020

tgtgccaagt gtttgctgac gcaaccccca ctggttgggg cttggccata ggccatcagc 1080

gcatgcgtgg aacctttgtg tctcctctgc cgatccatac tgcggaactc ctagccgctt 1140

gttttgctcg cagcaggtct ggagcaaacc tcatcgggac cgacaattct gtcgtactct 1200

cccgcaagta tacatcgttt ccatggctgc taggctgtgc tgccaactgg atcctgcgcg 1260

ggacgtcctt tgtttacgtc ccgtcggcgc tgaatcccgc ggacgacccc tcccggggcc 1320

gcttggggct ctaccgcccg cttctccgtc tgccgtaccg tccgaccacg gggcgcacct 1380

ctctttacgc ggactccccg tctgtgcctt ctcatctgcc ggaccgtgtg cacttcgctt 1440

cacctctgca cgtcgcatgg aggccaccgt gaacgcccac cggaacctgc ccaaggtctt 1500

gcataagagg actcttggac tttcagcaat gtcatc 1536

<210> 443
<211> 726
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 443
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ccccttttac gcaatgtgga tatcctgctt taatgccttt atatgcatgt atacaagcaa 120

aacaggcttt tactttctcg ccaacttaca aggcctttct cagtaaacag tatatgaccc 180

tttaccccgt tgctcggcaa cggcctggtc tgtgccaagt gtttgctgac gcaaccccca 240

ctggttgggg cttggccata ggccatcagc gcatgcgtgg aacctttgtg tctcctctgc 300

cgatccatac tgcggaactc ctagccgctt gttttgctcg cagctggact ggagcaaacc 360

tcatcgggac cgacaattct gtcgtactct cccgcaagta tacatcgttt ccatggctgc 420

taggctgtgc tgccaactgg atcctgcgcg ggacgtcctt tgtttacgtc ccgtcggcgc 480

tgaatcccgc ggacgacccc tcccggggcc gcttggggct ctaccgcccg cttctccgtc 540

tgccgtaccg tccgaccacg gggcgcacct ctctttacgc ggactccccg tctgtgcctt 600

ctcatctgcc ggaccgtgtg cacttcgctt cacctctgca cgtcgcatgg aggccaccgt 660

gaacgcccac cggaacttgc ccaaggtctt gcataagagg actcttggac tttcagcaat 720

gtcatc 726

<210> 444
<211> 726
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 444
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ccccttttac gcaatgtgga tatcctgctt taatgccttt atatgcatgt atacaagcaa 120

aacaggcttt tactttctcg ccaacttaca aggcctttct cagtaaacag tatatgaccc 180

tttaccccgt tgctcggcaa cggcctggtc tgtgccaagt gtttgctgac gcaaccccca 240

ctggttgggg cttggccata ggccatcagc gcatgcgtgg aacctttgtg tctcctctgc 300

cgatccatac tgcggaactc ctagccgctt gttttgctcg cagcaggtct ggagcaaacc 360

tcatcgggac cgacaattct gtcgtactct cccgcaagta tacatcgttt ccatggctgc 420

taggctgtgc tgccaactgg atcctgcgcg ggacgtcctt tgtttacgtc ccgtcggcgc 480

tgaatcccgc ggacgacccc tcccggggcc gcttggggct ctaccgcccg cttctccgtc 540

tgccgtaccg tccgaccacg gggcgcacct ctctttacgc ggactccccg tctgtgcctt 600

ctcatctgcc ggaccgtgtg cacttcgctt cacctctgca cgtcgcatgg aggccaccgt 660

gaacgcccac cggaacctgc ccaaggtctt gcataagagg actcttggac tttcagcaat 720

gtcatc 726

<210> 445
<211> 810
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 445
ctgttctcat cacatcatat caaggttata taccatcaat attgccacag atgttactta 60

gccttttaat atttctctaa tttagtgtat atgcaatgat agttctctga tttctgagat 120

tgagtttctc atgtgtaatg attatttaga gtttctcttt catctgttca aatttttgtc 180

tagttttatt ttttactgat ttgtaagact tcttttttata atctgcatat tacaattctc 240

tttactgggg tgttgcaaat attttctgtc attctatggc ctgacttttc ttaatggttt 300

tttaatttta aaaataagtc ttaatattca tgcaatctaa ttaacaatct tttctttgtg 360

gttaggactt tgagtcataa gaaatttttc tctacactga agtcatgatg gcatgcttct 420

atattatttt ctaaaagatt taaagttttg ccttctccat ttagacttat aattcactgg 480

aatttttttg tgtgtatggt atgacatatg ggttcccttt tatttttttac atataaatat 540

atttccctgt ttttctaaaa aagaaaaaga tcatcatttt cccattgtaa aatgccatat 600

ttttttcata ggtcacttac atatatcaat gggtctgttt ctgagctcta ctctatttta 660

tcagcctcac tgtctatccc cacacatctc atgctttgct ctaaatcttg atatttagtg 720

gaacattctt tcccattttg ttctacaaga atatttttgt tattgtcttt gggctttcta 780

tatacatttt gaaatgaggt tgacaagtta 810

<210> 446
<211> 155
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 446
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taattcactg gaatttttttt gtgtgtatgg tatgacatat gggttccctt ttatttttta 120

catataaata tatttccctg tttttctaaa aaaga 155

<210> 447
<211> 300
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 447
ggttcccttt tatttttac atataaatat atttccctgt ttttctaaaa aagaaaaaga 60

tcatcatttt cccattgtaa aatgccatat ttttttcata ggtcacttac atatatcaat 120

gggtctgttt ctgagctcta ctctatttta tcagcctcac tgtctatccc cacacatctc 180

atgctttgct ctaaatcttg atatttagtg gaacattctt tcccattttg ttctacaaga 240

atatttttgt tattgtcttt gggctttcta tatacatttt gaaatgaggt tgacaagtta 300

<210> 448
<211> 1454
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 448
aagctttaga ctctgggtag aatgttctgt ttcctgtaat ataaaatcat aaagtgatga 60

tattatcaag tgaaaaggaa atgtggtacc ttaatctttc cacatcaagc caatatcatg 120

ctgaaggcca gagaatcttt tttgctaaaa aacacaatac agatataatt aatagttatc 180

atttatgttt gatattaatc atatgaatat aattaatatg ttttattgta tcgattattg 240

ttgatattaa tgtaattact actaatacat aacaaatata actaatggtt atggctcagt 300

aactaaggta agatataagc tacactggta aagaaagatc aatattgctt cagagtacac 360

tgaagtaaat gaataactta accggtctag gttgtcactt atatttatac aacattttaa 420

gaactaagaa cctctcttct atgcttagta gatgaacaaa atcatgtaat agatgaatga 480

ggccaggaag tacaaaggtt tacaaaattg ccaagccact ctggggtgat tttatgagta 540

atgcggcatt tggtagcttg ccttaaagaa tattattgga cattatcaag tgtgtgtgtg 600

tgtgtgtgtg tgtgtgtgtg tgtgtgtaac tgaactctct tgtagtttca tttttgtttg 660

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ctctcaggtt ctggggttcc tggcatgcag cacccaagcc cagctacctc tgtgaaaact 780

ataacttagt aatcagatcc tggaccattt aaagaatata tatatatgta tgtgtgtgtg 840

tgtgtatata tataatatat acatatgtat gtatatatac atatatatgt atgtgtatat 900

atgtatgtat agagaggctg actatatata tatatatata tatgaggctg aatatatata 960

tatatatgaa tacacataca catagtgcca tggcacattc ctttaatctg agctctcagg 1020

caaaggcaga ccaatctctg agttgttcaa ggccagtgtg atccatagtc tcagaaatta 1080

tatactgaga cactcctgag gatgttatca catttctagt ttccttatct tactttagga 1140

catgattcca aaaaaaaggg gggggggaca cacagtcaat ggtagagtta caagactatg 1200

ccgatgtggt gactcaagaa gagagggctg agggagctga aacaggcatg ttcccatgaa 1260

ttccgggcaa gcctaggcta tagagtgaga ccaccatgat ttaaaaaaaa aaaaaaagtg 1320

gcacgcgaga aagtcaacaa tgctttgcat aagtgtttta cctcaaaatc gctgaatagt 1380

tgactagaac aaattaaaac cttgtccaaa gtcaaggcca gtgggatcag ggactccctc 1440

cagtcctgaa gctt 1454

<210> 449
<211> 1260
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 449
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caagtgaaaa ggaaatgtgg taccttaatc tttccacatc aagccaatat catgctgaag 120

gccagagaat ctttttttgct aaaaaaacaca atacagatat aattaatagt tatcatttat 180

gtttgatatt aatcatatga atataattaa tatgttttat tgtatcgatt attgttgata 240

ttaatgtaat tactactaat acataacaaa tataactaat ggttatggct cagtaactaa 300

ggtaagatat aagctacact ggtaaagaaa gatcaatatt gcttcagagt acactgaagt 360

aaatgaataa cttaaccggt ctaggttgtc acttatattt atacaacatt ttaagaacta 420

agaacctctc ttctatgctt agtagatgaa caaaatcatg taatagatga atgaggccag 480

gaagtacaaa ggtttacaaa attgccaagc cactctgggg tgattttatg agtaatgcgg 540

catttggtag cttgccttaa agaatattat tggacattat caagtgtgtg tgtgtgtgtg 600

tgtgtgtgtg tgtgtgtgtg taactgaact ctcttgtagt ttcatttttg tttgaaaaag 660

acatgtatct catgtagccc aggctggaat caaactctat ccttctgtct ccacctctca 720

ggttctgggg ttcctggcat gcagcaccca agcccagcta cctctgtgaa aactataact 780

tagtaatcag atcctggacc atttaaagaa tatatatata tgtatgtgtg tgtgtgtgta 840

tatatataat atatacatat gtatgtatat atacatatat atgtatgtgt atatatgtat 900

gtatagagag gctgactata tatatatata tatatatgag gctgaatata tatatatata 960

tgaatacaca tacacatagt gccatggcac attcctttaa tctgagctct caggcaaagg 1020

cagaccaatc tctgagttgt tcaaggccag tgtgatccat agtctcagaa attatatact 1080

gagacactcc tgaggatgtt atcacatttc tagtttcctt atcttacttt aggacatgat 1140

tccaaaaaaa agggggggg gacacacagt caatggtaga gttacaagac tatgccgatg 1200

tggtgactca agaagagagg gctgagggag ctgaaacagg catgttccca tgaattccgg 1260

<210> 450
<211> 404
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 450
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caagtgaaaa ggaaatgtgg taccttaatc tttccacatc aagccaatat catgctgaag 120

gccagagaat ctttttgct aaaaaacaca atacagatat aattaatagt tatcatttat 180

gtttgatatt aatcatatga atataattaa tatgttttat tgtatcgatt attgttgata 240

ttaatgtaat tactactaat acataacaaa tataactaat ggttatggct cagtaactaa 300

ggtaagatat aagctacact ggtaaagaaa gatcaatatt gcttcagagt acactgaagt 360

aaatgaataa cttaaccggt ctaggttgtc acttatattt atac 404

<210> 451
<211> 691
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 451
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caagtgaaaa ggaaatgtgg taccttaatc tttccacatc aagccaatat catgctgaag 120

gccagagaat ctttttgct aaaaaacaca atacagatat aattaatagt tatcatttat 180

gtttgatatt aatcatatga atataattaa tatgttttat tgtatcgatt attgttgata 240

ttaatgtaat tactactaat acataacaaa tataactaat ggttatggct cagtaactaa 300

ggtaagatat aagctacact ggtaaagaaa gatcaatatt gcttcagagt acactgaagt 360

aaatgaataa cttaaccggt ctaggttgtc acttatattt atacaacatt ttaagaacta 420

agaacctctc ttctatgctt agtagatgaa caaaatcatg taatagatga atgaggccag 480

gaagtacaaa ggtttacaaa attgccaagc cactctgggg tgattttatg agtaatgcgg 540

catttggtag cttgccttaa agaatattat tggacattat caagtgtgtg tgtgtgtgtg 600

tgtgtgtgtg tgtgtgtgtg taactgaact ctcttgtagt ttcatttttg tttgaaaaag 660

acatgtatct catgtagccc aggctggaat c 691

<210> 452
<211> 1454
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 452
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tattatcaag tgaaaaggaa atgtggtacc ttaatctttc cacatcaagc caatatcatg 120

ctgaaggcca gagaatcttt tttgctaaaa aacacaatac agatataatt aatagttatc 180

atttatgttt gatattaatc atatgaatat aattaatatg ttttattgta tcgattattg 240

ttgatattaa tgtaattact actaatacat aacaaatata actaatggtt atggctcagt 300

aactaaggta agatataagc tacactggta aagaaagatc aatattgctt cagagtacac 360

tgaagtaaat gaataactta accggtctag gttgtcactt atatttatac aacattttaa 420

gaactaagaa cctctcttct atgcttagta gatgaacaaa atcatgtaat agatgaatga 480

ggccaggaag tacaaaggtt tacaaaattg ccaagccact ctggggtgat tttatgagta 540

atgcggcatt tggtagcttg ccttaaagaa tattattgga cattatcaag tgtgtgtgtg 600

tgtgtgtgtg tgtgtgtgtg tgtgtgtaac tgaactctct tgtagtttca tttttgtttg 660

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ctctcaggtt ctggggttcc tggcatgcag cacccaagcc cagctacctc tgtgaaaact 780

ataacttagt aatcagatcc tggaccattt aaagaatata tatatatgta tgtgtgtgtg 840

tgtgtatata tataatatat acatatgtat gtatatatac atatatatgt atgtgtatat 900

atgtatgtat agagaggctg actatatata tatatatata tatgaggctg aatatatata 960

tatatatgaa tacacataca catagtgcca tggcacattc ctttaatctg agctctcagg 1020

caaaggcaga ccaatctctg agttgttcaa ggccagtgtg atccatagtc tcagaaatta 1080

tatactgaga cactcctgag gatgttatca catttctagt ttccttatct tactttagga 1140

catgattcca aaaaaaaggg gggggggaca cacagtcaat ggtagagtta caagactatg 1200

ccgatgtggt gactcaagaa gagagggctg agggagctga aacaggcatg ttcccatgaa 1260

ttccgggcaa gcctaggcta tagagtcaga ccaccatgat ttaaaaaaaa aaaaaaagtg 1320

gcacgcgaga aagtcaacaa tgctttgcat aagtgtttta cctcaaaatc gctgaatagt 1380

tgactagaac aaattaaaac cttgtccaaa gtcaaggcca gtgggatcag ggactccctc 1440

cagtcctgaa gctt 1454

<210> 453
<211> 293
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 453
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aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 120

gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta cca 293

<210> 454
<211> 364
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 454
actagttatt aatagtaatc aattacgggg tcattagttc atagcccata tatggagttc 60

cgcgttacat aacttacggt aaatggcccg cctggctgac cgcccaacga cccccgccca 120

ttgacgtcaa taatgacgta tgttcccata gtaacgccaa tagggacttt ccattgacgt 180

caatgggtgg agtatttacg gtaaactgcc cacttggcag tacatcaagt gtatcatatg 240

ccaagtacgc cccctattga cgtcaatgac ggtaaatggc ccgcctggca ttatgcccag 300

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acca 364

<210> 455
<211> 375
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 455
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atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgcccaacg 120

acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 180

tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag 240

tgtatcatat gccaagtacg cccctattg acgtcaatga cggtaaatgg cccgcctggc 300

attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag 360

tcatcgctat tacca 375

<210> 456
<211> 375
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 456
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atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgcccaacg 120

acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 180

tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag 240

tgtatcatat gccaagtccg ccccctattg acgtcaatga cggtaaatgg cccgcctggc 300

attatgccca gtacatgacc ttacgggact ttcctacttg gcagtacatc tacgtattag 360

tcatcgctat tacca 375

<210> 457
<211> 374
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 457
attgattatt gagtagttat taatagtaat caattacggg gtcattagtt catagcccat 60

atatggagtt ccgcgttaca taacttacgg taaatggccc gcctggctga ccgcccaacg 120

acccccgccc attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt 180

tccattgacg tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag 240

tgtatcatat gccaagtacg ccccctattg acgtcaatga cggtaaatgg cccgcctggc 300

attatgccca gtacatgacc ttatgggact ttcctacttg gcagtacatc tacggttagt 360

catcgctatt acca 374

<210> 458
<211> 305
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 458
ccgcgttaca taacttacgg taaatggccc gcctggctga ccgcccaacg acccccgccc 60

attgacgtca ataatgacgt atgttcccat agtaacgcca atagggactt tccattgacg 120

tcaatgggtg gagtatttac ggtaaactgc ccacttggca gtacatcaag tgtatcatat 180

gccaagtacg ccccctattg acgtcaatga cggtaaatgg cccgcctggc attatgccca 240

gtacatgacc ttatgggact ttcctacttg gcagtacatc tacgtattag tcatcgctat 300

tacca 305

<210> 459
<211> 275
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 459
acttacggta aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat 60

agtaacgcca atagggactt tccattgacg tcaatgggtg gagtatttac ggtaaactgc 120

ccacttggca gtacatcaag tgtatcatat gccaagtacg ccccctattg acgtcaatga 180

cggtaaatgg cccgcctggc attgtgccca gtacatgacc ttatgggact ttcctacttg 240

gcagtacatc tacgtattag tcatcgctat tacca 275

<210> 460
<211> 293
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 460
acttacggta aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat 60

aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 120

gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

atgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta cca 293

<210> 461
<211> 292

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 461
actacggtaa atggcccgcc tggctgaccg cccaacgacc cccgcccatt gacgtcaata 60

atgacgtatg ttcccatagt aacgccaata gggactttcc attgacgtca atgggtggag 120

tatttacggt aaactgccca cttggcagta catcaagtgt atcatatgcc aagtacgccc 180

cctattgacg tcaatgacgg taaatggccc gcctggcatt atgcccagta catgacctta 240

tgggactttc ctacttggca gtacatctac gtattagtca tcgctattac ca 292

<210> 462
<211> 293
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 462
acttacggta aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat 60

aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 120

ctatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

atgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta cca 293

<210> 463
<211> 412
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 463
gtcagtgtac ttggctccaa tgggtttttc ccattgactc atcccctatt gaccttatgt 60

actgggcaaa acccaatgga aagtccctat tgacgcagtg tacttggctc caatgggact 120

ttcctgttga ttcaccccct attgacctta tgtactgggc agaatacaat ggaaagtccc 180

tattgactca cccacattga ccttatatgc ttgccaacaa tggaaaaacc cattggaaag 240

tccctattga gtcagtgtac ttggcagcaa tgggtttttc ccattggctc acctcccatt 300

gacccaatgt acttgggcaa aacccagtgg aaagtcccat ttgactcagt gtgcttgcca 360

gtaatgggaa aaacccattg gcttacctcc cattgaccca atgtacttgg gt 412

<210> 464
<211> 294
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 464
tgagtcaata gggactttcc aatgggtttt gcccagtaca taaggtcaat gggaggtaag 60

ccaatgggtt tttcccatta ctggcacgta tactgagtca ttagggactt tccaatgggt 120

tttgcccagt acataaggtc aataggggtg aatcaacagg aaagttccat tggagccaag 180

tacactgagt caatagggac tttccattgg gttttgccca gtacaaaagg tcaatagggg 240

gtgagtcaat gggtttttcc cattattggc acgtacataa ggtcaatagg ggtg 294

<210> 465
<211> 423
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 465
gagtcaatgg gaaaaaccca ttggagccaa gtacactgac tcaataggga ctttccattg 60

ggttttgccc agtacataag gtcaataggg ggtgagtcaa caggaaagtc ccattggagc 120

caagtacatt gagtcaatag ggactttcca atgggttttg cccagtacat aaggtcaatg 180

ggaggtaagc caatgggttt ttcccattac tgacatgtat actgagtcat tagggacttt 240

ccaatgggtt ttgcccagta cataaggtca ataggggtga atcaacagga aagtcccatt 300

ggagccaagt acactgagtc aatagggact ttccattggg ttttgcccag tacaaaaggt 360

caatagggggg tgagtcaatg ggtttttccc attattggca catacataag gtcaataggg 420

gtg 423

<210> 466
<211> 412
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 466
gtcagtgtac ttggctccaa tgggtttttc ccattgactc atcccctatt gaccttatgt 60

actgggcaaa acccaatgga aagtccctat tgacgcagtg tacttggctc caatgggact 120

ttcctgttga ttcaccccct attgacctta tgtactgggc agaatacaat ggaaagtccc 180

tattgactca cccacattga ccttatatgc ttgccaacaa tggaaaaacc cattggaaag 240

tccctattga gtcagtgtac ttggcagcaa tgggtttttc ccattggctc acctcccatt 300

gacccaatgt acttgggcaa aacccagtgg aaagtcccat ttgactcagt gtgcttgcca 360

gtaatgggaa aaacccattg gcttacctcc cattgaccca atgtacttgg gt 412

<210> 467
<211> 294
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 467
tgagtcaata gggactttcc aatgggtttt gcccagtaca taaggtcaat gggaggtaag 60

ccaatgggtt tttcccatta ctggcacgta tactgagtca ttagggactt tccaatgggt 120

tttgcccagt acataaggtc aataggggtg aatcaacagg aaagttccat tggagccaag 180

tacactgagt caatagggac tttccattgg gttttgccca gtacaaaagg tcaatagggg 240

gtgagtcaat gggtttttcc cattattggc acgtacataa ggtcaatagg ggtg 294

<210> 468
<211> 423
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 468
gagtcaatgg gaaaaaccca ttggagccaa gtacactgac tcaataggga ctttccattg 60

ggttttgccc agtacataag gtcaataggg ggtgagtcaa caggaaagtc ccattggagc 120

caagtacatt gagtcaatag ggactttcca atgggttttg cccagtacat aaggtcaatg 180

ggaggtaagc caatgggttt ttcccattac tgacatgtat actgagtcat tagggacttt 240

ccaatgggtt ttgcccagta cataaggtca ataggggtga atcaacagga aagtcccatt 300

ggagccaagt acactgagtc aatagggact ttccattggg ttttgcccag tacaaaaggt 360

caatagggggg tgagtcaatg ggtttttccc attattggca catacataag gtcaataggg 420

gtg 423

<210> 469
<211> 206
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 469
tatactgagt cattagggac tttccaatgg gttttgccca gtacataagg tcaatagggg 60

tgaatcaaca ggaaagtccc attggagcca agtacactga gtcaataggg actttccatt 120

gggttttgcc cagtacaaaa ggtcaatagg gggtgagtca atgggttttt cccattattg 180

gcacgtacat aaggtcaata ggggtg 206

<210> 470
<211> 106
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 470
ccattggagc caagtacact gagtcaatag ggactttcca ttgggttttg cccagtacaa 60

aaggtcaata gggggtgagt caatgggttt ttcccattat tggcac 106

<210> 471
<211> 292
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 471
ttcaatgtct atatatggag atccgcatat tgacgtcaat atcggtaaat ggcccacttg 60

gctgaccgcc ccacgacccc cgcccattga cgtcaatggt gggactttcc attgacgtca 120

atgggcgggg aacggatatg agccatagaa tgtactgcca agtgggccat ttaccgttca 180

ccacgcccct attgacgtca atgacggtaa atggcccgcc tggctgtacg ccaattgcat 240

catcctattg tttttctatg ggaatttccc tattggcagt acatcaacgt at 292

<210> 472
<211> 102
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 472
ccagctgttg gggtgagtac tccctctcaa aagcgggcat tacttctgcg ctaagattgt 60

cagtttccaa aaacgaggag gatttgatat tcacctggcc cg 102

<210> 473
<211> 144
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 473
ggtgtggaaa gtccccaggc tccccagcag gcagaagtat gcaaagcatg catctcaatt 60

agtcagcaac caggtgtgga aagtccccag gctccccagc aggcagaagt atgcaaagca 120

tgcatctcaa ttagtcagca acca 144

<210> 474
<211> 178
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 474
gcacatcgcc cacagtcccc gagaagttgg ggggaggctc tggctgcagg taattgaacc 60

ggtgcctaga gaaggtggcg cggggtaaac tgggaaagtg atgtcgtgta ctggctccgc 120

ctttttcccg agggtggggg agaaccgtat ataagtgcag tagtcgccgt gaacgttc 178

<210> 475
<211> 369
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 475
acccgccccg accggagctg agagtaattc atacaaaagg actcgcccct gccttgggga 60

atcccaggga ccgtcgttaa actcccacta acgtagaacc cagagatcgc tgcgttcccg 120

ccccctcacc cgcccgctct cgtcatcact gaggtggaga atagcatgcg tgaggctccg 180

gtgcccgtca gtgggcagag cgcacatcgc ccacagtccc cgagaagttg ggaggggtcg 240

gcaattgaac cggtgcctag agaaggtggc gcggggtaaa ctgggaaagt gatgtcgtgt 300

actggctcag ccttttcccc gagggtgggg gagaaccgta tataagtgca gtagtcgccg 360

tgaacgttc 369

<210> 476
<211> 369
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 476
acccgccccg accggagctg agagtaattc atacaaaagg actcgcccct gccttgggga 60

atcccaggga ccgtcgttaa actcccacta acgtagaacc cagagatcgc tgcgttcccg 120

ccccctcacc cgcccgctct cgtcatcact gaggtggaga atagcatgcg tgaggctccg 180

gtgcccgtca gtgggcagag cgcacatcgc ccacagtccc cgagaagttg ggaggggtcg 240

gcaattgaac cggtgcctag agaaggtggc gcggggtaaa ctgggaaagt gatgtcgtgt 300

actggctccg ccttttcccc gagggtgggg gagaaccgta tataagtgca gtagtcgccg 360

tgaacgttc 369

<210> 477
<211> 372
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 477
acccgccccg accggagctg agagtaattc atacaaaagg actcgcccct gccttgggga 60

atcccaggga ccgtcgttaa actcccacta acgtagaacc cagagatcgc tgcgttcccg 120

ccccctcacc cgcccgctct cgtcatcact gaggtggaga atagcatgcg tgaggctccg 180

gtgcccgtca gtgggcagag cgcacatcgc ccacagtccc cgagaagttg gggggagggg 240

tcggcaattg aaccggtgcc tagagaaggt ggcgcggggt aaactgggaa agtgatgtcg 300

tgtactggct ccgccttttt cccgagggtg ggggagaacc gtatataagt gcagtagtcg 360

ccgtgaacgt tc 372

<210> 478
<211> 372
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 478
acccgccccg accggagctg agagtaattc atacaaaagg actcgcccct gccttgggga 60

atcccaggga ccgtcgttaa actcccacta acgtagaacc cagagatcgc tgcgttcccg 120

ccccctcacc cgcccgctct cgtcatcact gaggtggaga atagcatgcg tgaggctccg 180

gtgcccgtca gtgggcagag cgcacatcgc ccacagtccc cgagaagttg gggggagggg 240

tcggcaattg aacgggtgcc tagagaaggt ggcgcggggt aaactgggaa agtgatgtcg 300

tgtactggct ccgccttttt cccgagggtg ggggagaacc gtatataagt gcagtagtcg 360

ccgtgaacgt tc 372

<210> 479
<211> 372
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 479
acccgccccg accggagctg agagtaattc atacaaaagg actcgcccct gccttgggga 60

atcccaggga ccgtcgttaa actcccacta acgtagaacc cagagatcgc tgcgttcccg 120

ccccctcacc cgcccgctct cgtcatcact gaggtggaga atagcatgcg tgaggctccg 180

gtgcccgtca gtgggcagag cgcacatcgc ccacagtccc cgagaagttg gggggagggg 240

tcggcaattg atccggtgcc tagagaaggt ggcgcggggt aaactgggaa agtgatgtcg 300

tgtactggct ccgccttttt cccgagggtg ggggagaacc gtatataagt gcagtagtcg 360

ccgtgaacgt tc 372

<210> 480
<211> 570
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 480
ctgggctgag acccgcagag gaagacgctc tagggatttg tcccggacta gcgagatggc 60

aaggctgagg acgggaggct gattgagagg cgaaggtaca ccctaatctc aatacaacct 120

ttggagctaa gccagcaatg gtagagggaa gattctgcac gtcccttcca ggcggcctcc 180

ccgtcaccac ccccccccaac ccgccccgac cggagctgag agtaattcat acaaaaggac 240

tcgcccctgc cttggggaat cccagggacc gtcgttaaac tcccactaac gtagaaccca 300

gagatcgctg cgttcccgcc ccctcacccg cccgctctcg tcatcactga ggtggagaag 360

agcatgcgtg aggctccggt gcccgtcagt gggcagagcg cacatcgccc acagtccccg 420

agaagttggg gggaggggtc ggcaattgaa ccggtgccta gagaaggtgg cgcggggtaa 480

actgggaaag tgatgtcgtg tactggctcc gccttttcc cgagggtggg ggagaaccgt 540

atataagtgc agtagtcgcc gtgaacgttc 570

<210> 481
<211> 168
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 481
gcacatcgcc cacagtcccc gagaagttgg gaggggtcgg caattgaacc ggtgcctaga 60

gaaggtggcg cggggtaaac tgggaaagtg atgtcgtgta ctggctccgc ctttttcccg 120

agggtggggg agaaccgtat ataagtgcag tagtcgccgt gaacgttc 168

<210> 482
<211> 171
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 482
gcacatcgcc cacagtcccc gagaagttgg ggggaggggt cggcaattga accggtgcct 60

agagaaggtg gcgcggggta aactgggaaa gtgatgtcgt gtactggctc cgcctttttc 120

ccgagggtgg gggagaaccg tatataagtg cagtagtcgc cgtgaacgtt c 171

<210> 483
<211> 171
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 483
gcacatcgcc cacagtcccc gagaagttgg ggggaggggt cggcaattga acgggtgcct 60

agagaaggtg gcgcggggta aactgggaaa gtgatgtcgt gtactggctc cgcctttttc 120

ccgagggtgg gggagaaccg tatataagtg cagtagtcgc cgtgaacgtt c 171

<210> 484
<211> 168
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 484
gcacatcgcc cacagtcccc gagaagttgg gaggggtcgg caattgaacc ggtgcctaga 60

gaaggtggcg cggggtaaac tgggaaagtg atgtcgtgta ctggctcagc ctttttcccg 120

agggtggggg agaaccgtat ataagtgcag tagtcgccgt gaacgttc 168

<210> 485
<211> 171
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 485
gcacatcgcc cacagtcccc gagaagttgg ggggaggggt cggcaattga tccggtgcct 60

agagaaggtg gcgcggggta aactgggaaa gtgatgtcgt gtactggctc cgccttttc 120

ccgagggtgg gggagaaccg tatataagtg cagtagtcgc cgtgaacgtt c 171

<210> 486
<211> 440
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 486
agcggggctg acgtcgggag gtggcctccg tgggaaggga cacccggatc ttgacacagc 60

cttggcagcg gagtaaggaa gagtagggat agattctggc cgccctcttg gccagcttct 120

cgccgcccca ccctccgcta gggccaagag taattcatac aaaaggaggg atcgccttcg 180

caaggggaga gcccagggac cgtccctaaa ttctcacaga cccaaatccc tgtagccgcc 240

ccacgacagc gcgaggagca tgcgctcagg gctgagcgcg gggagagcag agcacacaag 300

ctcatagacc ctggtcgtgg gggggaggac cggggagctg gcgcggggca aactgggaaa 360

gcggtgtcgt gtgctggctc cgccctcttc ccgagggtgg gggagaacgg tatataagtg 420

cggcagtcgc cttggacgtt 440

<210> 487
<211> 480
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 487
agcggggctg acgtcgggag gtggcctccg tgggaaggga cacccggatc ttgacacagc 60

cttggcagcg gagtaaggaa gagtagggat agattctggc cgccctcttg gccagcttct 120

cgccgcccca ccctccgcta gggccaagag taattcatac aaaaggaggg atcgccttcg 180

cctggggaag tcccagggac cgtcgctaaa ttctcataac ccataatccc ggtacccgcc 240

ccaccacagt gcgaggagca tgcgctcagg gctgagcgcg gggagagcag agcacacaag 300

ctcatagacc ctggtcgtgg ggggaggggc gcactgagcg gggggggggg gggtgatggg 360

ggggaggacc ggggagctgg cgcggggcaa actgggaaag cggtgtcgtg tgctggctcc 420

gccctcttcc cgagggtggg ggagaacggt atataagtgc ggcagtcgcc ttggacgttc 480

<210> 488
<211> 316
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 488
ggagccgaga gtaattcata caaaaggagg gatcgccttc gcaaggggag agcccaggga 60

ccgtccctaa attctcacag acccaaatcc ctgtagccgc cccacgacag cgcgaggagc 120

atgcgcccag ggctgagcgc gggtagatca gagcacacaa gctcacagtc cccggcggtg 180

gggggagggg cgcgctgagc gggggccagg gagctggcgc ggggcaaact gggaaagtgg 240

tgtcgtgtgc tggctccgcc ctcttcccga gggtggggga gaacggtata taagtgcggt 300

agtcgccttg gacgtt 316

<210> 489
<211> 503
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 489
cctctcccgg ccagaggagc aaggtatgcg ggaggcgacc aggaggatag cggggctgac 60

gtcgggaggt ggcctccgtg ggaaggacac ccggatcttg acacagcctt ggcagcggag 120

tcaggaagag taggggtagg ttctggacgc cctcttggcc agctcatcgc cgccccaccc 180

tctgctggag cacagagtaa ttcatacaaa aggagggatc gccttcgcaa ggggagagcc 240

cagggaccgt ccctaaattc tcacagaccc aaatccctgt agccgcccca cgacagcgcg 300

aggagcatgc gcccagggct gagcgcgggt agatcagagc acacaagctc acagtccccg 360

gcggtggggg gaggggcgcg ctgagcgggg gccagggagc tggcgcgggg caaactggga 420

aagtggtgtc gtgtgctggc tccgccctct tcccgagggt gggggagaac ggtatataag 480

tgcggtagtc gccttggacg ttc 503

<210> 490
<211> 503
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 490
cctctcccgg ccagaggagc aaggtatgcg ggaggcgacc aggaggatag cggggctgac 60

gtcgggaggt ggcctccgtg ggaaggacac ccggatcttg acacagcctt ggcagcggag 120

tcaggaagag taggggtagg ttctggacgc cctcttggcc agctcttcgc cgccccaccc 180

tctgctggag cacagagtaa ttcatacaaa aggagggatc gccttcgcaa ggggagagcc 240

cagggaccgt ccctaaattc tcacagaccc aaatccctgt agccgcccca cgacagcgcg 300

aggagcatgc gcccagggct gagcgcgggt agatcagagc acacaagctc acagtccccg 360

gcggtggggg gaggggcgcg ctgagcgggg gccagggagc tggcgcgggg caaactggga 420

aagtggtgtc gtgtgctggc tccgccctct tcccgagggt gggggagaac ggtatataag 480

tgcggtagtc gccttggacg ttc 503

<210> 491
<211> 301
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 491
ggagccgaga gtaattcata caaaaggagg gatcgccttc gcaaggggag agcccaggga 60

ccgtccctaa attctcacag acccaaatcc ctgtagccgc cccacgacag cgcgaggagc 120

atgcgctcag ggctgagcgc ggggagagca gagcacacaa gctcatagac cctggtcgtg 180

gggggggagga ccggggagct ggcgcggggc aaactgggaa agcggtgtcg tgtgctggct 240

ccgccctctt cccgagggtg ggggagaacg gtatataagt gcggcagtcg ccttggacgt 300

t 301

<210> 492
<211> 459
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 492
ggcggggctg acgtcgggag gtggcctcca cgggaaggga cacccggatc tcgacacagc 60

cttggcagtg gagtcaggaa gggtaggaca gattctggac gccctcttgg ccagtcctca 120

ccgccccacc cccgatggag ccgagagtaa ttcatacaaa aggagggatc gccttcgccc 180

ctgggaatcc cagggaccgt cgctaaattc tggccggcct cccagcccgg aaccgctgtg 240

cccgcccagc gcggcgggag gagcctgcgc ctagggcgga tcgcgggtcg gcgggagagc 300

acaagcccac agtccccggc ggtgggggag gggcgcgctg agcgggggcc cgggagccag 360

cgcggggcaa actgggaaag tggtgtcgtg tgctggctcc gccctcttcc cgagggtggg 420

ggagaacggt ataaaagtgc ggtagtcgcg ttggacgtt 459

<210> 493
<211> 600
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 493
ggggactctg aaggcaaaga cggaggagga gcctgccccg ggcgcgtatg ggaccagcag 60

aagaagctgt tcaaggggtt tgtccaggac ccgcgagagg tcaaggctga ggacgggagg 120

cgtactgcgg ggtgaaggga taccccaacc tggataccat ctttgcaaag aaagcaggaa 180

cggtggaggg aagattctaa gcgtccccgc ctggccgtct actctccgcc ccacccccag 240

ctgcagctga gagtaattca tacaaaagga ggactcgcct tggcctcggg gaatcccagg 300

gaccgtcggt aaactcccac taacctagaa ccgagggctc gctcgtcccc gcctcccacc 360

ccgcgctctc gtcatcatcg gggtcgagag gagcatgcgc aaggcgacgg gtgcttttca 420

gtgggctgag cgcacatcgc ccacggtccc cgaaacgttg ggggagggga cggcgattga 480

acgggtgccc ggtggaggtg gcgcggggta aactgggaaa gtcgtgtcgt gtgctgactc 540

cgccctcttc ccgagggtgg gggaggaccg tatataagtg ccgtagtcct cttgaacgtt 600

<210> 494
<211> 451
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 494
gccaggggtg aggccaagac ccgcggcagg gcgaaggcac accccagtgt ccactcaacc 60

tctgtgctaa gccacgaaga aaaggaagat tctggactgc ctttctggcg attcctagcc 120

gccccacccc cggctggaac caggagtaat tcatacaaaa ggaggactcg cctctgccct 180

cgggaatccc agggaccgtc gataaattct cttaataccc gccccgcggc ctccgagtcg 240

aggagagcat gggccgccga actggttgcg gatcagggcg ccgagcccac agcatcacgg 300

tccccgaggg cgggggaggg gacggcaagg gagcaaggcc aggaggaggc ggcgcggggc 360

aaactgggaa agtggtgtcg tgtgctggct ccgccctctt tccgagggtg ggggagaacg 420

gtatataagt gccgtagtcg ccctggacgt t 451

<210> 495
<211> 525
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 495
gcctggtccg gggtgcgagc atcacgccta gaggctccca acgggccagg tggcaggtgg 60

gcgacagggg aaagggacac ctcactcttg gcggctgagc caggaacggc agaggaacat 120

tctgggcgcc cctactggcc ttttcctcgc cgccccattc ccgggtgaag ctgagagtaa 180

ttcatacaga agaactcgcc tttgcctcgg ggaatcccag ggaccgtggt taaactccca 240

ctaacttaaa agcgaaggat ctccggggcc ccgcccccgg ctctcgtcaa cctcggggtc 300

gagaggagca tgcgcaagga gctgggtacg ggtcagtggg ctcagcgcac atcgcccatg 360

gtccccgaga actggttggg gggaggggag aggggcggtg attgaacgag tgcctactgg 420

aggttgcgcg gtgtaaactg ggaaagtggt gtcgtgtgcg ggctccgccc tcttcccgag 480

ggtgggggag aaccgtatat aagtgccgta gtcgccctgg acgtt 525

<210> 496
<211> 220
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 496
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ttccaagtct ccacccccatt gacgtcaatg ggagtttgtt ttggcaccaa aatcaacggg 120

actttccaaa atgtcgtaac aactccgccc cattgacgca aatgggcggt aggcgtgtac 180

ggtgggaggt ctatataagc agagctcgtt tagtgaaccg 220

<210> 497
<211> 220
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 497
tgctgatgcg gttttggcag tacaccaatg ggcgtggata gcggtttgac tcacggggat 60

ttccaagtct ccacccccatt gacgtcaatg ggagtttgtt ttggcaccaa aatcaacggg 120

actttccaaa atgtcgtaat aaccccgccc cgttgacgca aatgggcggt aggcgtgtac 180

ggtgggaggt ctatataagc agagctcgtt tagtgaaccg 220

<210> 498
<211> 220
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 498
tagtgatgcg gttttggcag tacatcaatg ggcgtggata gcggtttgac tcacggggat 60

ttccaagtct ccaccccatt gacgtcaatg ggagtttgtt ttggcaccaa aatcaacggg 120

actttccaaa atgtcgtaac aactccgccc cattgacgca aatgggcggt aggcgtgtac 180

ggtgggaggt ctatataagc agagctcgtt tagtgaaccg 220

<210> 499
<211> 220
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 499
tggtgatgcg gttttggcag tacatcaatg ggcgtggata gcggtttgac tcacggggat 60

ttccaagtct ccaccccatt gacgtcaatg ggagtttgtt ttggcaccaa aatcaacggg 120

actttccaaa atgtcgtaac aactccgccc cattgacgca aatgggcggt aggcgtgtac 180

ggtgggaggt ctatataagc agcgcgcgtt tagtgaaccg 220

<210> 500
<211> 220
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 500
tggtgatgcg gttttggcag tacaccaatg ggcgtggata gcggtttgac tcacggggat 60

ttccaagtct ccaccccatt gacgtcaatg ggagtttgtt ttggcaccaa aatcaacggg 120

actttccaaa atgtcgtaat aaccccgccc cgttgacgca aatgggcggt aggcgtgtac 180

ggtgggaggt ctatataagc agagctcgtt tagtgaaccg 220

<210> 501
<211> 314
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 501
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caatgggcta ttgaaactaa tgcaacgtga cctttaaacg gtactttccc atagctgatt 120

aatgggaaag taccgttctc gagccaatac acgtcaatgg gaagtgaaag ggcagccaaa 180

acgtaacacc gccccggttt tcccctggaa attccatatt ggcactcatt ctattggctg 240

agctgcgttc tacgtgggta taagaggcgc gaccagcgtc ggtaccgtcg cagtcttcgg 300

tctgaccacc gtag 314

<210> 502
<211> 313
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 502
agtcattggg tttttccagc caatttataa aacgccatgt actttcccac cattgacgtc 60

aatgggctat tgaaactaat gcaacgtgac ctttaaacgg tactttccca tagctgatta 120

atgggaaagt accgttctcg agccaataca cgtcaatggg aagtgaaagg gcagccaaaa 180

cgtaacaccg ccccggtttt cccctggaaa ttccatattg gcacgcattc tattggctga 240

gctgcgttct acgtgggtat aagaggcgcg accagcgtcg gtaccgtcgc agtcttgggt 300

ctgaccaccg tag 313

<210> 503
<211> 315
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 503
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tcaatgggct attgaaacta atgcaacgtg acctttaaac ggtactttcc catagctgat 120

taatgggaaa gtaccgttct cgagccaata cacgtcaatg ggaagtgaaa gggcagccaa 180

aacgtaacac cgccccggtt ttcccctgga aattccatat tggcacgcat tctattggct 240

gagctgcgtt ctacgtgggt ataagaggcg cgaccagcgt cggtaccgtc gcagtcttcg 300

gtctgaccac cgtag 315

<210> 504
<211> 283
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 504
agtcattggg tttttccagc caatttataa aacgccatgt actttcccac cattgacgtc 60

aatgggctat tgaaactaat gcaacgtgac ctttaaacgg tactttccca tagctgatta 120

atgggaaagt accgttctcg agccaataca cgtcaatggg aagtgaaagg gcagccaaaa 180

cgtaacaccg ccccggtttt cccctggaaa ttccatattg gcacgcattc tattggctga 240

gctgcgttct acgtgggtat aagaggcgcg accagcgtcg gta 283

<210> 505
<211> 293
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 505
aaaggccatt gagtcaccac ccctatgctg ggaaatggtg aacgcccccc atgtggaaag 60

tccctatggg ccgccattag agtgcatgac cgtgctgatt catatgccat atgagtgtat 120

taggggggctt tccgcgtggg aaattgggta aaaagtcccc gtattactca catagggggc 180

gtttggcttt gcaaattagg ggatttcagt gcatttggca ttaaaaacta ttggttctag 240

tcataaaacg ggcggagtta accatataat tgctgtcccc catgccattc gag 293

<210> 506
<211> 238
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 506
tactaatggg gatttccaat gactaataca acgggcagta cgcccagtac gtatgactaa 60

tgggactttc cataatcccg ccccattgac gtcaatgggc atccgttctg gcaccaaaat 120

gaatgggaat ttccaatatg agtcataaac cccgccccat tgacgcacat tacacgtcaa 180

tgggcggtag gcgtgcccta tgggcggtct atataagcag agcccgttta gtgaaccg 238

<210> 507
<211> 783
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 507
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cacggtccta attcttttag atgtctttag ttcgtttcac tctcccccaa acaatagggt 120

ggtattgatc acctccgagc aggtgaaatt gaggcacaga gaaatcctag tagctggtag 180

aagaacacgc agtgtggtca agctagcaag gtgtttggtc cactgctata tctacaaaac 240

ccctaacaat gcctggtgta tagatgctca gtatgcattt gtgggatcag tgattccgat 300

gcctgcttct tataaagttt ttatttagaa ataattacag gtaaggagtt gcaaaaacag 360

tatagtggga tcgagtgtcc tttttccctc ggcttctccc aggggtatcg tcttacgtaa 420

caatgtccaa acagggaaat tgacttgggt ataatccaca gactctattc accttgtaga 480

ttggttttaa tagaagtaac tggacaactt gtaagctaat atcgttgcta tggttctcgt 540

tctcagctaa aacggcgctc tttactttgt gcacctgaac actgcacacc gagggcgacc 600

accgcccccg agatgcccag cttctattct agagcgccgc gccggcgccg aatgggttaa 660

cgggcggggg gacacgcctc cgtgcgcttg cgcggcgtcc cttcgccccg ccttcgcagc 720

gcagtcacat gacccgccca accggcgtcc gcctataaaa agctgagtgt tgacgtcagc 780

gtt 783

<210> 508
<211> 335
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 508
ggatccaact tctaagtccg ttttttattg atctaaaagg ccttttgcga atcatcttga 60

aggcaatcgc gttctgagcc acctcagctt tggcacacag cgcggggact gtcgcgaggg 120

gtttagggcc caagcaggac acaccccgaa atctccgcag ccacccccac cccacgcccc 180

cggctcttga gggttaaatc gcaggcgcag gttctcgcac gcgcacatca tcccgcaggc 240

gagccccagc acccagccca gggtgcgcgc gcgccgtcac gtgacacgcc caaccggcgt 300

cgccgtataa aagcgcgggc gttgacgtca gcggt 335

<210> 509
<211> 335
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 509
ggatccaact tctaagtccg ttttttattg atctaaaagg ccttttgcga atcatcttga 60

aggcaatcgc gttctgagcc acctcagctt tggcacacag cgcggggact gtcgcgaggg 120

gtttagggcc caagcaggac acaccccgaa atctccgcag ccacccccac cccacgcccc 180

cggctcttga gggttaaatc gcaggcgctg gttctcgcac gcgcacatca tcccgcaggc 240

gagccccagc acccagccca gggtgcgcgc gcgccgtcac gtgacacgcc caaccggcgt 300

cgccgtataa aagcgcgggc gttgacgtca gcgtt 335

<210> 510
<211> 343
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 510
tgacttgggt ataatccaca gactctattc accttgtaga ttggttttaa tagaagtaac 60

tggacaactt gtaagctaat atcgttgcta tggttctcgt tctcagctaa aacggcgctc 120

tttactttgt gcacctgaac actgcacacc gagggcgacc accgcccccg agatgcccag 180

cttctattct agagcgccgc gccggcgccg aatgggttaa cgggcggggg gacacgcctc 240

cgtgcgcttg cgcggcgtcc cttcgccccg ccttcgcagc gcagtcacat gacccgccca 300

accggcgtcc gcctataaaa agctgagtgt tgacgtcagc gtt 343

<210> 511
<211> 329
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 511
cggtccgaat ttcaaagtct ttttcctatt gacctacaag gttttcaaga atcatgttgt 60

aagcaactgt gttctgagga atctatgttt aaaaacccat ccgtggatct tggcccaggg 120

tccagagact gagctagcca cgccccggcc gcgccgcagc cactcccacg gcagttcaag 180

tgttaagtcc caaagaccgc gctctgtgca tgcgcagacc cgtccacagc tggctcctag 240

ccaacccggc cggacgagca cccggcgccg tcacgtgacg cacccaaccg gcgtcgacct 300

ataaaaggcc gggcgttgac gtcagcggt 329

<210> 512
<211> 329
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 512
cggtccgaat ttcaaagtct ttttcctatt gacctacaag gttttcaaga atcatgttgt 60

aagcaactgt gttctgagga atctatgttt aaaaacccat ccgtggatct tggcccaggg 120

tccagagact gagctagcca cgccccggcc gcgccgcagc cactcccacg gcagttcaag 180

tgttaagtcc caaagaccgc gctctgtgca tgcgcagacc cgtccacagc tggctcctag 240

ccaacccggc cggacgagca cccggcgccg tcacgtgacg cacccaaccg gcgtcgacct 300

ataaaaggcc gggcgttgac gtcagcgtt 329

<210> 513
<211> 325
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 513
gggtccgaat ttcaaagtcc tttttattga cttacaaggt tttcaaggaa aatcttggaa 60

gtaactgtgt tccgaagaat ctacgtttaa aaaccgaccc ctggatcttt gccttgggtc 120

caaggaccga gctggccacg ccccagccgc gccgcagcca ctcccaaggc agttcaagtg 180

ttaagcccga aaggtagagc tctgcgcatg tgcacacccg tccatagctg ggtcccagcc 240

aaccaggccg gaggagcacc cgcgccgtca cgtgacgtgc ccaaccggcg tcgacctata 300

aaaggccggg cgttgacgtc agcgg 325

<210> 514
<211> 326
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 514
gggtccgaat ttcaaagtcc tttttattga cttacaaggt tttcaaggaa aatcttggaa 60

gtaactgtgt tccgaagaat ctacgtttaa aaaccgaccc ctggatcttt gccttgggtc 120

caaggaccga gctggccacg ccccagccgc gccgcagcca ctcccaaggc agttcaagtg 180

ttaagcccga aaggtagagc tctgcgcatg tgcacacccg tccatagctg ggtcccagcc 240

aaccaggccg gaggagcacc cgcgccgtca cgtgacgtgc ccaaccggcg tcgacctata 300

aaaggccggg cgttgacgtc agcgtt 326

<210> 515
<211> 169
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 515
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gctgagtgtt gacgtcagcg ttctcttccg ccgtcgtcgc cgccatcctc ggcgcgactc 120

gcttctttcg gttctacctg ggagaatcca ccgccatccg ccaccacca 169

<210> 516
<211> 163
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 516
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gcgggcgttg acgtcagcgt tctcttccgc cgcagccgcc gccatcgtcg gcgcccctcg 120

cacttctcct gtgcccgtga gaatccgtcg ccatccgcca cca 163

<210> 517
<211> 164
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 517
ggccggacga gcacccggcg ccgtcacgtg acgcacccaa ccggcgtcga cctataaaag 60

gccgggcgtt gacgtcagcg ttctcttccg ccgcagccgc cgccatcgtc ggcgcgcttc 120

cctgttcacc tctgactctg agaatccgtc gccatccgcc acca 164

<210> 518
<211> 280
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 518
tggtcgaggt gagccccacg ttctgcttca ctctccccat ctccccccccc tccccacccc 60

caattttgta tttatttatt ttttaattat tttgtgcagc gatgggggcg gggggggggg 120

gggcgcgcgc caggcggggc ggggcggggc gaggggcggg gcggggcgag gcggagaggt 180

gcggcggcag ccaatcagag cggcgcgctc cgaaagtttc cttttatggc gaggcggcgg 240

cggcggcggc cctataaaaa gcgaagcgcg cggcgggcgg 280

<210> 519
<211> 282
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 519
tggtcgaggt gagccccacg ttctgcttca ctctccccat ctccccccccc tccccacccc 60

caattttgta tttatttatt ttttaattat tttgtgcagc gatgggggcg gggggggggg 120

gggggcgcgc gccaggcggg gcggggcggg gcgaggggcg gggcggggcg aggcggagag 180

gtgcggcggc agccaatcag agcggcgcgc tccgaaagtt tccttttatg gcgaggcggc 240

ggcggcggcg gccctataaa aagcgaagcg cgcggcgggc gg 282

<210> 520
<211> 280
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 520
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caattttgta tttatttatt ttttaattat tttgtgcagc gatgggggcg gggggggggg 120

gggcgcgcgc caggtggggc ggggcggggc gaggggcggg gcggggcgag gcggagaggt 180

gcggcggcag ccaatcagag cggcgcgctc cgaaagtttc cttttatggc gaggcggcgg 240

cggcggcggc cctataaaaa gcgaagcgcg cggcgggcgg 280

<210> 521
<211> 283
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 521
tgggtcgagg tgagccccac gttctgcttc actctcccca tctccccccc ctccccaccc 60

ccaattttgt atttatttat tttttaatta ttttgtgcag cgatgggggc gggggggggg 120

ggggcgcgcg ccaggcgggg cggggcgggg cgaggggcgg ggcggggcga ggcggagagg 180

tgcggcggca gccaatcaga gcggcgcgct ccgaaagttt ccttttatgg cgaggcggcg 240

gcggcggcgg ccctataaaa agcgaagcgc gcggcgggcg gga 283

<210> 522
<211> 270
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 522
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aatgctgcac tgtgcggcta ggccggtgag tgagcggcgc ggagccaatc agcgctcgcc 120

gttccgaaag ttgcctttta tggctcgagt ggccgctgtg gcgtcctata aaacccggcg 180

gcgcaacgcg cagccactgt cgagtccgcg tccacccgcg agcacaggcc tttcgcagct 240

ctttcttcgc cgctccacac ccgccaccag 270

<210> 523
<211> 294
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 523
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aaaaggaggg gagaggggt aaaaaaatgc tgcactgtgc ggcgaggccg gtgagtgagc 120

gacgcggagc caatcagcgc ccgccgttcc gaaagttgcc ttttatggct cgagtggccg 180

ctgtggcgtc ctataaaacc cggcggcgca acgcgcagcc actgtcgagt cgcgtccacc 240

cgcgagcaca gcttctttgc agctccttcg ttgccggtcc acacccgcca ccag 294

<210> 524
<211> 230
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 524
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aaaggagggg agaggggggta aaaaaatgct gcactgtgcg gcgaggccgg tgagtgagcg 120

acgcggagcc aatcagcgcc cgccgttccg aaagttgcct tttatggctc gagtggccgc 180

tgtggcgtcc tataaaaccc ggcggcgcaa cgcgcagcca ctgtcgagtc 230

<210> 525
<211> 308
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 525
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ttttttttttt ttttttttttt tgcaaaagaa gggggtaaaa aaatgctgca ctgtcgggcg 120

aggccggtga gtgagcgagc cggagccaat cagcgcccgc cgttccgaaa ttgcctttta 180

tggctcgagt ggccgctgtg gcgtcctata aaacccggcg gcgcaacgcg cgccactgtc 240

gagtccgcgt ccacccgcga gtacaacctc cttgcagctc ctccgtcccg gtccacaccc 300

gccaccag 308

<210> 526
<211> 253
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 526
gcccagcacc ccaaggcggc caacgccaaa actctccctc ctcctcttcc tcaatctcgc 60

tctcgctctt tttttttttc gcaaaaggag gggagagggg gtaaaaaaat gctgcactgt 120

gcggcgaagc cggtgagtga gcggcgcggg gccaatcagc gtgcgccgtt ccgaaagttg 180

ccttttatgg ctcgagcggc cgcggcggcg ccctataaaa cccagcggcg cgacgcgcca 240

ccaccgccga gtc 253

<210> 527
<211> 61

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 527
ttgcctttta tggctcgagt ggccgctgtg gcgtcctata aaacccggcg gcgcaacgcg 60

c 61

<210> 528
<211> 494
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 528
atgacgtcga ggagaagttc cccaactttc ccgcctctca gcctttgaaa gaaagaaagg 60

ggaggggggca ggccgcgtgc agccgcgagc ggtgctgggc tccggctcca attccccatc 120

tcagtcgttc ccaaagtcct cctgtttcat ccaagcgtgt aagggtcccc gtccttgact 180

ccctagtgtc ctgctgccca cagtccagtc ctgggaacca gcaccgatca cctcccatcg 240

ggccaatctc agtcccttcc cccctacgtc ggggcccaca cgctcggtgc gtgcccagtt 300

gaaccaggcg gctgcggaaa aaaaaaagcg gggagaaagt agggcccggc tactagcggt 360

tttacgggcg cacgtagctc aggcctcaag accttgggct gggactggct gagcctggcg 420

ggaggcgggg tccgagtcac cgcctgccgc cgcgcccccg gtttctataa attgagcccg 480

cagcctcccg cttc 494

<210> 529
<211> 486
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 529
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cttcccagca ttacgttgcg ggtaaaacgg aggtcgtgta cccgacctag cagcccaggg 300

atggaaaagt cccggccgtc gctggcaata atagcgggcg gacgcatgtc atgagattat 360

tggaaaccac cagaatcgaa tataaaaggc gaacaccttt cccaattttg gtttctcctg 420

acccaaagac tttaaattta atttatttgt ccctatttca atcaattgaa caactatcaa 480

aacaca 486

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<213> Artificial sequence

<220>
<223> Synthetic

<400> 530
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tgtggagtaa tggaaccaga aacgtctctt cccttctctc tccttccacc gcccgttacc 180

gtccctagga aattttactc tgctggagag cttcttctac ggccccttg cagcaatgct 240

cttcccagca ttacgttgcg ggtaaaacgg aggtcgtgta cccgacctag cagcccaggg 300

atggaaaagt cccggccgtc gctggcaata atagcgggcg gacgcatgtc atgagattat 360

tggaaaccac cagaatcgaa tataaaaggc gaacaccttt cccaattttg gtttctcctg 420

acccaaagac tttaaattta atttatttgt ccctatttca atcaattgaa caactatcaa 480

aacaca 486

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<213> Artificial sequence

<220>
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<400> 531
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ctccgttgca actccgaacg acctgctggc aacgtaaaat tctccggggt aaaacttaaa 120

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ctacccagca ttacgttgcg ggtaaaacgg aggtcgtgta cccgacctag cagcccaggg 300

atggaaaagt cccggccgtc gctggcaata atagcgggcg gacgcatgtc atgagattat 360

tggaaaccac cagaatcgaa tataaaaggc gaacaccttt cccaattttg gtttctcctg 420

acccaaagac tttaaattta atttatttgt ccctatttca atcaattgaa caactatcaa 480

aacaca 486

<210> 532
<211> 843
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 532
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agccgctccc gggtcgtccg tgcggcccct tggcgcggcc tgggctcctg gacctctctg 180

gttcccacca ggatccccat ccccgagtct atagtggctt gcgtgcccat agtcccgtcc 240

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ggctgggact gggcgagcag cacgggaggc ggggcgcacg tcacccacgc cccgccgccc 480

ccagtcccta taaattgagg ctgcgggttc ctccggtgct ctctgctccg ccccgttcga 540

caggcagccg cttcttctcg tgcagtgcta ggtgaccaag gcagaggccg tgggggcttg 600

ggggccggcg ggaggagggg gcgtgctggc cggggcttgg gcagccccga ggcggtgctg 660

ggcccccaga gcggagccgc cgggcggggt cccgcattgc aggggcgagc agagtacgtg 720

ccgtgccctg gggtgggaat ggaggccggg gggaggggcg ccgagggctc tggccgctgg 780

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acc 843

<210> 533
<211> 799
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 533
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caccacccca gttcctataa atacggactg cagccctccc cggtgctctc tgctcctccc 540

tgttctagag acagccgcat ctttccgtgc agtgccaggt gaaaaccgca gagtgggccg 600

caggtggccg gggacggtcg gaaacgggga agggggcgc tcagcccggg actgcgggcg 660

ctggggcgag ctccactgcc cgagcccggg ctccgcattg cagaggctgg agggggaagg 720

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cgctccggag actgccacc 799

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<211> 163
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 534
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cctcctgttc gacagtcagc cgcatcttct tttgcgtcgc cag 163

<210> 535
<211> 185
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 535
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aggcggggtc cgagtcaccg cctgccgccg cgcccccggt ttctataaat tgagcccgca 120

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gccag 185

<210> 536
<211> 224
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 536
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tcctcctgtt cgacagtcag ccgcatcttc ttttgcgtcg ccag 224

<210> 537
<211> 275
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 537
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gagaaagtag ggcccggcta ctagcggttt tacgggcgca cgtagctcag gcctcaagac 120

cttgggctgg gactggctga gcctggcggg aggcggggtc cgagtcaccg cctgccgccg 180

cgcccccggt ttctataaat tgagcccgca gcctcccgct tcgctctctg ctcctcctgt 240

tcgacagtca gccgcatctt cttttgcgtc gccag 275

<210> 538
<211> 122
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 538
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tcccgcttcg ctctctgctc ctcctgttcg acagtcagcc gcatcttctt ttgcgtcgcc 120

ag 122

<210> 539
<211> 167
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 539
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gctctctgct cctccctgtt ctagagacag ccgcatcttc ttgtgcagtg ccaggctctc 120

tgctcctcct gttcgacagt cagccgcatc ttcttttgcg tcgccag 167

<210> 540
<211> 190
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 540
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tacggactgc agccctccct ggtgctctct gctcctccct gttctagaga cagccgcatc 120

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gcgtcgccag 190

<210> 541
<211> 211
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 541
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ccaccatcca gttcctataa atacggactg cagccctccc tggtgctctc tgctcctccc 120

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cagtcagccg catcttcttt tgcgtcgcca g 211

<210> 542
<211> 239
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 542
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gaggcggggc gcgcgtcatc agctcccccc accatccagt tcctataaat acggactgca 120

gccctccctg gtgctctctg ctcctccctg ttctagagac agccgcatct tcttgtgcag 180

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<210> 543
<211> 278
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 543
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cctctgcgcc cttgagctgg gactggatga gccgagcggg aggcggggcg cgcgtcatca 120

gctcccccca ccatccagtt cctataaata cggactgcag ccctccctgg tgctctctgc 180

tcctccctgt tctagagaca gccgcatctt cttgtgcagt gccaggctct ctgctcctcc 240

tgttcgacag tcagccgcat cttcttttgc gtcgccag 278

<210> 544
<211> 413
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 544
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cccctccccc tctcaggtcg gagcccacac gcttggtgcg tgcacatttc aaaaacgagg 120

cgggtccaaa aagagggagg gggggaatga gagaggccca gctactcgcg gctttacggg 180

tgcacgtagc tcaggcctct gcgcccttga gctgggactg gatgagccga gcgggaggcg 240

gggcgcgcgt catcagctcc ccccaccatc cagttcctat aaatacggac tgcagccctc 300

cctggtgctc tctgctcctc cctgttctag agacagccgc atcttcttgt gcagtgccag 360

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<210> 545
<211> 508
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 545
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tagtcaggaa gttcccccccc gccccgcagc tcgcgtcgtg caggacgtga caaatggaag 240

tagcacgact cactagtctc gtgcagatgg acagcaccgc tgagcaatgg aagcgggtag 300

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cctcttcctc atctccgggc ctttcgtc 508

<210> 546
<211> 460
<212> DNA
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<220>
<223> Synthetic

<400> 546
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taggcgccaa ccggctccgt tctttggtgg ccccttcgcg ccaccttcta ctcctccct 180

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cctttggggc agcggccaat agcagctttg ctccttcgct ttctgggctc aggggcgggg 360

cgggcgcccg aaggtcctcc ggaggcccgg cattctgcac gcttcaaaag cgcacgtctg 420

ccgcgctgtt ctcctcttcc tcatctccgg gcctttcgtc 460

<210> 547
<211> 466
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 547
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ccgttcgcag cgtcacccgg atcttcgccg ctacccttgt gggccccccg gcgacgcttc 180

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cgcgccgacc gcgatgggct gtggccaata gcggctgctc agcagggcgc gccgagagca 360

gcggccggga aggggcggtg cgggaggcgg ggtgtggggc ggtagtgtgg gccctgttcc 420

tgcccgcgcg gtgttccgca ttctgcaagc ctccggagcg cacgtc 466

<210> 548
<211> 458

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 548
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tagtcaggaa gttccccccc gccccgcagc tcgcgtcgtg caggacgtga caaatggaag 240

tagcacgact cactagtctc gtgcagatgg acagcaccgc tgagcaatgg aagcgggtag 300

gcctttgggg cagcggccaa tagcagcttt gctccttcgc tttctgagag cagcggccgg 360

gaaggggcgg tgcgggaggc ggggtgtggg gcggtagtgt gggccctgtt cctgcccgcg 420

cggtgttccg cattctgcaa gcctccggag cgcacgtc 458

<210> 549
<211> 523
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 549
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ctttgggtgt ggctcctgaa ccgcggctgc agaagctacg ggcctctcaa actttccacg 120

tccaagtcgt agcacgacgc agctcccttc cgccccacct gcaggtcgct cgatgccgcc 180

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cttctctcag tctccaacct ctcgccctcg ccttattgcc acc 523

<210> 550
<211> 527

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 550
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ctctgggcgt ggttccggga aacgcagcgg cgccgacctt gggtcttgca cattcttcac 120

gtccgttcgc agcgtcaccc ggatcttcgc cgctaccctt gtgggccccc cggcgacgct 180

tcctgctccg cccctaagtc gggaaggttc cttgcggttc gcggcgtgcc ggacgtgaca 240

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cagcggccgg gaaggggcgg tgcgggaggc ggggtgtggg gcggtagtgt ggcccctgtt 420

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<211> 660
<212> DNA
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<220>
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<400> 551
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tagcacgact cactagtctc gtgcagatgg acagcaccgc tgagcaatgg aagcgggtag 300

gcctttgggg cagcggccaa tagcagcttt gctccttcgc tttctgggct caggggcggg 360

gcgggcgccc gaaggtcctc cggaggcccg gcattctgca cgcttcaaaa gcgcacgtct 420

gccgcgctgt tctcctcttc ctcatctccg ggcctttcgt caagcttgga cacaagacag 480

gcttgcgaga tatgtttgag aataccactt tatcccgcgt cagggagagg cagtgcgtaa 540

aaagacgcgg actcatgtga aatactggtt tttagtgcgc cagatctcta taatctcgcg 600

caacctattt tcccctcgaa cacttttaa gccgtagata aacaggctgg gacacttcac 660

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<211> 1092
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 552
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cttatatttt cctaaagaag gaagagaagc gcatagagga gaagggaaat aatttttag 120

gagcctttct tacggctatg aggaatttgg ggctcagttg aaaagcctaa actgcctctc 180

gggaggttgg gcgcggcgaa ctactttcag cggcgcacgc agacggcgtc tacgtgaggg 240

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cgtgagaggg gggaatgggt gaggtcaagc tggaggcttc ttggggttgg gtgggccgct 480

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aaccaacagc gattccgtcg cgtttacttg ggaggaaggc ggaaaagagg tagtttgtgt 660

ggcttctgga aaccctaaat ttggaatccc agtatgagaa tggtgtccct tcttgtgttt 720

caatgggatt tttacttcgc gagtcttgtg ggtttggttt tgttttcagt ttgcctaaca 780

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ttgaaacctt gaatgacgaa tttcgtatta agtgacttag ccttgtaaaa ttgaggggag 960

gcttgcggaa tattaacgta tttaaggcat tttgaaggaa tagttgctaa ttttgaagaa 1020

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taaactaggt ca 1092

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<212> DNA
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<220>
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<400> 553
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atatttgcat gtctttagtt ctatgatgac acaaaccccg cccagcgtct tgtcattggc 120

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acgcgtgtgg cctcgaacac agagcgactc tgcag 215

<210> 554
<211> 753
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 554
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gggggagggg gaaggaacga aacactctca ttcggaggcg gctcggggtt tggtcttggt 120

ggccacgggc acgcagaaga gcgccgcgat cctcttaagc acccccccgc cctccgtgga 180

ggcgggggtt tggtcggcgg gtggtaactg gcgggccgct gactcgggcg ggtcgcgcgc 240

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ttctatgatg acacaaaccc cgcccagcgt cttgtcattg gcgaattcga acacgcagat 660

gcagtcgggg cggcgcggtc ccaggtccac ttcgcatatt aaggtgacgc gtgtggcctc 720

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<210> 555
<211> 270

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 555
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atgtttccac ccaatgtcga gcaaaccccg cccagcgtct tgtcattggc gaattcgaac 180

acgcagatgc agtcggggcg gcgcggtccc aggtccactt cgcatattaa ggtgacgcgt 240

gtggcctcga acaccgagcg accctgcagg 270

<210> 556
<211> 149
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 556
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ttatttatgc agaggccgag gccgcctcgg cctctgagct attccagaag tagtgaggag 120

gctttttgg aggtataggc ttttgcaaa 149

<210> 557
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 557
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tttgcaaa 128

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<211> 408
<212> DNA
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<220>
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<400> 558
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atatttgcat gtctttagtt ctatgatgac acaaaccccg cccagcgtct tgtcattggc 120

gaaaacacgc agatgcagtc ggggcggcgc ggtcccaggt ccacttcgca tattaaggtg 180

acgcgtgtgg cctcgaacac agagcgactc tgcagggaca caagacaggc ttgcgagata 240

tgtttgagaa taccacttta tcccgcgtca gggagaggca gtgcgtaaaa agacgcggac 300

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ccctcgaaca ctttttaagc cgtagataaa caggctggga cacttcac 408

<210> 559
<211> 193
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 559
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aggcagtgcg taaaaagacg cggactcatg tgaaatactg gtttttagtg cgccagatct 120

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tgggacactt cac 193

<210> 560
<211> 318
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 560
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aactcttcgc ggtctttcca gtactcttgg atcggaaacc cgtcggcctc cgaacggtac 120

tccgccaccg agggacctga gcgagtccgc atcgaccgga tcggaaaacc tctcgagaaa 180

ggcgtctaac cagtcacagt cgcaaggtag gctgagcacc gtggcgggcg gcagcgggtg 240

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gagagggcgg atggtcga 318

<210> 561
<211> 827
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 561
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agcctatagg tgtgggttat tgaccattat tgaccactcc cctattggtg acgatacttt 180

ccattactaa tccataacat ggctctttgc cacaactctc tttattggct atatgccaat 240

acactgtcct tcagagactg acacggactc tgtatttta caggatgggg tctcatttat 300

tatttacaaa ttcacatata caacaccacc gtccccagtg cccgcagttt ttattaaaca 360

taacgtggga tctccacgcg aatctcgggt acgtgttccg gacatgggct cttctccggt 420

agcggcggag cttctacatc cgagccctgc tcccatgcct ccagcgactc atggtcgctc 480

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cgggcttgca ccgctgacgc atttggaaga cttaaggcag cggcagaaga agatgcaggc 660

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gtggagggca gtgtagtctg agcagtactc gttgctgccg cgcgcgccac cagacataat 780

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<220>
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<400> 562
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agcctatagg tgtgggttat tgaccattat tgaccactcc cctattggtg acgatacttt 180

ccattactaa tccataacat ggctctttgc cacaactctc tttattggct atatgccaat 240

acactgtcct tcagagactg acacggactc tgtatttta caggatgggt tctcatttat 300

tatttacaaa ttcacatata caacaccacc gtccccagtg cccgcagttt ttattaaaca 360

taacgtggga tctccacgcg aatctcgggt acgtgttccg gacatgggtt cttctccggt 420

agcggcggag cttctacatc cgagccctgc tcccatgcct ccagcgactc atggtcgctc 480

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accagtgtgc cgcacaaggc cgtggcggta gggtatgtgt ctgaaaatga gctcggggag 600

cgggcttgca ccgctgacgc atttgaaaga cttaaggcag cggcagaaga agatgcaggc 660

agctgagttg ttgtgttctg ataagagtca gaggtaactc ccgttgcggt gctgttaacg 720

gtggagggca gtgtagtctg agcagtactc gttgctgccg cgcgcgccac cagacataat 780

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<211> 825
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 563
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gggtgatagc aagtagaacg ctggtgatgg ttgctctcta tcagtttagc gctggtgatg 180

gtggcctcct tctccatttc ttatatatat atgctggtga tggtccctct tccatggccg 240

cggtgtgctt cggtgccggg taccgtaacg tggtacagaa aaaggcctga cacgtacgcg 300

tctctcccta ggatgctatg tgtctgtagc accggcggag cttgcgagct cgatgtccaa 360

gatagagtct ccatgactgc tcagatcgtc tcctgtgttc acacaccaga tattacaagc 420

gacggccgcc atgataagtc caaaaatgag cagaatacag aatattgtac tcagaggctg 480

cagccatctt ggtggcctgc tgtggtgctc ttttcccgtg gaggactccg tcagttcctg 540

cgtgttgttg ctcgtactgc gaagatctct cttgccccgt cctgaaaacc taggccctga 600

cagaaaaaag ggagagttag gagagggcac agaggattct gtctgtgtca agggggcttc 660

catgttgttt ctttacctga gatctcttcc accagttgtt ttttatcagc aactgacagg 720

tagtatatca aaatgagtgc actgatgatt attagcactg tatactttag atatcttctg 780

gtctctgtgg acatctgttg atgataaaaa attatatttt tttag 825

<210> 564
<211> 1246
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 564
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cgtaattaga agccccctac cacgccattg gcgcccgccc atagcggtac tttcggttct 180

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gacccctagc ggctgcttgt atttttatat cagagatcga aaatcacagc cgcccgtaac 360

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cctgcttccg aaacgcaacc cacccccggg gtatgtgcct tagaccctat agatgccccc 480

caggacgcag gaaaaatttt agctcccctc tataatttta ttcgagcgat cgaaatccgc 540

ggaccgcccg ggtttttact ttcgttttct cggtcgccgc tcggctcgga ttccgagcag 600

aaaaagggct agaaagctgc gctcacctgc cgaaacgcgt tgttcggatc atcccgggag 660

ggccagcgta gtctccgttg ctgggttcgg ccgagggatc gagtcgagcg ggcggcggga 720

cgccgggaac gagagaggat cgggagcggg cgcccgggtg gctcgggagc ggccgggaga 780

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gacggtgtgc ggcccaggcc tcggacgacc ctggcccggg cttccttctt cctgatccag 1140

gtagattgac gtgcggacat cgcgaacgac cgcagtcttc ctgatctttg aatgactcga 1200

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<210> 565
<211> 1246
<212> DNA
<213> Artificial sequence

<220>
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<400> 565
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cgtaattaga agccccctac cacgccattg gcgcccgccc atagcggtac tttcggttct 180

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cctgcttccg aaacgcaacc caccccgggg gtatgtgcct tagaccctat agatgccccc 480

caggacgcag gaaaaatttt agctcccctc tataatttta ttcgagcgat cgaaatccgc 540

ggaccgcccg ggtttttact ttcgttttct cggtcgccgc tcggctcgga ttccgagcag 600

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ggccagcgta gtctccgttg ctgggttcgg ccgagggatc gagtcgagcg ggcggcggga 720

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gacggtgtgc ggcccaggcc tcggacgacc ctggcccggg cttccttctt cctgatccag 1140

gtagattgac gtgcggacat cgcgaacgac cgcagtgttc ctgatctttg aatgactcga 1200

gtacatgagc gcacctttcg agactgatct ctcttgttct ccatag 1246

<210> 566
<211> 114
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 566
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catatctcct gtatgtgacc catgtgctta tgactctatt tctcatgtgt ttag 114

<210> 567
<211> 170
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 567
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gtatgtcaga tagagtaaag attaactctt gcatgtgagc ggggcatcga gatagcgata 120

aatgagtcag gaggacggat acttatatgt gttgttatcc tcctctacag 170

<210> 568
<211> 122
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 568
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tctgtctttc atattcaccc acacagaaca cttgagttat acaaaccact cttatattcc 120

ag 122

<210> 569
<211> 174
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 569
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tgataggatg agcttattaa cctcggggtg gttcatgcat gtgtcaggct gggggtggag 120

agacagctgt ggaacttagt gactcatgac agctatctct gttatcctcc acag 174

<210> 570
<211> 97
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 570
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cccctgactc atggtcttcc cactcttgtt ctctcag 97

<210> 571
<211> 856
<212> DNA
<213> Artificial sequence

<220>
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<400> 571
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cggctgctaa ttgtcgaggc cagactcagg cagatcacga tccccaccac tattaccatg 540

ccgcccaggg ccgaggctgt ggggtatgcc tctaacaacg agcccgggga ccctacatgg 600

gtccacggac tctctgctgt ctggagactt aaggccaggg aagaagagac agatgatgaa 660

gtccctgaca gctgagaaga aaaggtaagg gagctcgtta ctcccgtggt gttgtgatag 720

ttaacagcgg tggagggtag ttgtcgctca gtcgtcactg ccgccagcag agggagacat 780

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gcacttcacc agagag 856

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<211> 181
<212> DNA
<213> Artificial sequence

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<400> 572
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gtatgtcaga tagagtaaag attaactctt gcatgtgagc ggggcatcga gatagcgata 120

aatgagtcag gaggacggag cctctgctaa ccatgttcat gccttcttct ttttcctaca 180

g 181

<210> 573
<211> 213
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 573
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gtatgtcaga tagagtaaag attaactctt gcatgtgagc ggggcatcga gatagcgata 120

aatgagtcag gaggacggat acttatatgt gttgttatcc tcctctacag agcctctgct 180

aaccatgttc atgccttctt ctttttccta cag 213

<210> 574
<211> 841

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 574
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gtttttggct tggggtctat acacccccgc ttcctcatgt tataggtgat ggtatagctt 120

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g 841

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<211> 850
<212> DNA
<213> Artificial sequence

<220>
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<400> 575
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<220>
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<400> 576
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g 181

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aaccatgttc atgccttctt ctttttccta cag 213

<210> 578
<211> 841
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 578
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agcctatagg tgtgggttat tgaccattat tgaccactcc cctattggtg acgatacttt 180

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tatttacaaa ttcacatata caacaccacc gtccccagtg cccgcagttt ttattaaaca 360

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<400> 579
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cggctgctaa ttgtcgaggc cagactcagg cagatcacga tccccaccac tattaccatg 540

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gtccacggac tctctgctgt ctggagactt aaggccaggg aagaagagac agatgatgaa 660

gtccctgaca gctgagaaga aaaggtaagg gagctcgtta ctcccgtggt gttgtgatag 720

ttaacagcgg tggagggcag tgtagtctga gcagtactcg ttgctgccgc gcgcgccacc 780

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<210> 580
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 580
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<400> 587
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<400> 593
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atgggcgggg aacggatatg agccatagaa tgtactgcca agtgggccat ttaccgttca 180

ccacgcccct attgacgtca atgacggtaa atggcccgcc tggctgtacg ccaattgcat 240

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gataggatga gcttattaac ctcggggtgg ttcatgcatg tgtcaggctg ggggtggaga 780

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<220>
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tactaacctg catgggacgt ggatttactt gtgtatgtca gatagagtaa agattaactc 840

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<213> Artificial sequence

<220>
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ccgcctggct gaccgcccaa cgacccccgc ccattgacgt caataatgac gtatgttccc 180

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gctcgtttag tgaaccgtca gatcgcctgg agacgccatc cacgctgttt tgacctccat 660

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<213> Artificial sequence

<220>
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aattcaaagc aagccgccac c 1581

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<400> 632
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<212> DNA
<213> Artificial sequence

<220>
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<400> 633
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<211> 1669
<212> DNA
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<400> 634
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<211> 1088
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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<210> 636
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<212> DNA
<213> Artificial sequence

<220>
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<400> 636
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<210> 637
<211> 930
<212> DNA
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<220>
<223> Synthetic

<400> 637
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ccgcctggct gaccgcccaa cgacccccgc ccattgacgt caataatgac gtatgttccc 180

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atgtgaaaag agatgatagg atgagcttat taacctcggg gtggttcatg catgtgtcag 840

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tccacagtta agcagattaa ggccgccacc 930

<210> 638
<211> 895
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 638
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ataacttacg gtaaatggcc cgcctggctg accgcccaac gacccccgcc cattgacgtc 180

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ggagtattta cggtaaactg cccacttggc agtacatcaa gtgtatcata tgccaagtcc 300

gcccccctatt gacgtcaatg acggtaaatg gcccgcctgg cattatgccc agtacatgac 360

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cgccgatcag gcatccgtca acgcccacgg ccgtcacttg gataagaacc gtgtctaccc 720

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<210> 639
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<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 639
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ccaagctgtc tagagccgcc acc 623

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<211> 1695
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 640
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<210> 641
<211> 870
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 641
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acatgtatgt gatgtatact aacctgcatg ggacgtggat ttacttgtgt atgtcagata 720

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<210> 642
<211> 1937
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 642
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<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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<220>
<223> Synthetic

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actcgttgct gccgcgcgcg ccaccagaca taatagctga cagactaaca gactgttcct 1440

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gtctagagcc gccacc 1516

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<211> 1133
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 645
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tatttacggt aaactgccca cttggcagta catcaagtgt atcatatgcc aagtacgccc 180

cctattgacg tcaatgacgg taaatggccc gcctggcatt atgcccagta catgacctta 240

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caggccgcgt gcagccgcga gcggtgctgg gctccggctc caattcccca tctcagtcgt 420

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tcctgctgcc cacagtccag tcctgggaac cagcaccgat cacctcccat cgggccaatc 540

tcagtccctt ccccctacg tcggggccca cacgctcggt gcgtgcccag ttgaaccagg 600

cggctgcgga aaaaaaaaag cggggagaaa gtagggcccg gctactagcg gttttacggg 660

cgcacgtagc tcaggcctca agaccttggg ctgggactgg ctgagcctgg cgggaggcgg 720

ggtccgagtc accgcctgcc gccgcgcccc cggtttctat aaattgagcc cgcagcctcc 780

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gggaggcgtg tgtgtcggcc ggggccacta ggcgctcact gttctctccc tccgcgcagc 1080

cgagccacat cgctccgtct caggggacac ccaagctgtc tagagccgcc acc 1133

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<211> 534
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 646
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccagcacatc 300

gcccacagtc cccgagaagt tgggggggagg ggtcggcaat tgaaccggtg cctagagaag 360

gtggcgcggg gtaaactggg aaagtgatgt cgtgtactgg ctccgccttt ttcccgaggg 420

tgggggagaa ccgtatataa gtgcagtagt cgccgtgaac gttcttttc gcaacgggtt 480

tgccgccaga acacagcgtc tcaggggaca cccaagctgt ctagagccgc cacc 534

<210> 647
<211> 1516
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 647
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccatgctgat 300

gcggttttgg cagtacacca atgggcgtgg atagcggttt gactcacggg gatttccaag 360

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aaaatgtcgt aataaccccg ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga 480

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gtctagagcc gccacc 1516

<210> 648
<211> 878
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 648
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccaatgacgt 300

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ctcagtccct tccccctac gtcggggccc acacgctcgg tgcgtgccca gttgaaccag 600

gcggctgcgg aaaaaaaaaa gcggggagaa agtagggccc ggctactagc ggttttacgg 660

gcgcacgtag ctcaggcctc aagaccttgg gctgggactg gctgagcctg gcgggaggcg 720

gggtccgagt caccgcctgc cgccgcgccc ccggtttcta taaattgagc ccgcagcctc 780

ccgcttcgct ctctgctcct cctgttcgac agtcagccgc atcttctttt gcgtcgccag 840

cgtctcaggg gacacccaag ctgtctagag ccgccacc 878

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<211> 1489
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 649
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ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccagcacatc 300

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tgggggagaa ccgtatataa gtgcagtagt cgccgtgaac gttcttttтc gcaacgggtt 480

tgccgccaga acacaggtaa gtgccgtgtg tggttcccgc gggcctggcc tctttacggg 540

ttatggccct tgcgtgcctt gaattacttc cacgcccctg gctgcagtac gtgattcttg 600

atcccgagct tcgggttgga agtgggtggg agagttcgag gccttgcgct taaggagccc 660

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<210> 650
<211> 1516
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 650
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccatgctgat 300

gcggttttgg cagtacacca atgggcgtgg atagcggttt gactcacggg gatttccaag 360

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aaaatgtcgt aataaccccg ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga 480

ggtctatata agcagagctc gtttagtgaa ccgtcagatc gcctggagag gccatccacg 540

ctgttttgac ctccatagtg gacaccggga ccgatccagc ctccgcggcc gggaacggtg 600

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ttccatgggt cttttctgca gtcaccgtcc ttgacacgcg tctcagggga cacccaagct 1500

gtctagagcc gccacc 1516

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<211> 1516
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

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ttccatgggt cttttctgca gtcaccgtcc ttgacacgcg tctcagggga cacccaagct 1500

gtctagagcc gccacc 1516

<210> 652
<211> 558
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 652
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aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 120

gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

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gcggttttgg cagtacacca atgggcgtgg atagcggttt gactcacggg gatttccaag 360

tctccacccc attgacgtca atgggagttt gttttggcac caaaatcaac gggactttcc 420

aaaatgtcgt aataaccccg ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga 480

ggtctatata agcagagctc gtttagtgaa ccgtcagatc cgtctcaggg gacacccaag 540

ctgtctagag ccgccacc 558

<210> 653
<211> 1133
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 653
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atgacgtatg ttcccatagt aacgccaata gggactttcc attgacgtca atgggtggag 120

tatttacggt aaactgccca cttggcagta catcaagtgt atcatatgcc aagtacgccc 180

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caggccgcgt gcagccgcga gcggtgctgg gctccggctc caattcccca tctcagtcgt 420

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cgcacgtagc tcaggcctca agaccttggg ctgggactgg ctgagcctgg cgggaggcgg 720

ggtccgagtc accgcctgcc gccgcgcccc cggtttctat aaattgagcc cgcagcctcc 780

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<211> 361
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 654
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tgcatctcaa ttagtcagca accatagtcc cgcccctaac tccgcccatc ccgcccctaa 180

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aggccgaggc cgcctcggcc tctgagctat tccagaagta gtgaggaggc ttttttggag 300

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c 361

<210> 655
<211> 1469
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 655
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gtggcgcggg gtaaactggg aaagtgatgt cgtgtactgg ctccgccttt ttcccgaggg 420

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cacctcgatt agttctggag cttttggagt acgtcgtctt taggttgggg ggaggggttt 1260

tatgcgatgg agtttcccca cactgagtgg gtggagactg aagttaggcc agcttggcac 1320

ttgatgtaat tctccttgga atttggcctt tttgagtttg gatcttggtt cattctcaag 1380

cctcagacag tggttcaaag ttttttttctt ccatttcagg tgtcctgaac acgtctcagg 1440

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<210> 656
<211> 1062
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 656
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aatgacgtat gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga 120

gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

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gcggttttgg cagtacacca atgggcgtgg atagcggttt gactcacggg gatttccaag 360

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aaaatgtcgt aataaccccg ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga 480

ggtctatata agcagagctc gtttagtgaa ccgtcagatc ctcactctct tccgcatcgc 540

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gtactcttgg atcggaaacc cgtcggcctc cgaacggtac tccgccaccg agggacctga 660

gcgagtccgc atcgaccgga tcggaaaacc tctcgagaaa ggcgtctaac cagtcacagt 720

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attacttctg cgctaagatt gtcagtttcc aaaaacgagg aggatttgat attcacctgg 960

cccgatctgg ccatacactt gagtgacaat gacatccact ttgcctttct ctccacaggt 1020

gtccactccc aggggacacc caagctgtct agagccgcca cc 1062

<210> 657
<211> 1516
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 657
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccatgctgat 300

gcggttttgg cagtacacca atgggcgtgg atagcggttt gactcacggg gatttccaag 360

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aaaatgtcgt aataaccccg ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga 480

ggtctatata agcagagctc gtttagtgaa ccgtcagatc gcctggagag gccatccacg 540

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actctgtatt tttacaggat gggttctcat ttattattta caaattcaca tatacaacac 960

caccgtcccc agtgcccgca gtttttatta aacataacgt gggatctcca cgcgaatctc 1020

gggtacgtgt tccggacatg ggttcttctc cggtagcggc ggagcttcta catccgagcc 1080

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ggccagactt aggcacagca cgatgcccac caccaccagt gtgccgcaca aggccgtggc 1200

ggtagggtat gtgtctgaaa atgagctcgg ggagcgggct tgcaccgctg acgcatttga 1260

aagacttaag gcagcggcag aagaagatgc aggcagctga gttgttgtgt tctgataaga 1320

gtcagaggta actcccgttg cggtgctgtt aacggtggag ggcagtgtag tctgagcagt 1380

actcgttgct gccgcgcgcg ccaccagaca taatagctga cagactaaca gactgttcct 1440

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gtctagagcc gccacc 1516

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<211> 1062
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 658
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

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gcggttttgg cagtacacca atgggcgtgg atagcggttt gactcacggg gatttccaag 360

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aaaatgtcgt aataaccccg ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga 480

ggtctatata agcagagctc gtttagtgaa ccgtcagatc ctcactctct tccgcatcgc 540

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cgcaaggtag gctgagcacc gtggcgggcg gcagcgggtg gcggtcgggg ttgtttctgg 780

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attacttctg cgctaagatt gtcagtttcc aaaaacgagg aggatttgat attcacctgg 960

cccgatctgg ccatacactt gagtgacaat gacatccact ttgcctttct ctccacaggt 1020

gtccactccc aggggacacc caagctgtct agagccgcca cc 1062

<210> 659
<211> 1080
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 659
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

acgggacttt cctacttggc agtacatcta cgtattagtc atcgctatta ccaatgacgt 300

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ccgcttcgct ctctgctcct cctgttcgac agtcagccgc atcttctttt gcgtcgccag 840

cgtctcaggg gccctggcag aactcggtaa gtctgttgac atgtatgtga tgtatactaa 900

cctgcatggg acgtggattt acttgtgtat gtcagataga gtaaagatta actcttgcat 960

gtgagcgggg catcgagata gcgataaatg agtcaggagg acggatactt atatgtgttg 1020

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<210> 660
<211> 1043
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 660
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tccccgagaa gttgggggga ggggtcggca attgaacggg tgcctagaga aggtggcgcg 360

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ccgtcggcct ccgaacggta ctccgccacc gagggacctg agcgagtccg catcgaccgg 660

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ccaagctgtc tagagccgcc acc 1043

<210> 661
<211> 1076
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

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<211> 1080
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 662
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gcgcacgtag ctcaggcctc aagaccttgg gctgggactg gctgagcctg gcgggaggcg 720

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gtgagcgggg catcgagata gcgataaatg agtcaggagg acggatactt atatgtgttg 1020

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<212> DNA
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<220>
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<400> 663
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aaccgtatat aagtgcagta gtcgccgtga acgttctttt tcgcaacggg tttgccgcca 480

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tgagtgacaa tgacatccac tttgcctttc tctccacagg tgtccactcc caggggacac 1020

ccaagctgtc tagagccgcc acc 1043

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<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 664
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gcctccgggg acacccaagc tgtctagagc cgccacc 697

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<211> 1670
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

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ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt 240

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<210> 666
<211> 1469
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 666
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gtatttacgg taaactgccc acttggcagt acatcaagtg tatcatatgc caagtccgcc 180

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ggacacccaa gctgtctaga gccgccacc 1469

<210> 667
<211> 1311
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 667
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<211> 1755
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 668
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<210> 669
<211> 1547

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 669
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ctcaggggtc gtctcagggg acacccaagc tgtctagagc cgccacc 1547

<210> 670
<211> 1797
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 670
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<210> 671
<211> 769
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 671
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cgtccttgac acggccgcgg ggacacccaa gctgtctaga gccgccacc 769

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<211> 904
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 672
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<211> 1544
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 673
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<210> 674
<211> 1568
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 674
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<210> 675
<211> 1190
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 675
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<211> 922
<212> DNA
<213> Artificial sequence

<220>
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<400> 676
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<220>

<223> Synthetic

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<211> 1488
<212> DNA
<213> Artificial sequence

<220>
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<211> 1513
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 680
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<211> 1049
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 681
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<210> 682
<211> 1036
<212> DNA
<213> Artificial sequence

<220>
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<400> 682
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<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 683
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<400> 684
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<211> 1450
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<213> Artificial sequence

<220>
<223> Synthetic

<400> 685
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<211> 1474
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 686
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<400> 689
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<220>
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ccgatctggc catacacttg agtgacaatg acatccactt tgcctttctc tccacaggtg 1080

tccactccca ggtccaagtt taaacgccgc cacc 1114

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gtgatgtcgt gtactggctc cgccttttc ccgagggtgg gggagaaccg tatataagtg 360

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gaactcggta agtctgttga catgtatgtg atgtatacta acctgcatgg gacgtggatt 480

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agcgataaat gagtcaggag gacggatact tatatgtgtt gttatcctcc tctacagtca 600

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<220>
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<400> 703
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ttcatgtgac tccacggagt accgggcgcc gtccaggcac ctcgattagt tctggagctt 1200

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ctttggccgc cacc 1454

<210> 709
<211> 1015
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 709
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cgccgcccca ccctccgcta gggccaagag taattcatac aaaaggaggg atcgccttcg 180

caaggggaga gcccagggac cgtccctaaa ttctcacaga cccaaatccc tgtagccgcc 240

ccacgacagc gcgaggagca tgcgctcagg gctgagcgcg gggagagcag agcacacaag 300

ctcatagacc ctggtcgtgg gggggaggac cggggagctg gcgcggggca aactgggaaa 360

gcggtgtcgt gtgctggctc cgccctcttc ccgagggtgg gggagaacgg tatataagtg 420

cggcagtcgc cttggacgtt ctttttcgca acgggtttgc cgtcagaacg cagtcagatc 480

ctcactctct tccgcatcgc tgtctgcgag ggccagctgt tgggctcgcg gttgaggaca 540

aactcttcgc ggtctttcca gtactcttgg atcggaaacc cgtcggcctc cgaacggtac 600

tccgccaccg agggacctga gcgagtccgc atcgaccgga tcggaaaacc tctcgagaaa 660

ggcgtctaac cagtcacagt cgcaaggtag gctgagcacc gtggcgggcg gcagcgggtg 720

gcggtcgggg ttgtttctgg cggaggtgct gctgatgatg taattaaagt aggcggtctt 780

gagacggcgg atggtcgagg tgaggtgtgg caggcttgag atccagctgt tggggtgagt 840

actccctctc aaaagcgggc attacttctg cgctaagatt gtcagtttcc aaaaacgagg 900

aggatttgat attcacctgg cccgatctgg ccatacactt gagtgacaat gacatccact 960

ttgcctttct ctccacaggt gtccactccc aggtccaagt ttaaacgccg ccacc 1015

<210> 710
<211> 1181

<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 710
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agggtggggg agaaccgtat ataagtgcag tagtcgccgt gaacgttctt tttcgcaacg 180

ggtttgccgc cagaacacag gtaagtgccg tgtgtggttc ccgcgggcct ggcctcttta 240

cgggttatgg cccttgcgtg ccttgaatta cttccacctg gctccagtac gtgattcttg 300

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agttgaggcc tggcctgggc gctggggccg ccgcgtgcga atctggtggc accttcgcgc 420

ctgtctcgct gctttcgata agtctctagc catttaaaat ttttgatgac gtgctgcgac 480

gctttttttc tggcaagata gtcttgtaaa tgcgggccag gatctgcaca ctggtatttc 540

ggtttttggg cccgcggccg gcgacggggc ccgtgcgtcc cagcgcacat gttcggcgag 600

gcggggcctg cgagcgcggc caccgagaat cggacggggg tagtctcaag ctggccggcc 660

tgctctggtg cctggcctcg cgccgccgtg tatcgccccg ccctgggcgg caaggctggc 720

ccggtcggca ccagttgcgt gagcggaaag atggccgctt cccggccctg ctccaggggg 780

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caggcacctc gattagttct ggagcttttg gagtacgtcg tctttaggtt gggggggaggg 960

gttttatgcg atggagtttc cccacactga gtgggtggag actgaagtta ggccagcttg 1020

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caagcctcag acagtggttc aaagtttttt tcttccattt cagagcttcc ttcttctttt 1140

tcctagaagc tcagaataaa cgctcaactt tggccgccac c 1181

<210> 711
<211> 669
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 711
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ccattgacgt caataatgac gtatgttccc atagtaacgc caatagggac tttccattga 120

cgtcaatggg tggagtattt acggtaaact gcccacttgg cagtacatca agtgtatcat 180

atgccaagtc cgccccctat tgacgtcaat gacggtaaat ggcccgcctg gcattatgcc 240

cagtacatga ccttacggga ctttcctact tggcagtaca tctacgtatt agtcatcgct 300

attaccaagt cattgggttt ttccagccaa tttataaaac gccatgtact ttcccaccat 360

tgacgtcaat gggctattga aactaatgca acgtgacctt taaacggtac tttcccatag 420

ctgattaatg ggaaagtacc gttctcgagc caatacacgt caatgggaag tgaaagggca 480

gccaaaacgt aacaccgccc cggttttccc ctggaaattc catattggca cgcattctat 540

tggctgagct gcgttctacg tgggtataag aggcgcgacc agcgtcggta ccgtcgcagt 600

cttgggtctg accaccgtag aacgcagagc tcctcgctgc agtatcctgc ccaagaaaga 660

gccgccacc 669

<210> 712
<211> 575
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 712
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ttccattggg ttttgcccag tacaaaaggt caatagggggg tgagtcaatg ggtttttccc 180

attattggca cgtacataag gtcaataggg gtgagtcatt gggtttttcc agccaattta 240

taaaacgcca tgtactttcc caccattgac gtcaatgggc tattgaaact aatgcaacgt 300

gacctttaaa cggtactttc ccatagctga ttaatgggaa agtaccgttc tcgagccaat 360

acacgtcaat gggaagtgaa agggcagcca aaacgtaaca ccgccccggt tttcccctgg 420

aaattccata ttggcacgca ttctattggc tgagctgcgt tctacgtggg tataagaggc 480

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cgctgcagta tcctgcccaa gaaagagccg ccacc 575

<210> 713
<211> 671
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 713
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ccattgacgt caataatgac gtatgttccc atagtaacgc caatagggac tttccattga 120

cgtcaatggg tggagtattt acggtaaact gcccacttgg cagtacatca agtgtatcat 180

atgccaagtc cgccccctat tgacgtcaat gacggtaaat ggcccgcctg gcattatgcc 240

cagtacatga ccttacggga ctttcctact tggcagtaca tctacgtatt agtcatcgct 300

attaccatgg tgatgcggtt ttggcagtac accaatgggc gtggatagcg gtttgactca 360

cggggatttc caagtctcca ccccattgac gtcaatggga gtttgttttg gcaccaaaat 420

caacgggact ttccaaaatg tcgtaataac cccgccccgt tgacgcaaat gggcggtagg 480

cgtgtacggt gggaggtcta tataagcaga gctcgtttag tgaaccgtca gatcgcctgg 540

agaggccatc cacgctgttt tgacctccat agtggacacc gggaccgatc cagcctccgc 600

ggccgggaac ggtgcattgg aacgcggatt ccccgtgcca agagtgacgt ccaagtttaa 660

acgccgccac c 671

<210> 714
<211> 577
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 714
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ttccattggg ttttgcccag tacaaaaggt caataggggg tgagtcaatg ggtttttccc 180

attattggca cgtacataag gtcaataggg gtgtggtgat gcggttttgg cagtacacca 240

atgggcgtgg atagcggttt gactcacggg gatttccaag tctccacccc attgacgtca 300

atgggagttt gttttggcac caaaatcaac gggactttcc aaaatgtcgt aataaccccg 360

ccccgttgac gcaaatgggc ggtaggcgtg tacggtggga ggtctatata agcagagctc 420

gtttagtgaa ccgtcagatc gcctggagag gccatccacg ctgttttgac ctccatagtg 480

gacaccggga ccgatccagc ctccgcggcc gggaacggtg cattggaacg cggattcccc 540

gtgccaagag tgacgtccaa gtttaaacgc cgccacc 577

<210> 715
<211> 462
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 715
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gcccacagac agctgagctg taaacaaatg tcacatggaa ataaatactt tatcttgtga 120

actcacttta ttgtgaagga atttgttttg tttttcaaac ctttcctgcg gtgttgacag 180

cccaaggatt atctgaatag agcctaggaa ctggaaatgg aacagtgcag tctgatggta 240

cttaagggag aaagagggaa aggaggtgtg gaagaagaaa aaagagaagc aaggggggag 300

ggagaaaggg agagggagag ggagagggag agggagaggg agagggagag ggagagggag 360

agggagaggg agagggagag ggaggggggag agagagagag agagagagag agagagagag 420

agagagagag agagagagag agagcatgca ctctaacagc aa 462

<210> 716
<211> 463
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 716
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gcccacagac agctgagctg taaacaaatg tcacatggaa ataaatactt tatcttgtga 120

actcacttta ttgtgaagga atttgttttg tttttcaaac ctttcctgcg gtgttgacag 180

cccaaggatt atctgaatag agcctaggaa ctggaaatgg aacagtgcag tctgatggta 240

cttaagggag aaagagggaa aggaggtgtg gaagaagaaa aaagagaagc aaggggggagg 300

gggagaaagg gagagggaga gggagaggga gagggagagg gagagggaga gggagaggga 360

gagggagagg gagagggagg gggaggggga gagagagaga gagagagaga gagagagaga 420

gagagagaga gagagagaga gagagcatgc actctaacag caa 463

<210> 717
<211> 449
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 717
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tctggctaat aaaggaaatt tattttcatt gcaatagtgt gttggaattt tttgtgtctc 120

tcactcggaa ggacatatgg gagggcaaat catttaaaac atcagaatga gtatttggtt 180

tagagtttgg caacatatgc ccatatgctg gctgccatga acaaaggttg gctataaaga 240

ggtcatcagt atatgaaaca gccccctgct gtccattcct tattccatag aaaagccttg 300

acttgaggtt agatttttt tatattttgt tttgtgttat ttttttcttt aacatcccta 360

aaattttcct tacatgtttt actagccaga tttttcctcc tctcctgact actcccagtc 420

atagctgtcc ctcttctctt atggagatc 449

<210> 718
<211> 415
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 718
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gcccacagac agctgagctg taaacaaatg tcacatggaa ataaatactt tatcttgtga 120

actcacttta ttgtgaagga atttgttttg tttttcaaac ctttcctgcg gtgttgacag 180

cccaaggatt atctgaatag agcctaggaa ctggaaatgg aacagtgcag tctgatggta 240

cttaagggag aaagagggaa aggaggtgtg gaagaagaaa aaagagaagc aaggggggagg 300

gggagaaagg gagagggaga gggagaggga gagggagagg gagagggaga gggagaggga 360

gagggagagg gagagggagg gggaggggga gagagagcat gcactctaac agcaa 415

<210> 719
<211> 284
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 719
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aaatcaatgg tttccacatc tgtgtgtgcc tgtgtcaccg acccaggtag ggctggcctt 120

gggggagggg gaggccagaa tgactccaag agctacagga aggcaggtca gagaaggggg 180

agggggggggc ggcgcgcagt gtggatctta tatctagtcc ccaggggggag ggggcaataa 240

aagatcttta ttttcattag atctgtgtgt tggttttttg tgtg 284

<210> 720
<211> 353
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 720
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aaatcaatgg tttccacatc tgtgtgtgcc tgtgtcaccg acccaggtag ggctggcctt 120

gggggagggg gaggccagaa tgactccaag agctacagga aggcaggtca gagatcccac 180

tggacaaaca gtggctggac tctgcaccat aacacacaat caacagggga gtgagctgga 240

tccaggggga gggggggcg gcgcgcagtg tggatcttat atctagtccc caggggggagg 300

gggcaataaa agatctttat tttcattaga tctgtgtgtt ggttttttgt gtg 353

<210> 721
<211> 424
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 721
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tccttgcacc ggcccttcct ggtctttgaa taaactgtac ttggctcact ctccttctcc 120

ttacatagga aattacccag ttatgaaatt aataaaaagc cagtgatccc cacatttgtc 180

tgtgcctctg cctaggggct ggcctgggag gggagaaaaa ggccagaata attccaggaa 240

ccgccaagaa ggcaggtcag agatcttgct ggacaaacag tggctgaact ctgttcctta 300

acagagtcag cagcaggggg agggggggggc ggcgcgcagt gtggatctta tatctagtcc 360

ccaggggggag ggggcaataa aagatcttta ttttcattag atctgtgtgt tggtttttg 420

tgtg 424

<210> 722
<211> 330
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 722
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aaaagccagt gatccccaca tttgtctgtg cctctgccta ggggctggcc tgggagggga 120

gaaaaaggcc agaataattc caggaaccgc caagaaggca ggtcagagat cttgctggac 180

aaacagtggc tgaactctgt tccttaacag agtcagcagc agggggaggg gggggcggcg 240

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<210> 723
<211> 463
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 723
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gcccacagac agctgagctg taaacaaatg tcacatggaa ataaatactt tatcttgtga 120

actcacttta ttgtgaagga atttgttttg tttttcaaac ctttcctgcg gtgttgacag 180

cccaaggatt atctgaatag agcctaggaa ctggaaatgg aacagtgcag tctgatggta 240

cttaagggag aaagagggaa aggaggtgtg gaagaagaaa aaagagaagc acgggggagg 300

gggagaaagg gagagggaga gggagaggga gagggagagg gagagggaga gggagaggga 360

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gagagagaga gagagagaga gagagcatgc actctaacag caa 463

<210> 724
<211> 239
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 724
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gtgaaaaaaa tgctttattt gtgaaatttg tgatgctatt gctttatttg taaccattat 120

aagctgcaat aaacaagtta acaacaacaa ttgcattcat tttatgtttc aggttcaggg 180

ggagatgtgg gaggtttttt aaagcaagta aaacctctac aaatgtggta agaagacag 239

<210> 725
<211> 147
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 725
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aaatttcaca aataaagcat ttttttcact gcattctagt tgtggtttgt ccaaactcat 120

caatgtatct tatcatgtcg aagacag 147

<210> 726
<211> 287
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 726
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tatgacggca ataaaaagac agaataaaac gcacgggtgt tgggtcgttt gttcataaac 120

gcggggttcg gtcccagggc tggcactctg tcgatacccc accgagtccc cattggggcc 180

aatacgcccg cgtttcttcc ttttccccac cccacccccc aagttcgggt gaaggcccag 240

ggctcgcagc caacgtcggg gcggcaggcc ctgccatagg aagacag 287

<210> 727
<211> 65
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 727
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gacag 65

<210> 728
<211> 264
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 728
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caatgtatct tatcatgtca aatcgataat atatggtagg gttcatagcc agagtaacct 180

ttttttttaa tttttatttt attttatttt tgagtcgggc gcgccaaaat gaagtgaagt 240

tcctatactt tctagagaag acag 264

<210> 729
<211> 404
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 729
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tatgacggca ataaaaagac agaataaaac gcacgggtgt tgggtcgttt gttcataaac 120

gcggggttcg gtcccagggc tggcactctg tcgatacccc accgagtccc cattggggcc 180

aatacgcccg cgtttcttcc ttttccccac cccacccccc aagttcgggt gaaggcccag 240

ggctcgcagc caacgtcggg gcggcaggcc ctgccataga aatcgataat atatggtagg 300

gttcatagcc agagtaacct tttttttaa ttttatttt attttatttt tgagtcgggc 360

gcgccaaaat gaagtgaagt tcctatactt tctagagaag acag 404

<210> 730
<211> 347
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 730
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tcacttgccc acttagacac aattactaac accacacccc ctcttttatt tctctgtact 180

taatgttttc tgaataaagt gatcctattg tacccacatt aaagacttct ttaactcttt 240

atggttcaca ggacccgaga tgaacataga tattgttaca gcagcggcct ccatgtcagg 300

tataactact gcctcacaca gcgccctgcc aatcagaagg aagacag 347

<210> 731
<211> 280
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 731
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gcctgtgaaa ccgtactaag tctcccgtgt cttcttatca ccatcaggtg acatcctcgc 120

ccaggctgtc aatcatgccg gtatcgattc cagtagcacc ggccccacgc tgacaaccca 180

ctcttgcagc gttagcagcg cccctcttaa caagccgacc cccaccagcg tcgcggttac 240

taacactcct ctccccgggg catccgctac tcccgagctc 280

<210> 732
<211> 852
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 732
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actgtttgtt tcaattggcc atttaagttt agtagtaaaa gactggttaa tgataacaat 120

gcatcgtaaa accttcagaa ggaaaggaga atgttttgtg gaccactttg gttttctttt 180

ttgcgtgtgg cagttttaag ttattagttt ttaaaatcag tacttttttaa tggaaacaac 240

ttgaccaaaa atttgtcaca gaattttgag atccattaaa aaagttaaat gagaaacctg 300

tgtgttcctt tggtcaacac cgagacattt aggtgaaagc atatactgag attgagatta 360

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attacaaact tgctcactac aataaatgaa ttttaagctt taagatgaag tggcatttct 480

tttaacagtt actatgttgg aattggttac aaattttgga gtggactatt gtatatatat 540

atcagttact gttatggatc ccacgtcact attgtatact ctatattata ctctatgtta 600

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gtcttgttat caccatcagg tgacatcctc gcccaggctg tcaatcatgc cggtatcgat 720

tccagtagca ccggccccac gctgacaacc cactcttgca gcgttagcag cgcccctctt 780

aacaagccga cccccaccag cgtcgcggtt actaacactc ctctccccgg ggcatccgct 840

actcccgagc tc 852

<210> 733
<211> 675
<212> DNA
<213> Artificial sequence

<220>

<223> Synthetic

<400> 733
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catcggaaaa ccttcaggag gaaaggagaa tgttttgtgg aacatttttg tgtgtgtggc 180

agttttaagt tattagtttt caaaatcagt acttttttaat ggaaacaact tgaccaaaaa 240

tctgtcacag aattttgaac ccattaaaat acaagtttaa tgagaagtct gtctctgtta 300

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caagggattg gactgttcat caggacccag agctgtgtat actctatatt atactctatg 420

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gattccagta gcaccggccc cacgctgaca acccactctt gcagcgttag cagcgcccct 600

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<220>
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gaaagactgg ttaatgataa caatgcatcg gaaaaccttc aggaggaaag gagaatgttt 540

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<220>
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<400> 735
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<211> 469
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 736
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tttcacatgg gatttcccag ttatgaaatt aataaaaatc agtgatttcc acatctgtgt 180

gtgcctgtgc caggctgggt ggggaacagg aggccgagat gattccggga actgtcagaa 240

ggaatcaatg atttccacat cctgtctgtc ttatgtcttg gggggtgggg aggccaggaa 300

gattccagga aggtcagagt caatcaatgg tttccacatc tctcagtgcc tctatctgga 360

ggccaggtag ggctggcctt gggggagggg gaggccagaa tgactccaag agctacagga 420

agggggggagg gggaaaaagg ccagaataat tccaggaacc gccaagaag 469

<210> 737
<211> 682
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 737
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ggccatttaa gtttagtagt aaaagactgg ttaatgataa caatgcatcg taaaaccttc 480

agaaggaaag gagaatgttt tgtggaccac tttggttttc ttttttgcgt gtggcagttt 540

taagttatta gtttttaaaa tcagtacttt ttaatggaaa caacttgacc aaaaatttgt 600

cacagaattt tgagatccat taaaaaagtt aaatgagaaa cctgtgtgtt cctttggtca 660

acaccgagac atttaggtga aa 682

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<211> 748
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 738
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tggctgccat gaacaaaggt tggctataaa gaggtcatca gtatatgaaa cagccccctg 300

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gatttttcct cctctcctga ctactcccag tcatagctgt ccctcttctc ttatggagat 480

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atcggaaaac cttcaggagg aaaggagaat gttttgtgga acatttttgt gtgtgtggca 660

gttttaagtt attagttttc aaaatcagta ctttttaatg gaaacaactt gaccaaaaat 720

ctgtcacaga attttgaacc cattaaaa 748

<210> 739
<211> 851
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 739
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catcgtaaaa ccttcagaag gaaaggagaa tgttttgtgg accactttgg ttttcttttt 180

tgcgtgtggc agttttaagt tattagtttt taaaatcagt acttttaat ggaaacaact 240

tgaccaaaaa tttgtcacag aattttgaga tccattaaaa aagttaaatg agaaacctgt 300

gtgttccttt ggtcaacacc gagacattta ggtgaaagca tatactgaga ttgagattaa 360

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ctcccgagct c 851

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<211> 760
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<220>
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ttgcaatagt gtgttggaat tttttgtgtc tctcactcgg aagaacatat gggagggcaa 180

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tggctgccat gaacaaaggt tggctataaa gaggtcatca gtatatgaaa cagccccctg 300

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atcggaaaac cttcaggagg aaaggagaat gttttgtgga acatttttgt gtgtgtggca 660

gttttaagtt attagttttc aaaatcagta ctttttaatg gaaacaactt gaccaaaaat 720

ctgtcacaga attttgaacc cattaaaagt taaatgagaa 760

<210> 741
<211> 358
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 741
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cactgcattc tagttgtggt ttgtccaaac tcatcaatgt atcttatcat gtcaaatcga 240

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<212> DNA
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<220>
<223> Synthetic

<400> 742
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tgcctgtgtc accgacccag gtagggctgg ccttgggggа gggggaggcc agaatgactc 240

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ccataacaca caatcaacag gggagtgagc tggatccagg gggaggggggg ggcggcgcgc 360

agtgtggatc ttatatctag tccccagggg gaggggggcaa taaaagatct ttattttcat 420

tagatctgtg tgttggtttt ttgtgtg 447

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<211> 333
<212> DNA
<213> Artificial sequence

<220>
<223> Synthetic

<400> 743
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acaattgcat tcattttatg tttcaggttc agggggagat gtgggaggtt ttttaaagca 300

agtaaaacct ctacaaatgt ggtaagaaga cag 333

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<211> 543
<212> DNA
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<220>
<223> Synthetic

<400> 744
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tgggaacatc atgaagcccc ttgagcatct agcttctggc taataaagga aatttatttt 180

cattgcaata gtgtgttgga atttttttgtg tctctcactc ggaaggacat atgggagggc 240

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gctggctgcc atgaacaaag gttggctata aagaggtcat cagtatatga aacagccccc 360

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ttgttttgtg ttatttttttt ctttaacatc cctaaaattt tccttacatg ttttactagc 480

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<211> 1509
<212> DNA
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<220>
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gcccgcgttt cttccttttc cccaccccac cccccaagtt cgggtgaagg cccagggctc 240

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<211> 1904
<212> DNA
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<220>
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<212> DNA
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<220>
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<400> 747
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<220>
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<400> 748
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gttcggtccc agggctggca ctctgtcgat accccaccga gtccccattg gggccaatac 180

gcccgcgttt cttccttttc cccaccccac cccccaagtt cgggtgaagg cccagggctc 240

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