SEQUENCE LISTING

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<120> THERAPEUTIC COMPOUNDS AND METHODS

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<160> 20

<170> PatentIn version 3.5

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<211> 623
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

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

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
20 25 30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
35 40 45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
50 55 60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65 70 75 80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

```
Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
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```
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Gln Val Gln
    370                 375                 380

Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val Lys
385                 390                 395                 400

Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met His
                405                 410                 415

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Tyr Ile
            420                 425                 430

Tyr Pro Tyr Asn Gly Gly Thr Gly Tyr Asn Gln Lys Phe Lys Ser Lys
        435                 440                 445

Ala Thr Ile Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr Met Glu Leu
    450                 455                 460

Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly
465                 470                 475                 480

Arg Pro Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
                485                 490                 495

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
            500                 505                 510

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
        515                 520                 525

Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Ser Val Asp Asn Tyr
    530                 535                 540
```

```
Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Lys Ala Pro
545                 550                 555                 560


Lys Leu Leu Ile Tyr Ala Ala Ser Asn Gln Gly Ser Gly Val Pro Ser
                565                 570                 575


Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
            580                 585                 590


Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Lys
        595                 600                 605


Glu Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
    610                 615                 620


<210>  2
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<220>
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<400>  2

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


Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30


Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45


Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60


Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80


Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95
```

```
Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys
            260                 265                 270

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr
        275                 280                 285

Phe Thr Asp Tyr Asn Met His Trp Val Arg Gln Ala Pro Gly Gln Gly
    290                 295                 300

Leu Glu Trp Ile Gly Tyr Ile Tyr Pro Tyr Asn Gly Gly Thr Gly Tyr
```

305 310 315 320

Asn Gln Lys Phe Lys Ser Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr
325 330 335

Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala
340 345 350

Val Tyr Tyr Cys Ala Arg Gly Arg Pro Ala Met Asp Tyr Trp Gly Gln
355 360 365

Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly
370 375 380

Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser
385 390 395 400

Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala
405 410 415

Ser Glu Ser Val Asp Asn Tyr Gly Ile Ser Phe Met Asn Trp Phe Gln
420 425 430

Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn
435 440 445

Gln Gly Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr
450 455 460

Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr
465 470 475 480

Tyr Tyr Cys Gln Gln Ser Lys Glu Val Pro Trp Thr Phe Gly Gln Gly
485 490 495

Thr Lys Val Glu Ile Lys
500

<210> 3
<211> 20
<212> PRT

<213> Artificial

<220>
<223> Polypeptide

<400> 3

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

Asn His Ala Tyr
20

<210> 4
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 4

Glu Ala Ser Gly Gly Pro Glu
1 5

<210> 5
<211> 596
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 5

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

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
20 25 30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
35 40 45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
50 55 60

```
Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

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

Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His
            260                 265                 270

Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln
```

```
        275                 280                 285

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

Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser Asn Gly Asn Val
305                 310                 315                 320

Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys Asn Ile
                325                 330                 335

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

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

Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr
    370                 375                 380

Asp Tyr Asn Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu
385                 390                 395                 400

Trp Ile Gly Tyr Ile Tyr Pro Tyr Asn Gly Gly Thr Gly Tyr Asn Gln
                405                 410                 415

Lys Phe Lys Ser Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Asn Thr
            420                 425                 430

Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr
        435                 440                 445

Tyr Cys Ala Arg Gly Arg Pro Ala Met Asp Tyr Trp Gly Gln Gly Thr
    450                 455                 460

Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
465                 470                 475                 480

Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu
                485                 490                 495
```

```
Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu
            500                 505                 510

Ser Val Asp Asn Tyr Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys
        515                 520                 525

Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn Gln Gly
    530                 535                 540

Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
545                 550                 555                 560

Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr
                565                 570                 575

Cys Gln Gln Ser Lys Glu Val Pro Trp Thr Phe Gly Gln Gly Thr Lys
            580                 585                 590

Val Glu Ile Lys
        595
```

<210> 6
<211> 624
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 6

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Met Glu Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp
1               5                   10                  15

Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp
            20                  25                  30

Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu
        35                  40                  45

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

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

Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys
                85                  90                  95

Asn Ile Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe
            100                 105                 110

Ile Asn Thr Ser Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser
        115                 120                 125

Leu Phe Val Ser Asn His Ala Tyr Glu Val Gln Leu Val Glu Ser Gly
    130                 135                 140

Gly Gly Val Val Arg Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala
145                 150                 155                 160

Ser Gly Phe Thr Phe Asp Asp Tyr Gly Met Ser Trp Val Arg Gln Ala
                165                 170                 175

Pro Gly Lys Gly Leu Glu Trp Val Ser Gly Ile Asn Trp Asn Gly Gly
            180                 185                 190

Ser Thr Gly Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg
        195                 200                 205

Asp Asn Ala Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala
    210                 215                 220

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Arg Ser Leu Leu Phe
225                 230                 235                 240

Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Arg Gly Gly Gly
                245                 250                 255

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Glu Leu Thr
            260                 265                 270

Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln Thr Val Arg Ile Thr
```

```
        275                 280                 285

Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln
    290                 295                 300

Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr Gly Lys Asn Asn Arg
305                 310                 315                 320

Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Asn Thr
                325                 330                 335

Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu Asp Glu Ala Asp Tyr
            340                 345                 350

Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asn His Val Val Phe Gly Gly
        355                 360                 365

Gly Thr Lys Leu Thr Val Leu Glu Ala Ser Gly Gly Pro Glu Gln Val
    370                 375                 380

Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser Ser Val
385                 390                 395                 400

Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Asn Met
                405                 410                 415

His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile Gly Tyr
            420                 425                 430

Ile Tyr Pro Tyr Asn Gly Gly Thr Gly Tyr Asn Gln Lys Phe Lys Ser
        435                 440                 445

Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr Met Glu
    450                 455                 460

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg
465                 470                 475                 480

Gly Arg Pro Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
                485                 490                 495
```

```
Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            500                 505                 510

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
        515                 520                 525

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Glu Ser Val Asp Asn
    530                 535                 540

Tyr Gly Ile Ser Phe Met Asn Trp Phe Gln Gln Lys Pro Gly Lys Ala
545                 550                 555                 560

Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn Gln Gly Ser Gly Val Pro
                565                 570                 575

Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
            580                 585                 590

Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser
        595                 600                 605

Lys Glu Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
    610                 615                 620
```

<210> 7
<211> 623
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 7

```
Met Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45
```

```
Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys
```

```
            260                 265                 270

Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr
        275                 280                 285

Phe Thr Asp Tyr Asn Met His Trp Val Arg Gln Ala Pro Gly Gln Gly
    290                 295                 300

Leu Glu Trp Ile Gly Tyr Ile Tyr Pro Tyr Asn Gly Gly Thr Gly Tyr
305                 310                 315                 320

Asn Gln Lys Phe Lys Ser Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr
                325                 330                 335

Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala
            340                 345                 350

Val Tyr Tyr Cys Ala Arg Gly Arg Pro Ala Met Asp Tyr Trp Gly Gln
        355                 360                 365

Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly
    370                 375                 380

Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser
385                 390                 395                 400

Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala
                405                 410                 415

Ser Glu Ser Val Asp Asn Tyr Gly Ile Ser Phe Met Asn Trp Phe Gln
            420                 425                 430

Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn
        435                 440                 445

Gln Gly Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr
    450                 455                 460

Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp Phe Ala Thr
465                 470                 475                 480
```

```
Tyr Tyr Cys Gln Gln Ser Lys Glu Val Pro Trp Thr Phe Gly Gln Gly
                485                 490                 495

Thr Lys Val Glu Ile Lys Glu Ala Ser Gly Gly Pro Glu Asn Trp Val
            500                 505                 510

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

His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His Pro Ser Cys
    530                 535                 540

Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln Val Ile Ser
545                 550                 555                 560

Leu Glu Ser Gly Asp Ala Ser Ile His Asp Thr Val Glu Asn Leu Ile
                565                 570                 575

Ile Leu Ala Asn Asp Ser Leu Ser Ser Asn Gly Asn Val Thr Glu Ser
            580                 585                 590

Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys Asn Ile Lys Glu Phe
        595                 600                 605

Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn Thr Ser
    610                 615                 620
```

<210> 8
<211> 634
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 8

```
Met Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30
```

```
Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
```

```
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Asp Ile Gln
    370                 375                 380

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
385                 390                 395                 400

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

Thr Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
            420                 425                 430

Leu Ile Tyr Gln Met Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe
        435                 440                 445

Ser Ser Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu
    450                 455                 460
```

```
Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Ala Gln Asn Leu Glu Ile
465                 470                 475                 480

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

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

Asn Ser Gly Thr Ser Gly Glu Val Gln Leu Val Gln Ser Gly Pro Gly
        515                 520                 525

Leu Val Gln Pro Gly Gly Ser Val Arg Ile Ser Cys Ala Ala Ser Gly
    530                 535                 540

Tyr Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly
545                 550                 555                 560

Lys Gly Leu Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Ser
                565                 570                 575

Thr Tyr Ala Asp Ser Phe Lys Gly Arg Phe Thr Phe Ser Leu Asp Thr
            580                 585                 590

Ser Ala Ser Ala Ala Tyr Leu Gln Ile Asn Ser Leu Arg Ala Glu Asp
        595                 600                 605

Thr Ala Val Tyr Tyr Cys Ala Arg Phe Ala Ile Lys Gly Asp Tyr Trp
    610                 615                 620

Gly Gln Gly Thr Leu Leu Thr Val Ser Ser
625                 630
```

<210> 9
<211> 901
<212> PRT
<213> Artificial

<220>
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<400> 9

```
Met Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly
1               5                  10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
```

```
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Asp Ile Gln
    370                 375                 380

Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val
385                 390                 395                 400

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

Thr Tyr Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu
            420                 425                 430
```

```
Leu Ile Tyr Gln Met Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe
        435                 440                 445

Ser Ser Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu
    450                 455                 460

Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Ala Gln Asn Leu Glu Ile
465                 470                 475                 480

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

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

Asn Ser Gly Thr Ser Gly Glu Val Gln Leu Val Gln Ser Gly Pro Gly
        515                 520                 525

Leu Val Gln Pro Gly Gly Ser Val Arg Ile Ser Cys Ala Ala Ser Gly
    530                 535                 540

Tyr Thr Phe Thr Asn Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly
545                 550                 555                 560

Lys Gly Leu Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Ser
                565                 570                 575

Thr Tyr Ala Asp Ser Phe Lys Gly Arg Phe Thr Phe Ser Leu Asp Thr
            580                 585                 590

Ser Ala Ser Ala Ala Tyr Leu Gln Ile Asn Ser Leu Arg Ala Glu Asp
        595                 600                 605

Thr Ala Val Tyr Tyr Cys Ala Arg Phe Ala Ile Lys Gly Asp Tyr Trp
    610                 615                 620

Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Glu Pro Lys Ser Ser Asp
625                 630                 635                 640

Lys Thr His Thr Ser Pro Pro Ser Pro Asp Ile Val Leu Ser Gln Ser
```

```
                645                 650                 655

Pro Ala Ile Met Ser Ala Ser Pro Gly Glu Lys Val Thr Ile Ser Cys
            660                 665                 670

Ser Ala Ser Ser Ser Val Ser Tyr Met Tyr Trp Tyr Gln Gln Lys Pro
        675                 680                 685

Gly Ser Ser Pro Lys Pro Trp Ile Tyr Arg Thr Ser Asn Leu Ala Ser
    690                 695                 700

Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser
705                 710                 715                 720

Leu Thr Ile Ser Ser Met Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys
                725                 730                 735

Gln Gln Tyr His Ser Tyr Pro Pro Thr Phe Gly Ala Gly Thr Lys Leu
            740                 745                 750

Glu Leu Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly
        755                 760                 765

Ser Ser Arg Ser Ser Leu Glu Val Lys Leu Val Glu Ser Gly Pro Glu
    770                 775                 780

Leu Lys Lys Pro Gly Glu Thr Val Lys Ile Ser Cys Lys Ala Ser Gly
785                 790                 795                 800

Tyr Thr Phe Thr Asp Tyr Ser Met His Trp Val Asn Gln Ala Pro Gly
                805                 810                 815

Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Glu Thr Gly Glu Pro
            820                 825                 830

Ser Tyr Ala Asp Asp Phe Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr
        835                 840                 845

Ser Ala Ser Thr Ala Tyr Leu Gln Ile Asn Asn Leu Lys Asn Glu Asp
    850                 855                 860
```

```
Thr Ala Thr Tyr Phe Cys Ala Thr Asp Tyr Gly Asp Tyr Phe Asp Tyr
865                 870                 875                 880

Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Ala Lys Thr Thr Pro
                885                 890                 895

Pro Ser Val Thr Ser
            900
```

<210> 10
<211> 623
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 10

```
Met Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125
```

```
Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
```

```
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Asp Ile Val
    370                 375                 380

Leu Ser Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly Glu Lys Val
385                 390                 395                 400

Thr Ile Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met Tyr Trp Tyr
                405                 410                 415

Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile Tyr Arg Thr Ser
            420                 425                 430

Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly
        435                 440                 445

Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala Glu Asp Ala Ala
    450                 455                 460

Thr Tyr Tyr Cys Gln Gln Tyr His Ser Tyr Pro Pro Thr Phe Gly Ala
465                 470                 475                 480

Gly Thr Lys Leu Glu Leu Lys Ser Ser Gly Gly Gly Gly Ser Gly Gly
                485                 490                 495

Gly Gly Gly Gly Ser Ser Arg Ser Ser Leu Glu Val Lys Leu Val Glu
            500                 505                 510

Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu Thr Val Lys Ile Ser Cys
        515                 520                 525

Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Ser Met His Trp Val Asn
    530                 535                 540

Gln Ala Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Glu
545                 550                 555                 560
```

```
Thr Gly Glu Pro Ser Tyr Ala Asp Asp Phe Lys Gly Arg Phe Ala Phe
                565                 570                 575

Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr Leu Gln Ile Asn Asn Leu
            580                 585                 590

Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys Ala Thr Asp Tyr Gly Asp
        595                 600                 605

Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
    610                 615                 620
```

<210> 11
<211> 621
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 11

```
Met Glu Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Arg Pro Gly
1               5                   10                  15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110
```

```
Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
```

```
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Gln Val Gln
    370                 375                 380

Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Ser Val Lys
385                 390                 395                 400

Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr Thr Met Asn
                405                 410                 415

Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly Leu Ile
            420                 425                 430

Thr Pro Tyr Asn Gly Ala Ser Ser Tyr Asn Gln Lys Phe Arg Gly Lys
        435                 440                 445

Ala Thr Met Thr Val Asp Thr Ser Thr Ser Thr Val Tyr Met Glu Leu
    450                 455                 460

Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly
465                 470                 475                 480

Gly Tyr Asp Gly Arg Gly Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val
                485                 490                 495

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Gly
            500                 505                 510

Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
        515                 520                 525

Ser Val Gly Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val
    530                 535                 540
```

```
Ser Tyr Met His Trp Tyr Gln Gln Lys Ser Gly Lys Ala Pro Lys Leu
545                 550                 555                 560


Leu Ile Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe
                565                 570                 575


Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu
            580                 585                 590


Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Lys His
        595                 600                 605


Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
    610                 615                 620


<210>  12
<211>  1040
<212>  PRT
<213>  Artificial

<220>
<223>  Polypeptide

<400>  12

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


Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
            20                  25                  30


Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
        35                  40                  45


Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
    50                  55                  60


Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80


Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95
```

```
Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Glu Pro Lys Ser Ser Asp Lys Thr His Thr Ser Pro Pro Ser Pro Asn
                245                 250                 255

Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp Leu Ile Gln
            260                 265                 270

Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His Pro
        275                 280                 285

Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln Val
    290                 295                 300

Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His Asp Thr Val Glu Asn
```

```
305                 310                 315                 320

Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser Asn Gly Asn Val Thr
                325                 330                 335

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

Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn Thr
        355                 360                 365

Ser Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val
    370                 375                 380

Ser Asn His Ala Tyr Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu
385                 390                 395                 400

Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ser Thr Lys
                405                 410                 415

Ser Leu Leu His Ser Asn Gly Ile Thr Tyr Leu Tyr Trp Tyr Gln Gln
            420                 425                 430

Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gln Met Ser Asn Leu
        435                 440                 445

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

Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
465                 470                 475                 480

Tyr Cys Ala Gln Asn Leu Glu Ile Pro Arg Thr Phe Gly Gln Gly Thr
                485                 490                 495

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

Pro Ser Ala Gly Gly Pro Thr Ala Asn Ser Gly Thr Ser Gly Glu Ala
        515                 520                 525
```

```
Ser Gly Gly Pro Glu Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu
    530                 535                 540

Ser Ala Ser Leu Gly Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln
545                 550                 555                 560

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

Val Lys Leu Leu Ile Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro
            580                 585                 590

Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile
        595                 600                 605

Ser Asn Leu Glu Gln Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly
    610                 615                 620

Asn Thr Leu Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
625                 630                 635                 640

Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Thr
                645                 650                 655

Lys Gly Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro
            660                 665                 670

Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser
        675                 680                 685

Ile Tyr Asp Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu
    690                 695                 700

Trp Val Ala Tyr Ile Ser Ser Gly Gly Gly Thr Thr Tyr Tyr Pro Asp
705                 710                 715                 720

Thr Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr
                725                 730                 735

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

740 745 750

Tyr Cys Ala Arg His Ser Gly Tyr Gly Thr His Trp Gly Val Leu Phe
755 760 765

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly Gly
770 775 780

Gly Ser Asp Ile Leu Leu Thr Gln Thr Pro Ala Ser Leu Ala Val Ser
785 790 795 800

Leu Gly Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp
805 810 815

Tyr Asp Gly Asp Ser Tyr Leu Asn Trp Tyr Gln Gln Ile Pro Gly Gln
820 825 830

Pro Pro Lys Leu Leu Ile Tyr Asp Ala Ser Asn Leu Val Ser Gly Ile
835 840 845

Pro Pro Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn
850 855 860

Ile His Pro Val Glu Lys Val Asp Ala Ala Thr Tyr His Cys Gln Gln
865 870 875 880

Ser Thr Glu Asp Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
885 890 895

Lys Arg Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly Glu Gly
900 905 910

Ser Thr Lys Gly Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val
915 920 925

Arg Pro Gly Ser Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala
930 935 940

Phe Ser Ser Tyr Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln Gly
945 950 955 960

```
Leu Glu Trp Ile Gly Gln Ile Trp Pro Gly Asp Gly Asp Thr Asn Tyr
                965                 970                 975

Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Glu Ser Ser
            980                 985                 990

Ser Thr Ala Tyr Met Gln Leu Ser  Ser Leu Ala Ser Glu  Asp Ser Ala
        995                 1000                1005

Val Tyr  Phe Cys Ala Arg Arg  Glu Thr Thr Thr Val  Gly Arg Tyr
    1010                1015                1020

Tyr Tyr  Ala Met Asp Tyr Trp  Gly Gln Gly Thr Ser  Val Thr Val
    1025                1030                1035

Ser Ser
    1040
```

<210> 13
<211> 661
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 13

```
Met Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1               5                   10                  15

Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn
            20                  25                  30

Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu
        35                  40                  45

Ile Tyr Tyr Thr Ser Arg Leu His Ser Gly Val Pro Ser Lys Phe Ser
    50                  55                  60

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Asn Leu Glu
65                  70                  75                  80
```

```
Gln Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro
                85                  90                  95

Trp Thr Phe Ala Gly Gly Thr Lys Leu Glu Ile Lys Arg Gly Gly Gly
            100                 105                 110

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Arg Glu
        115                 120                 125

Val Gln Leu Val Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Thr
    130                 135                 140

Met Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr Thr
145                 150                 155                 160

Met Asn Trp Val Lys Gln Ser His Gly Lys Asn Leu Glu Trp Met Gly
                165                 170                 175

Leu Ile Asn Pro Tyr Lys Gly Val Ser Thr Tyr Asn Gln Lys Phe Lys
            180                 185                 190

Asp Lys Ala Thr Leu Thr Val Asp Thr Ser Thr Asp Thr Ala Tyr Met
        195                 200                 205

Glu Leu Leu Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys Ala
    210                 215                 220

Arg Ser Gly Tyr Tyr Gly Asp Ser Asp Trp Tyr Phe Asp Val Trp Gly
225                 230                 235                 240

Ala Gly Thr Thr Val Thr Val Ser Ser Pro Ser Gly Gln Ala Gly Ala
                245                 250                 255

Ala Ala Ser Glu Ser Leu Phe Val Ser Asn His Ala Tyr Pro Thr Ser
            260                 265                 270

Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp
        275                 280                 285

Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu
```

```
    290                 295                 300

Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu
305                 310                 315                 320

Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu
                325                 330                 335

Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp
            340                 345                 350

Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu
        355                 360                 365

Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu
    370                 375                 380

Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr Leu
385                 390                 395                 400

Thr Glu Ala Ser Gly Gly Pro Glu Asp Ile Gln Met Thr Gln Ser Pro
                405                 410                 415

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg
            420                 425                 430

Ser Thr Lys Ser Leu Leu His Ser Asn Gly Ile Thr Tyr Leu Tyr Trp
        435                 440                 445

Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gln Met
    450                 455                 460

Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Ser Ser Gly Ser
465                 470                 475                 480

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
                485                 490                 495

Ala Thr Tyr Tyr Cys Ala Gln Asn Leu Glu Ile Pro Arg Thr Phe Gly
            500                 505                 510
```

```
Gln Gly Thr Lys Val Glu Leu Lys Arg Ala Thr Pro Ser His Asn Ser
        515                 520                 525

His Gln Val Pro Ser Ala Gly Gly Pro Thr Ala Asn Ser Gly Thr Ser
    530                 535                 540

Gly Glu Val Gln Leu Val Gln Ser Gly Pro Gly Leu Val Gln Pro Gly
545                 550                 555                 560

Gly Ser Val Arg Ile Ser Cys Ala Ala Ser Gly Tyr Thr Phe Thr Asn
                565                 570                 575

Tyr Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Glu Trp
            580                 585                 590

Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Ser Thr Tyr Ala Asp Ser
        595                 600                 605

Phe Lys Gly Arg Phe Thr Phe Ser Leu Asp Thr Ser Ala Ser Ala Ala
    610                 615                 620

Tyr Leu Gln Ile Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
625                 630                 635                 640

Cys Ala Arg Phe Ala Ile Lys Gly Asp Tyr Trp Gly Gln Gly Thr Leu
                645                 650                 655

Leu Thr Val Ser Ser
            660
```

<210> 14
<211> 539
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 14

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

```
Tyr Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
            20                  25                  30

Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Leu Thr Phe Ser
        35                  40                  45

Ser Tyr Asn Met Gly Trp Phe Arg Gln Ala Pro Gly Gln Gly Leu Glu
    50                  55                  60

Ala Val Ala Ser Ile Thr Trp Ser Gly Arg Asp Thr Phe Tyr Ala Asp
65                  70                  75                  80

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr
                85                  90                  95

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
            100                 105                 110

Tyr Cys Ala Ala Asn Pro Trp Pro Val Ala Ala Pro Arg Ser Gly Thr
        115                 120                 125

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ser Gly Gly Gly
    130                 135                 140

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
145                 150                 155                 160

Ser Gly Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp
                165                 170                 175

Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp
            180                 185                 190

Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu
        195                 200                 205

Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His Asp Thr
    210                 215                 220

Val Glu Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn Gly
```

225 230 235 240

Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys
245 250 255

Asn Ile Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe
260 265 270

Ile Asn Thr Ser Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly
275 280 285

Glu Gly Ser Thr Lys Gly Gln Val Gln Leu Val Gln Ser Gly Ala Glu
290 295 300

Val Lys Lys Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly
305 310 315 320

Tyr Thr Phe Thr Asp Tyr Asn Met His Trp Val Arg Gln Ala Pro Gly
325 330 335

Gln Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Pro Tyr Asn Gly Gly Thr
340 345 350

Gly Tyr Asn Gln Lys Phe Lys Ser Lys Ala Thr Ile Thr Ala Asp Glu
355 360 365

Ser Thr Asn Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp
370 375 380

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Arg Pro Ala Met Asp Tyr Trp
385 390 395 400

Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
405 410 415

Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser
420 425 430

Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys
435 440 445

```
Arg Ala Ser Glu Ser Val Asp Asn Tyr Gly Ile Ser Phe Met Asn Trp
    450                 455                 460

Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala
465                 470                 475                 480

Ser Asn Gln Gly Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
                485                 490                 495

Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp Asp Phe
            500                 505                 510

Ala Thr Tyr Tyr Cys Gln Gln Ser Lys Glu Val Pro Trp Thr Phe Gly
        515                 520                 525

Gln Gly Thr Lys Val Glu Ile Lys Val Asp Glu
    530                 535
```

<210> 15
<211> 114
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 15

```
Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp Leu Ile
1               5                   10                  15

Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His
            20                  25                  30

Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln
        35                  40                  45

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

Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn Gly Asn Val
65                  70                  75                  80
```

Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu Lys Asn Ile
85 90 95

Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn
100 105 110

Thr Ser

<210> 16
<211> 623
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 16

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

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
20 25 30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
35 40 45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
50 55 60

Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65 70 75 80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
85 90 95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
115 120 125

```
Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
```

```
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Ala Lys Val
    370                 375                 380

Gln Leu Gln Glu Ser Gly Pro Ser Leu Val Gln Pro Ser Gln Arg Leu
385                 390                 395                 400

Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Ile Ser Tyr Gly Val
                405                 410                 415

His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Leu Gly Val
            420                 425                 430

Ile Trp Arg Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Met Ser Arg
        435                 440                 445

Leu Ser Ile Thr Lys Asp Asn Ser Lys Ser Gln Val Phe Phe Lys Met
    450                 455                 460

Asn Ser Leu Gln Ala Asp Asp Thr Ala Ile Tyr Phe Cys Ala Lys Thr
465                 470                 475                 480

Leu Ile Thr Thr Gly Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Thr
                485                 490                 495

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
            500                 505                 510

Gly Gly Gly Ser Asp Ile Glu Leu Thr Gln Ser Pro Ser Ser Phe Ser
        515                 520                 525

Val Ser Leu Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Glu Asp
    530                 535                 540

Ile Tyr Asn Arg Leu Ala Trp Tyr Gln Gln Lys Pro Gly Asn Ala Pro
545                 550                 555                 560
```

```
Arg Leu Leu Ile Ser Gly Ala Thr Ser Leu Glu Thr Gly Val Pro Ser
                565                 570                 575


Arg Phe Ser Gly Ser Gly Ser Gly Lys Asp Tyr Thr Leu Ser Ile Thr
            580                 585                 590


Ser Leu Gln Thr Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Tyr Trp
        595                 600                 605


Ser Thr Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
    610                 615                 620


<210>  17
<211>  243
<212>  PRT
<213>  Artificial

<220>
<223>  Polypeptide

<400>  17

Met Asp Ile Val Leu Ser Gln Ser Pro Ala Ile Met Ser Ala Ser Pro
1               5                   10                  15


Gly Glu Lys Val Thr Ile Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr
            20                  25                  30


Met Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Pro Trp Ile
        35                  40                  45


Tyr Arg Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly
    50                  55                  60


Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Ser Met Glu Ala
65                  70                  75                  80


Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr His Ser Tyr Pro Pro
                85                  90                  95


Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Ser Ser Gly Gly Gly
            100                 105                 110
```

Gly Ser Gly Gly Gly Gly Gly Gly Ser Ser Arg Ser Ser Leu Glu Val
115 120 125

Lys Leu Val Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu Thr Val
130 135 140

Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr Ser Met
145 150 155 160

His Trp Val Asn Gln Ala Pro Gly Lys Gly Leu Lys Trp Met Gly Trp
165 170 175

Ile Asn Thr Glu Thr Gly Glu Pro Ser Tyr Ala Asp Asp Phe Lys Gly
180 185 190

Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr Leu Gln
195 200 205

Ile Asn Asn Leu Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys Ala Thr
210 215 220

Asp Tyr Gly Asp Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr
225 230 235 240

Val Ser Ser

<210> 18
<211> 132
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 18

Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu
1 5 10 15

Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn
20 25 30

Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys
35 40 45

Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro
50 55 60

Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg
65 70 75 80

Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys
85 90 95

Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr
100 105 110

Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile Ile
115 120 125

Ser Thr Leu Thr
130

<210> 19
<211> 630
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 19

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

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp
20 25 30

Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp
35 40 45

Val Ser Gly Ile Asn Trp Asn Gly Gly Ser Thr Gly Tyr Ala Asp Ser
50 55 60

```
Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu
65                  70                  75                  80

Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr
                85                  90                  95

Cys Ala Arg Gly Arg Ser Leu Leu Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Arg Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        115                 120                 125

Gly Gly Gly Gly Ser Ser Glu Leu Thr Gln Asp Pro Ala Val Ser Val
    130                 135                 140

Ala Leu Gly Gln Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg
145                 150                 155                 160

Ser Tyr Tyr Ala Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val
                165                 170                 175

Leu Val Ile Tyr Gly Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg
            180                 185                 190

Phe Ser Gly Ser Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly
        195                 200                 205

Ala Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser
    210                 215                 220

Ser Gly Asn His Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235                 240

Pro Ser Gly Gln Ala Gly Ala Ala Ala Ser Glu Ser Leu Phe Val Ser
                245                 250                 255

Asn His Ala Tyr Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile
            260                 265                 270

Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu
```

```
        275                 280                 285

Ser Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu
    290                 295                 300

Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His
305                 310                 315                 320

Asp Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asp Ser Leu Ser Ser
                325                 330                 335

Asn Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu
            340                 345                 350

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

Met Phe Ile Asn Thr Ser Glu Ala Ser Gly Gly Pro Glu Met Gly Trp
    370                 375                 380

Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly Val His Ser
385                 390                 395                 400

Gln Val Arg Leu Ser Gln Ser Gly Gly Gln Met Lys Lys Pro Gly Asp
                405                 410                 415

Ser Met Arg Ile Ser Cys Arg Ala Ser Gly Tyr Glu Phe Ile Asn Cys
            420                 425                 430

Pro Ile Asn Trp Ile Arg Leu Ala Pro Gly Lys Arg Pro Glu Trp Met
        435                 440                 445

Gly Trp Met Lys Pro Arg His Gly Ala Val Ser Tyr Ala Arg Gln Leu
    450                 455                 460

Gln Gly Arg Val Thr Met Thr Arg Asp Met Tyr Ser Glu Thr Ala Phe
465                 470                 475                 480

Leu Glu Leu Arg Ser Leu Thr Ser Asp Asp Thr Ala Val Tyr Phe Cys
                485                 490                 495
```

```
Thr Arg Gly Lys Tyr Cys Thr Ala Arg Asp Tyr Tyr Asn Trp Asp Phe
            500                 505                 510

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

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
    530                 535                 540

Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
545                 550                 555                 560

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
                565                 570                 575

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
            580                 585                 590

Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
        595                 600                 605

Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu
    610                 615                 620

Pro Lys Ser Cys Asp Lys
625                 630
```

<210> 20
<211> 140
<212> PRT
<213> Artificial

<220>
<223> Polypeptide

<400> 20

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

Tyr Ser Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro
            20                  25                  30
```

```
Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Leu Thr Phe Ser
        35                  40                  45

Ser Tyr Asn Met Gly Trp Phe Arg Gln Ala Pro Gly Gln Gly Leu Glu
    50                  55                  60

Ala Val Ala Ser Ile Thr Trp Ser Gly Arg Asp Thr Phe Tyr Ala Asp
65                  70                  75                  80

Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr
                85                  90                  95

Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr
            100                 105                 110

Tyr Cys Ala Ala Asn Pro Trp Pro Val Ala Ala Pro Arg Ser Gly Thr
        115                 120                 125

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
    130                 135                 140
```