SEQUENCE LISTING

<110> ALKERMES, INC.

<120> UPAR ANTIBODIES AND FUSION PROTEINS WITH THE SAME

<130> 727600: ALW-3084PC

<140> PCT/US2022/021522
<141> 2022-03-23

<150> 63/165,313
<151> 2021-03-24

<160> 273

<170> PatentIn version 3.5

<210> 1
<211> 118
<212> PRT
<213> Artificial Sequence

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

<400> 1
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
1 5 10 15

Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80

Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ala
        115

<210> 2
<211> 107
<212> PRT
<213> Artificial Sequence

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

<400> 2
Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1   5   10   15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20   25   30

His Trp Tyr Gln Gln Lys Ser Gly Thr Ser Pro Lys Arg Trp Leu Tyr
        35   40   45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50   55   60

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

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85   90   95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100   105

<210> 3
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 3

Gly Phe Asn Ile Lys Asp Glu Tyr
1 5

<210> 4
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 4
Ile Asp Pro Glu Asn Gly Asp Thr
1 5

<210> 5
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 5
Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr
1 5 10

<210> 6
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 6
Ser Ser Val Ser Tyr
1 5

<210> 7
<211> 3
<212> PRT
<213> Artificial Sequence

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

<400> 7
Asp Thr Ser
1

<210> 8
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 8
Gln Gln Trp Ser Ser Asn Pro Pro Tyr
1 5

<210> 9
<211> 117
<212> PRT
<213> Artificial Sequence

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

<400> 9
Gln Val Gln Leu Lys Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln
1 5 10 15

Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asn Tyr
20 25 30

Gly Val His Trp Val Arg Gln Pro Pro Gly Lys Asp Leu Glu Trp Leu
35 40 45

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

Ser Arg Leu Ser Ile Ser Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65 70 75 80

Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Met Tyr Tyr Cys Ala
85 90 95

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

Val Thr Val Ser Ala
115

<210> 10
<211> 112
<212> PRT
<213> Artificial Sequence

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

<400> 10
Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
1 5 10 15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

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

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

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 11
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 11
Gly Phe Ser Leu Thr Asn Tyr Gly
1   5

<210> 12
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 12
Ile Trp Ser Asp Gly Gly Thr
1   5

<210> 13
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 13
Ala Arg Gly Gly Arg Ser Asp Leu Phe Ala Tyr
1   5   10

<210> 14
<211> 11
<212> PRT
<213> Artificial Sequence

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

<400> 14
Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr
1   5   10

<210> 15
<211> 3
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 15
Lys Val Ser
1

<210> 16
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 16
Phe Gln Gly Ser His Val Pro Tyr Thr
1 5

<210> 17
<211> 114
<212> PRT
<213> Artificial Sequence

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

<400> 17
Gln Ile Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
1 5 10 15

Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Asn Thr Phe Thr Asp Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
50 55 60

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

Leu Gln Ile Asn Asn Leu Lys Asn Glu Asp Met Ala Thr Tyr Phe Cys
85 90 95

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
100 105 110

Ser Ser

<210> 18
<211> 107
<212> PRT
<213> Artificial Sequence

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

<400> 18
Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Val Ser Val Gly
1 5 10 15

Gln Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

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

Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 19
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<400> 19
Gly Asn Thr Phe Thr Asp Tyr Gly
1 5

<210> 20
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 20
Ile Asn Thr Asn Thr Gly Glu Pro
1 5

<210> 21
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 21
Ala His Tyr Ser Phe Asp Tyr
1 5

<210> 22
<211> 6
<212> PRT
<213> Artificial Sequence

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

<400> 22
Glu Asn Ile Tyr Ser Asn
1 5

<210> 23
<211> 3
<212> PRT
<213> Artificial Sequence

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

<400> 23
Ala Ala Thr
1

<210> 24
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 24
Gln His Phe Trp Gly Thr Pro Trp Thr
1 5

<210> 25
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 25
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Arg Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Lys Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Arg Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
85 90 95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser
115

<210> 26
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 26
Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly
1 5 10 15

Glu Lys Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Lys Leu Trp
35 40 45

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

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

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

Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105

<210> 27
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 27
Gly Tyr Thr Phe Thr Ser Tyr Gly
1 5

<210> 28
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 28
Ile Tyr Pro Arg Ser Gly Asn Thr
1 5

<210> 29
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 29
Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr
1 5 10

<210> 30
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 30
Ser Ser Val Ser Ser Arg Tyr
1 5

<210> 31
<211> 3

<212> PRT
<213> Artificial Sequence

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

<400> 31
Gly Thr Ser
1

<210> 32
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 32
Gln Gln Tyr His Ser Asp Pro Leu Thr
1 5

<210> 33
<211> 118
<212> PRT
<213> Artificial Sequence

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

<400> 33
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

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

```
Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser
        115


<210> 34
<211> 118
<212> PRT
<213> Artificial Sequence

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

<400> 34
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30


Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45


Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60


Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80


Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser
        115
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<210> 35
<211> 107
<212> PRT
<213> Artificial Sequence

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

<400> 35
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 36
<211> 107
<212> PRT
<213> Artificial Sequence

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

<400> 36
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

```
Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
        35                  40                  45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100                 105


<210> 37
<211> 114
<212> PRT
<213> Artificial Sequence

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

<400> 37
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60

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

```
Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys
                85                  90                  95


Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110


Ser Ser



<210> 38
<211> 107
<212> PRT
<213> Artificial Sequence

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

<400> 38
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15


Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30


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


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


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


Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95


Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100                 105


<210> 39
<211> 107
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 39
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 40
<211> 107
<212> PRT
<213> Artificial Sequence

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

<400> 40
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

<210> 41
<211> 8
<212> PRT
<213> Artificial Sequence

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

<400> 41
Gly Thr Thr Phe Thr Asp Tyr Gly
1 5

<210> 42
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 42
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

```
Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser
        115
```

<210> 43
<211> 119
<212> PRT
<213> Artificial Sequence

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

<400> 43

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

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95
```

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser
115

<210> 44
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 44
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
35 40 45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65 70 75 80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys
100 105

<210> 45
<211> 448
<212> PRT
<213> Artificial Sequence

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

<400> 45
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1   5   10   15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20   25   30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
        35   40   45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50   55   60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100   105   110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115   120   125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130   135   140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145   150   155   160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165   170   175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180   185   190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195   200   205

```
Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430
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Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210> 46
<211> 448
<212> PRT
<213> Artificial Sequence

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

<400> 46
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30


Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45


Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60


Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80


Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125


Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140


Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160
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Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365
```

```
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 47
<211> 213
<212> PRT
<213> Artificial Sequence

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

<400> 47

```
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1               5                   10                  15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
        35                  40                  45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95
```

```
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Thr Val Ala Ala Pro
            100                 105                 110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
        115                 120                 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
    130                 135                 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145                 150                 155                 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
                165                 170                 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
            180                 185                 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
        195                 200                 205

Asn Arg Gly Glu Cys
    210


<210> 48
<211> 213
<212> PRT
<213> Artificial Sequence

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

<400> 48
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1               5                   10                  15

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
        35                  40                  45
```

```
Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Thr Val Ala Ala Pro
            100                 105                 110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
        115                 120                 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
    130                 135                 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145                 150                 155                 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
                165                 170                 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
            180                 185                 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
        195                 200                 205

Asn Arg Gly Glu Cys
    210
```

<210> 49
<211> 444
<212> PRT
<213> Artificial Sequence

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

<400> 49

```
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro
    210                 215                 220
```

```
Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
    290                 295                 300

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
                325                 330                 335

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

Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
385                 390                 395                 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430
```

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440

<210> 50
<211> 213
<212> PRT
<213> Artificial Sequence

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

<400> 50
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Thr Val Ala Ala Pro
100 105 110

Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
115 120 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
130 135 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145 150 155 160

```
Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
                165                 170                 175


Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
            180                 185                 190


Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
        195                 200                 205


Asn Arg Gly Glu Cys
    210


<210> 51
<211> 213
<212> PRT
<213> Artificial Sequence

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

<400> 51
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15


Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30


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


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


Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95


Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Thr Val Ala Ala Pro
            100                 105                 110
```

```
Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
        115                 120                 125

Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
    130                 135                 140

Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145                 150                 155                 160

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
                165                 170                 175

Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
            180                 185                 190

Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
        195                 200                 205

Asn Arg Gly Glu Cys
    210


<210> 52
<211> 213
<212> PRT
<213> Artificial Sequence

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

<400> 52
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30

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

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

```
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95


Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Thr Val Ala Ala Pro
            100                 105                 110


Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
        115                 120                 125


Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
    130                 135                 140


Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
145                 150                 155                 160


Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
                165                 170                 175


Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
            180                 185                 190


Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
        195                 200                 205


Asn Arg Gly Glu Cys
    210


<210> 53
<211> 449
<212> PRT
<213> Artificial Sequence

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

<400> 53
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1               5                   10                  15
```

```
Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro
225                 230                 235                 240
```

```
Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
        435                 440                 445
```

Lys

<210> 54
<211> 449
<212> PRT
<213> Artificial Sequence

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

<400> 54
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

```
Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
                165                 170                 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380
```

```
Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400


Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415


Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430


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


Lys
```

<210> 55
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 55

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


Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
            20                  25                  30


Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
        35                  40                  45


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


Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65                  70                  75                  80


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

```
Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210> 56
<211> 240
<212> PRT
<213> Artificial Sequence

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

<400> 56
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30


Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
```

```
Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

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

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
    130                 135                 140

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240
```

<210> 57
<211> 240
<212> PRT
<213> Artificial Sequence

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

<400> 57
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

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

Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys
130 135 140

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145 150 155 160

Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
165 170 175

Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Val Thr Ile
180 185 190

```
Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205


Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220


Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240


<210> 58
<211> 240
<212> PRT
<213> Artificial Sequence

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

<400> 58
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30


Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45


Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60


Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80


Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95


Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110


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

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

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Ile Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240
```

<210> 59
<211> 240
<212> PRT
<213> Artificial Sequence

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

<400> 59

```
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1               5                   10                  15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
        35                  40                  45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60
```

```
Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu
65                  70                  75                  80

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

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

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

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145                 150                 155                 160

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175

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

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220

Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240


<210> 60
<211> 240
<212> PRT
<213> Artificial Sequence

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

<400> 60
```

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

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

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

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
    130                 135                 140

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220
```

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225 230 235 240

<210> 61
<211> 240
<212> PRT
<213> Artificial Sequence

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

<400> 61
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

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

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

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145 150 155 160

```
Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175


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


Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205


Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220


Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240


<210> 62
<211> 236
<212> PRT
<213> Artificial Sequence

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

<400> 62
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15


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


Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45


Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60


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


Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys
                85                  90                  95
```

```
Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110


Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
        115                 120                 125


Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
    130                 135                 140


Gly Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145                 150                 155                 160


Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175


Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190


Gly Ser Gly Ser Gly Thr Gln Tyr Thr Leu Lys Ile Ser Ser Leu Gln
        195                 200                 205


Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220


Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
225                 230                 235


<210> 63
<211> 236
<212> PRT
<213> Artificial Sequence

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

<400> 63
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15


Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30
```

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser
225                 230                 235
```

<210> 64
<211> 236
<212> PRT
<213> Artificial Sequence

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

<400> 64
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
130 135 140

Gly Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145 150 155 160

Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
165 170 175

```
Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190


Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205


Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220


Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
225                 230                 235


<210> 65
<211> 236
<212> PRT
<213> Artificial Sequence

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

<400> 65
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15


Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30


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


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


Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80


Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95


Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110
```

```
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser
225                 230                 235
```

<210> 66
<211> 236
<212> PRT
<213> Artificial Sequence

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

<400> 66

```
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45
```

```
Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
        115                 120                 125

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
    130                 135                 140

Gly Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145                 150                 155                 160

Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
225                 230                 235
```

<210> 67
<211> 236
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 67

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

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205
```

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
210 215 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser
225 230 235

<210> 68
<211> 242
<212> PRT
<213> Artificial Sequence

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

<400> 68
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

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

Ser Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr
130 135 140

```
Leu Ser Ala Ser Pro Gly Glu Arg Val Thr Met Thr Cys Ser Ala Ser
145                 150                 155                 160


Ser Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly
                165                 170                 175


Ala Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly
            180                 185                 190


Val Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu
        195                 200                 205


Thr Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln
    210                 215                 220


Gln Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu
225                 230                 235                 240


Leu Lys



<210> 69
<211> 242
<212> PRT
<213> Artificial Sequence

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

<400> 69
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1               5                   10                  15


Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
            20                  25                  30


Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
        35                  40                  45


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

```
Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65                  70                  75                  80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly
            100                 105                 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val
        115                 120                 125

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

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

Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro
                165                 170                 175

Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Val Thr
            180                 185                 190

Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser
        195                 200                 205

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

Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
225                 230                 235                 240

Ser Ser
```

<210> 70
<211> 242
<212> PRT
<213> Artificial Sequence

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

<400> 70
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

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

Ser Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr
130 135 140

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

Ser Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly
165 170 175

Ala Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly
180 185 190

Val Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu
195 200 205

Thr Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln
210 215 220

Gln Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu
225 230 235 240

Leu Lys

<210> 71
<211> 242
<212> PRT
<213> Artificial Sequence

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

<400> 71
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
35 40 45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65 70 75 80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly
100 105 110

```
Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Gln
        115                 120                 125


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


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


Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro
                165                 170                 175


Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr
            180                 185                 190


Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser
        195                 200                 205


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


Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
225                 230                 235                 240


Ser Ser
```

<210> 72
<211> 329
<212> PRT
<213> Artificial Sequence

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

<400> 72

```
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1               5                   10                  15


Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30
```

```
Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110

Pro Ala Pro Glu Leu Leu Gly Pro Ser Val Phe Leu Phe Pro Pro Lys
        115                 120                 125

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
    130                 135                 140

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
145                 150                 155                 160

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
                165                 170                 175

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
            180                 185                 190

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
        195                 200                 205

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln
    210                 215                 220

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu
225                 230                 235                 240

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
                245                 250                 255
```

```
Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
            260                 265                 270


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


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
    290                 295                 300


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
305                 310                 315                 320


Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325


<210> 73
<211> 330
<212> PRT
<213> Artificial Sequence

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

<400> 73
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1               5                   10                  15


Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
            20                  25                  30


Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
        35                  40                  45


Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
    50                  55                  60


Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65                  70                  75                  80


Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
                85                  90                  95
```

```
Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
            100                 105                 110

Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
        115                 120                 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
    130                 135                 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240

Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300
```

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

<210> 74
<211> 330
<212> PRT
<213> Artificial Sequence

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

<400> 74
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
100 105 110

Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

```
Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145                 150                 155                 160


Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
                165                 170                 175


Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
            180                 185                 190


His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
        195                 200                 205


Lys Ala Leu Gly Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
    210                 215                 220


Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu
225                 230                 235                 240


Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
                245                 250                 255


Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
            260                 265                 270


Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
        275                 280                 285


Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
    290                 295                 300


Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305                 310                 315                 320


Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
                325                 330
```

<210> 75
<211> 232
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 75

```
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                  10                  15

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            20                  25                  30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        35                  40                  45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    50                  55                  60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65                  70                  75                  80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                85                  90                  95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
    130                 135                 140

Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
            180                 185                 190

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205
```

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
210 215 220

Ser Leu Ser Leu Ser Pro Gly Lys
225 230

<210> 76
<211> 232
<212> PRT
<213> Artificial Sequence

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

<400> 76
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1 5 10 15

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
20 25 30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
35 40 45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
50 55 60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65 70 75 80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
85 90 95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
100 105 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
115 120 125

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
130 135 140

```
Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160


Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175


Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val
            180                 185                 190


Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205


Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    210                 215                 220


Ser Leu Ser Leu Ser Pro Gly Lys
225                 230


<210> 77
<211> 232
<212> PRT
<213> Artificial Sequence

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

<400> 77
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15


Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            20                  25                  30


Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        35                  40                  45


Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    50                  55                  60


Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65                  70                  75                  80
```

```
Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                85                  90                  95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110

Leu Gly Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125

Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
    130                 135                 140

Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
            180                 185                 190

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    210                 215                 220

Ser Leu Ser Leu Ser Pro Gly Lys
225                 230
```

<210> 78
<211> 232
<212> PRT
<213> Artificial Sequence

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

<400> 78

```
Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15
```

```
Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            20                  25                  30

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
        35                  40                  45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    50                  55                  60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65                  70                  75                  80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                85                  90                  95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110

Leu Gly Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Glu Glu Met Thr
    130                 135                 140

Lys Asn Gln Val Ser Leu Ser Cys Ala Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val
            180                 185                 190

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys
    210                 215                 220
```

Ser Leu Ser Leu Ser Pro Gly Lys
225 230

<210> 79
<211> 103
<212> PRT
<213> Artificial Sequence

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

<400> 79
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
35 40 45

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
50 55 60

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
85 90 95

Lys Val Glu Pro Lys Ser Cys
100

<210> 80
<211> 106
<212> PRT
<213> Artificial Sequence

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

<400> 80
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
1 5 10 15

```
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
            20                  25                  30

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
        35                  40                  45

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
    50                  55                  60

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
65                  70                  75                  80

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
                85                  90                  95

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105


<210> 81
<211> 197
<212> PRT
<213> Homo sapiens

<400> 81
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                   10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95
```

```
Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser
        195


<210> 82
<211> 197
<212> PRT
<213> Artificial Sequence

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

<400> 82
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                   10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
    50                  55                  60
```

```
Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80


Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95


Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110


Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125


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


Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160


Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175


Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
            180                 185                 190


Tyr Leu Asn Ala Ser
        195


<210> 83
<211> 197
<212> PRT
<213> Artificial Sequence

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

<400> 83
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                   10                  15


His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20                  25                  30
```

```
Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser
        195


<210> 84
<211> 306
<212> PRT
<213> Homo sapiens

<400> 84
Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1               5                   10                  15
```

```
Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30

Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
        35                  40                  45

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

Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65                  70                  75                  80

Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
                85                  90                  95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
            100                 105                 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115                 120                 125

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

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145                 150                 155                 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220
```

```
Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240


Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
                245                 250                 255


Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270


Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285


Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300


Cys Ser
305


<210> 85
<211> 306
<212> PRT
<213> Artificial Sequence

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

<400> 85
Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1               5                   10                  15


Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30


Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
        35                  40                  45


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


Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65                  70                  75                  80
```

```
Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
                85                  90                  95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
            100                 105                 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115                 120                 125

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

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145                 150                 155                 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
                245                 250                 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285

Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300
```

Cys Ser
305

<210> 86
<211> 306
<212> PRT
<213> Artificial Sequence

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

<400> 86
Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1 5 10 15

Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
20 25 30

Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
35 40 45

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

Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65 70 75 80

Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
85 90 95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
100 105 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
115 120 125

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

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145 150 155 160

```
Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln
                245                 250                 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285

Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300

Cys Ser
305
```

<210> 87
<211> 306
<212> PRT
<213> Artificial Sequence

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

<400> 87

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

```
Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30

Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
        35                  40                  45

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

Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65                  70                  75                  80

Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
                85                  90                  95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
            100                 105                 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115                 120                 125

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

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145                 150                 155                 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220
```

```
Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240


Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln
                245                 250                 255


Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270


Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285


Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300


Cys Ser
305


<210> 88
<211> 513
<212> PRT
<213> Artificial Sequence

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

<400> 88
Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1               5                   10                  15


Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30


Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
        35                  40                  45


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


Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65                  70                  75                  80
```

```
Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
                85                  90                  95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
            100                 105                 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115                 120                 125

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

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145                 150                 155                 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
                245                 250                 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285

Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300
```

```
Cys Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Arg Asn Leu Pro
305                 310                 315                 320

Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu His His Ser Gln
                325                 330                 335

Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys Ala Arg Gln Thr
            340                 345                 350

Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile
        355                 360                 365

Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu
    370                 375                 380

Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr
385                 390                 395                 400

Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Met Ala Leu
                405                 410                 415

Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe
            420                 425                 430

Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe
        435                 440                 445

Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu Met Gln Ala Leu
    450                 455                 460

Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro
465                 470                 475                 480

Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe
                485                 490                 495

Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser Tyr Leu Asn Ala
            500                 505                 510
```

Ser

<210> 89
<211> 513
<212> PRT
<213> Artificial Sequence

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

<400> 89
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145 150 155 160

```
Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ile
        195                 200                 205

Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro
    210                 215                 220

Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu
225                 230                 235                 240

Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser
                245                 250                 255

Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln
            260                 265                 270

Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu
        275                 280                 285

Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp
    290                 295                 300

Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn
305                 310                 315                 320

Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp
                325                 330                 335

Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly
            340                 345                 350

Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp
        355                 360                 365

Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Cys
    370                 375                 380
```

```
Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val
385                 390                 395                 400


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


Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys
            420                 425                 430


Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser
        435                 440                 445


Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln Gly
    450                 455                 460


Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser
465                 470                 475                 480


Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln
                485                 490                 495


Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys
            500                 505                 510


Ser
```

<210> 90
<211> 431
<212> PRT
<213> Homo sapiens

<400> 90

```
Met Arg Ala Leu Leu Ala Arg Leu Leu Leu Cys Val Leu Val Val Ser
1               5                   10                  15


Asp Ser Lys Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp
            20                  25                  30


Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile
        35                  40                  45
```

```
His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile
    50                  55                  60

Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly
65                  70                  75                  80

Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser
                85                  90                  95

Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu
            100                 105                 110

Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg
        115                 120                 125

Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln
    130                 135                 140

Glu Cys Met Val His Asp Cys Ala Asp Gly Lys Lys Pro Ser Ser Pro
145                 150                 155                 160

Pro Glu Glu Leu Lys Phe Gln Cys Gly Gln Lys Thr Leu Arg Pro Arg
                165                 170                 175

Phe Lys Ile Ile Gly Gly Glu Phe Thr Thr Ile Glu Asn Gln Pro Trp
            180                 185                 190

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

Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ile Ser Ala Thr His
    210                 215                 220

Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr Ile Val Tyr Leu Gly
225                 230                 235                 240

Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu Met Lys Phe Glu Val
                245                 250                 255
```

```
Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala Asp Thr Leu Ala His
            260                 265                 270

His Asn Asp Ile Ala Leu Leu Lys Ile Arg Ser Lys Glu Gly Arg Cys
        275                 280                 285

Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys Leu Pro Ser Met Tyr
    290                 295                 300

Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile Thr Gly Phe Gly Lys
305                 310                 315                 320

Glu Asn Ser Thr Asp Tyr Leu Tyr Pro Glu Gln Leu Lys Met Thr Val
                325                 330                 335

Val Lys Leu Ile Ser His Arg Glu Cys Gln Gln Pro His Tyr Tyr Gly
            340                 345                 350

Ser Glu Val Thr Thr Lys Met Leu Cys Ala Ala Asp Pro Gln Trp Lys
        355                 360                 365

Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Leu
    370                 375                 380

Gln Gly Arg Met Thr Leu Thr Gly Ile Val Ser Trp Gly Arg Gly Cys
385                 390                 395                 400

Ala Leu Lys Asp Lys Pro Gly Val Tyr Thr Arg Val Ser His Phe Leu
                405                 410                 415

Pro Trp Ile Arg Ser His Thr Lys Glu Glu Asn Gly Leu Ala Leu
            420                 425                 430
```

<210> 91
<211> 132
<212> PRT
<213> Homo sapiens

<400> 91

```
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15
```

```
Gly Thr Cys Val Ser Tyr Lys Tyr Phe Ser Asn Ile His Arg Cys Asn
            20                  25                  30

Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110

Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala
    130
```

<210> 92

<400> 92
000

<210> 93
<211> 433
<212> PRT
<213> Mus musculus

<400> 93

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

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

Gly Cys Gln Asn Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg
        35                  40                  45
```

```
Ile Arg Arg Cys Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu
    50                  55                  60

Ile Asp Ala Ser Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg
65                  70                  75                  80

Gly Lys Ala Asn Thr Asp Thr Lys Gly Arg Pro Cys Leu Ala Trp Asn
                85                  90                  95

Ala Pro Ala Val Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala
            100                 105                 110

Ile Ser Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn
        115                 120                 125

Gln Lys Arg Pro Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val
    130                 135                 140

Gln Glu Cys Met Val His Asp Cys Ser Leu Ser Lys Lys Pro Ser Ser
145                 150                 155                 160

Ser Val Asp Gln Gln Gly Phe Gln Cys Gly Gln Lys Ala Leu Arg Pro
                165                 170                 175

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

Trp Phe Ala Ala Ile Tyr Gln Lys Asn Lys Gly Gly Ser Pro Pro Ser
        195                 200                 205

Phe Lys Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ala Ser Ala
    210                 215                 220

Ala His Cys Phe Ile Gln Leu Pro Lys Lys Glu Asn Tyr Val Val Tyr
225                 230                 235                 240

Leu Gly Gln Ser Lys Glu Ser Ser Tyr Asn Pro Gly Glu Met Lys Phe
                245                 250                 255
```

```
Glu Val Glu Gln Leu Ile Leu His Glu Tyr Tyr Arg Glu Asp Ser Leu
            260                 265                 270

Ala Tyr His Asn Asp Ile Ala Leu Leu Lys Ile Arg Thr Ser Thr Gly
        275                 280                 285

Gln Cys Ala Gln Pro Ser Arg Ser Ile Gln Thr Ile Cys Leu Pro Pro
    290                 295                 300

Arg Phe Thr Asp Ala Pro Phe Gly Ser Asp Cys Glu Ile Thr Gly Phe
305                 310                 315                 320

Gly Lys Glu Ser Glu Ser Asp Tyr Leu Tyr Pro Lys Asn Leu Lys Met
                325                 330                 335

Ser Val Val Lys Leu Val Ser His Glu Gln Cys Met Gln Pro His Tyr
            340                 345                 350

Tyr Gly Ser Glu Ile Asn Tyr Lys Met Leu Cys Ala Ala Asp Pro Glu
        355                 360                 365

Trp Lys Thr Asp Ser Cys Lys Gly Asp Ser Gly Gly Pro Leu Ile Cys
    370                 375                 380

Asn Ile Glu Gly Arg Pro Thr Leu Ser Gly Ile Val Ser Trp Gly Arg
385                 390                 395                 400

Gly Cys Ala Glu Lys Asn Lys Pro Gly Val Tyr Thr Arg Val Ser His
                405                 410                 415

Phe Leu Asp Trp Ile Gln Ser His Ile Gly Glu Glu Lys Gly Leu Ala
            420                 425                 430

Phe
```

<210> 94
<211> 303
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 94

```
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                  10                  15

Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60

Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80

Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95

Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205
```

```
Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255

Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285

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


<210> 95
<211> 184
<212> PRT
<213> Artificial Sequence

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

<400> 95
Ile Thr Cys Pro Pro Pro Met Ser Val Glu His Ala Asp Ile Trp Val
1               5                   10                  15

Lys Ser Tyr Ser Leu Tyr Ser Arg Glu Arg Tyr Ile Cys Asn Ser Gly
            20                  25                  30

Phe Lys Arg Lys Ala Gly Thr Ser Ser Leu Thr Glu Cys Val Leu Asn
        35                  40                  45

Lys Ala Thr Asn Val Ala His Trp Thr Thr Pro Ser Leu Lys Cys Ile
    50                  55                  60

Arg Asp Gly Gly Ser Glu Leu Glu Glu Lys Asn Ile Lys Glu Phe Leu
65                  70                  75                  80
```

```
Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn Gly Gly Gly Ser
                85                  90                  95


Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu Asp Leu Ile
            100                 105                 110


Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser Asp Val His
        115                 120                 125


Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu Glu Leu Gln
    130                 135                 140


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


Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn Gly Asn Val
                165                 170                 175


Thr Glu Ser Gly Cys Lys Glu Cys
            180


<210> 96
<211> 302
<212> PRT
<213> Artificial Sequence

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

<400> 96
Ser Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe Ile Ser Asn
1               5                   10                  15


Ile Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn Thr Phe Glu
            20                  25                  30


Cys Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe Leu Arg Arg
        35                  40                  45


Trp Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro Gln Gly Gly
    50                  55                  60
```

```
Ser Ser Ser Thr Gln Gln Gln Gln His Leu Glu Gln Leu Leu Met
65                  70                  75                  80

Asp Leu Gln Glu Leu Leu Ser Arg Met Glu Asn Tyr Arg Asn Leu Lys
                85                  90                  95

Leu Pro Arg Met Leu Thr Phe Lys Phe Tyr Leu Pro Lys Gln Ala Thr
            100                 105                 110

Glu Leu Lys Asp Leu Gln Cys Leu Glu Asp Glu Leu Gly Pro Leu Arg
        115                 120                 125

His Val Leu Asp Leu Thr Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys
    130                 135                 140

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

Tyr Lys Asn Gly Thr Ile Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg
                165                 170                 175

Arg Leu Lys Glu Leu Val Tyr Met Arg Cys Leu Gly Asn Ser Trp Ser
            180                 185                 190

Ser Asn Cys Gln Cys Thr Ser Asn Ser His Asp Lys Ser Arg Lys Gln
        195                 200                 205

Val Thr Ala Gln Leu Glu His Gln Lys Glu Gln Gln Thr Thr Thr Asp
    210                 215                 220

Met Gln Lys Pro Thr Gln Ser Met His Gln Glu Asn Leu Thr Gly His
225                 230                 235                 240

Cys Arg Glu Pro Pro Pro Trp Lys His Glu Asp Ser Lys Arg Ile Tyr
                245                 250                 255

His Phe Val Glu Gly Gln Ser Val His Tyr Glu Cys Ile Pro Gly Tyr
            260                 265                 270
```

Lys Ala Leu Gln Arg Gly Pro Ala Ile Ser Ile Cys Lys Met Lys Cys
275 280 285

Gly Lys Thr Gly Trp Thr Gln Pro Gln Leu Thr Cys Val Asp
290 295 300

<210> 97
<211> 184
<212> PRT
<213> Artificial Sequence

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

<400> 97
Thr Thr Cys Pro Pro Pro Val Ser Ile Glu His Ala Asp Ile Arg Val
1 5 10 15

Lys Asn Tyr Ser Val Asn Ser Arg Glu Arg Tyr Val Cys Asn Ser Gly
20 25 30

Phe Lys Arg Lys Ala Gly Thr Ser Thr Leu Ile Glu Cys Val Ile Asn
35 40 45

Lys Asn Thr Asn Val Ala His Trp Thr Thr Pro Ser Leu Lys Cys Ile
50 55 60

Arg Asp Gly Gly Ser Glu Leu Glu Glu Lys Thr Phe Thr Glu Phe Leu
65 70 75 80

Gln Ser Phe Ile Arg Ile Val Gln Met Phe Ile Asn Gly Gly Gly Ser
85 90 95

Asn Trp Ile Asp Val Arg Tyr Asp Leu Glu Lys Ile Glu Ser Leu Ile
100 105 110

Gln Ser Ile His Ile Asp Thr Thr Leu Tyr Thr Asp Ser Asp Phe His
115 120 125

Pro Ser Cys Lys Val Thr Ala Met Asn Cys Phe Leu Leu Glu Leu Gln
130 135 140

```
Val Ile Leu His Glu Tyr Ser Asn Met Thr Leu Asn Glu Thr Val Arg
145                 150                 155                 160


Asn Val Leu Tyr Leu Ala Asn Ser Thr Leu Ser Ser Asn Lys Asn Val
                165                 170                 175


Ala Glu Ser Gly Cys Lys Glu Cys
            180


<210> 98
<211> 440
<212> PRT
<213> Artificial Sequence

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

<400> 98
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15


Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
            20                  25                  30


Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45


Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60


Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80


Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95


Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110


Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125
```

```
His Asp Cys Ala Gly Gly Ser Gly Gly Ser Lys Asn Phe His Leu Arg
    130                 135                 140

Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys
145                 150                 155                 160

Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr
                165                 170                 175

Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe Ser Gln Ser Ile Ile
            180                 185                 190

Ser Thr Leu Thr Gly Gly Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln
        195                 200                 205

Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile Asn
    210                 215                 220

Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr
225                 230                 235                 240

Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu Glu
                245                 250                 255

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

Gly Gly Ser Glu Leu Cys Asp Asp Asp Pro Pro Glu Ile Pro His Ala
        275                 280                 285

Thr Phe Lys Ala Met Ala Tyr Lys Glu Gly Thr Met Leu Asn Cys Glu
    290                 295                 300

Cys Lys Arg Gly Phe Arg Arg Ile Lys Ser Gly Ser Leu Tyr Met Leu
305                 310                 315                 320

Cys Thr Gly Asn Ser Ser His Ser Ser Trp Asp Asn Gln Cys Gln Cys
                325                 330                 335

Thr Ser Ser Ala Thr Arg Asn Thr Thr Lys Gln Val Thr Pro Gln Pro
            340                 345                 350
```

```
Glu Glu Gln Lys Glu Arg Lys Thr Thr Glu Met Gln Ser Pro Met Gln
        355                 360                 365

Pro Val Asp Gln Ala Ser Leu Pro Gly His Cys Arg Glu Pro Pro Pro
    370                 375                 380

Trp Glu Asn Glu Ala Thr Glu Arg Ile Tyr His Phe Val Val Gly Gln
385                 390                 395                 400

Met Val Tyr Tyr Gln Cys Val Gln Gly Tyr Arg Ala Leu His Arg Gly
                405                 410                 415

Pro Ala Glu Ser Val Cys Lys Met Thr His Gly Lys Thr Arg Trp Thr
            420                 425                 430

Gln Pro Gln Leu Ile Cys Thr Gly
        435                 440
```

<210> 99
<211> 440
<212> PRT
<213> Artificial Sequence

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

<400> 99

```
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                   10                  15

Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60

Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80
```

```
Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95

Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255

Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285
```

```
His Gly Lys Thr Arg Trp Thr Gln Pro Gln Leu Ile Cys Thr Gly Gly
    290                 295                 300

Gly Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp
305                 310                 315                 320

Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile
                325                 330                 335

His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile
            340                 345                 350

Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly
        355                 360                 365

Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser
    370                 375                 380

Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu
385                 390                 395                 400

Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg
                405                 410                 415

Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln
            420                 425                 430

Glu Cys Met Val His Asp Cys Ala
        435                 440
```

<210> 100
<211> 321
<212> PRT
<213> Artificial Sequence

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

<400> 100

```
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15
```

```
Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
            20                  25                  30

Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110

Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala Gly Gly Ser Gly Gly Ile Thr Cys Pro Pro Pro Met
    130                 135                 140

Ser Val Glu His Ala Asp Ile Trp Val Lys Ser Tyr Ser Leu Tyr Ser
145                 150                 155                 160

Arg Glu Arg Tyr Ile Cys Asn Ser Gly Phe Lys Arg Lys Ala Gly Thr
                165                 170                 175

Ser Ser Leu Thr Glu Cys Val Leu Asn Lys Ala Thr Asn Val Ala His
            180                 185                 190

Trp Thr Thr Pro Ser Leu Lys Cys Ile Arg Asp Gly Gly Ser Glu Leu
        195                 200                 205

Glu Glu Lys Asn Ile Lys Glu Phe Leu Gln Ser Phe Val His Ile Val
    210                 215                 220

Gln Met Phe Ile Asn Gly Gly Gly Ser Asn Trp Val Asn Val Ile Ser
225                 230                 235                 240
```

Asp Leu Lys Lys Ile Glu Asp Leu Ile Gln Ser Met His Ile Asp Ala
245 250 255

Thr Leu Tyr Thr Glu Ser Asp Val His Pro Ser Cys Lys Val Thr Ala
260 265 270

Met Lys Cys Phe Leu Leu Glu Leu Gln Val Ile Ser Leu Glu Ser Gly
275 280 285

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

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

Cys

<210> 101
<211> 438
<212> PRT
<213> Artificial Sequence

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

<400> 101
Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe Ile Ser Asn Ile
1 5 10 15

Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn Thr Phe Glu Cys
20 25 30

Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe Leu Arg Arg Trp
35 40 45

Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro Gln Gly Gly Ser
50 55 60

Ser Ser Thr Gln Gln Gln Gln Gln His Leu Glu Gln Leu Leu Met Asp
65 70 75 80

```
Leu Gln Glu Leu Leu Ser Arg Met Glu Asn Tyr Arg Asn Leu Lys Leu
                85                  90                  95

Pro Arg Met Leu Thr Phe Lys Phe Tyr Leu Pro Lys Gln Ala Thr Glu
            100                 105                 110

Leu Lys Asp Leu Gln Cys Leu Glu Asp Glu Leu Gly Pro Leu Arg His
        115                 120                 125

Val Leu Asp Leu Thr Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Leu
    130                 135                 140

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

Lys Asn Gly Thr Ile Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg
                165                 170                 175

Leu Lys Glu Leu Val Tyr Met Arg Cys Leu Gly Asn Ser Trp Ser Ser
            180                 185                 190

Asn Cys Gln Cys Thr Ser Asn Ser His Asp Lys Ser Arg Lys Gln Val
        195                 200                 205

Thr Ala Gln Leu Glu His Gln Lys Glu Gln Gln Thr Thr Thr Asp Met
    210                 215                 220

Gln Lys Pro Thr Gln Ser Met His Gln Glu Asn Leu Thr Gly His Cys
225                 230                 235                 240

Arg Glu Pro Pro Pro Trp Lys His Glu Asp Ser Lys Arg Ile Tyr His
                245                 250                 255

Phe Val Glu Gly Gln Ser Val His Tyr Glu Cys Ile Pro Gly Tyr Lys
            260                 265                 270

Ala Leu Gln Arg Gly Pro Ala Ile Ser Ile Cys Lys Met Lys Cys Gly
        275                 280                 285
```

```
Lys Thr Gly Trp Thr Gln Pro Gln Leu Thr Cys Val Asp Gly Gly Ser
    290                 295                 300

Gly Gly Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys
305                 310                 315                 320

Gln Asn Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg
                325                 330                 335

Arg Cys Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp
            340                 345                 350

Ala Ser Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys
        355                 360                 365

Ala Asn Thr Asp Thr Lys Gly Arg Pro Cys Leu Ala Trp Asn Ala Pro
    370                 375                 380

Ala Val Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser
385                 390                 395                 400

Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys
                405                 410                 415

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

Cys Met Val His Asp Cys
        435
```

<210> 102
<211> 321
<212> PRT
<213> Artificial Sequence

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

<400> 102

```
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1               5                   10                  15
```

```
Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
            20                  25                  30

Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
        35                  40                  45

Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
    50                  55                  60

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

Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
                85                  90                  95

Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
            100                 105                 110

Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
        115                 120                 125

Val His Asp Cys Gly Gly Ser Gly Gly Thr Thr Cys Pro Pro Pro Val
    130                 135                 140

Ser Ile Glu His Ala Asp Ile Arg Val Lys Asn Tyr Ser Val Asn Ser
145                 150                 155                 160

Arg Glu Arg Tyr Val Cys Asn Ser Gly Phe Lys Arg Lys Ala Gly Thr
                165                 170                 175

Ser Thr Leu Ile Glu Cys Val Ile Asn Lys Asn Thr Asn Val Ala His
            180                 185                 190

Trp Thr Thr Pro Ser Leu Lys Cys Ile Arg Asp Gly Gly Ser Glu Leu
        195                 200                 205

Glu Glu Lys Thr Phe Thr Glu Phe Leu Gln Ser Phe Ile Arg Ile Val
    210                 215                 220

Gln Met Phe Ile Asn Gly Gly Gly Ser Asn Trp Ile Asp Val Arg Tyr
225                 230                 235                 240
```

```
Asp Leu Glu Lys Ile Glu Ser Leu Ile Gln Ser Ile His Ile Asp Thr
                245                 250                 255

Thr Leu Tyr Thr Asp Ser Asp Phe His Pro Ser Cys Lys Val Thr Ala
            260                 265                 270

Met Asn Cys Phe Leu Leu Glu Leu Gln Val Ile Leu His Glu Tyr Ser
        275                 280                 285

Asn Met Thr Leu Asn Glu Thr Val Arg Asn Val Leu Tyr Leu Ala Asn
    290                 295                 300

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

Cys
```

<210> 103
<211> 132
<212> PRT
<213> Homo sapiens

<400> 103

```
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15

Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
            20                  25                  30

Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95
```

```
Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110


Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125


His Asp Cys Ala
    130


<210> 104
<211> 132
<212> PRT
<213> Mus musculus

<400> 104
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1               5                   10                  15


Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
            20                  25                  30


Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
        35                  40                  45


Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
    50                  55                  60


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


Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
                85                  90                  95


Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
            100                 105                 110


Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
        115                 120                 125


Val His Asp Cys
    130
```

<210> 105
<211> 438
<212> PRT
<213> Artificial Sequence

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

<400> 105
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1 5 10 15

Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
20 25 30

Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
35 40 45

Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
50 55 60

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

Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
85 90 95

Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
100 105 110

Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
115 120 125

Val His Asp Cys Gly Gly Ser Gly Gly Ser Lys Ser Phe Gln Leu Glu
130 135 140

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

Lys Gly Ser Asp Asn Thr Phe Glu Cys Gln Phe Asp Asp Glu Ser Ala
165 170 175

```
Thr Val Val Asp Phe Leu Arg Arg Trp Ile Ala Phe Cys Gln Ser Ile
            180                 185                 190

Ile Ser Thr Ser Pro Gln Gly Gly Ser Ser Ser Thr Gln Gln Gln Gln
        195                 200                 205

Gln His Leu Glu Gln Leu Leu Met Asp Leu Gln Glu Leu Leu Ser Arg
    210                 215                 220

Met Glu Asn Tyr Arg Asn Leu Lys Leu Pro Arg Met Leu Thr Phe Lys
225                 230                 235                 240

Phe Tyr Leu Pro Lys Gln Ala Thr Glu Leu Lys Asp Leu Gln Cys Leu
                245                 250                 255

Glu Asp Glu Leu Gly Pro Leu Arg His Val Leu Asp Leu Thr Gln Gly
            260                 265                 270

Ser Gly Gly Gly Ser Glu Leu Cys Leu Tyr Asp Pro Pro Glu Val Pro
        275                 280                 285

Asn Ala Thr Phe Lys Ala Leu Ser Tyr Lys Asn Gly Thr Ile Leu Asn
    290                 295                 300

Cys Glu Cys Lys Arg Gly Phe Arg Arg Leu Lys Glu Leu Val Tyr Met
305                 310                 315                 320

Arg Cys Leu Gly Asn Ser Trp Ser Ser Asn Cys Gln Cys Thr Ser Asn
                325                 330                 335

Ser His Asp Lys Ser Arg Lys Gln Val Thr Ala Gln Leu Glu His Gln
            340                 345                 350

Lys Glu Gln Gln Thr Thr Thr Asp Met Gln Lys Pro Thr Gln Ser Met
        355                 360                 365

His Gln Glu Asn Leu Thr Gly His Cys Arg Glu Pro Pro Pro Trp Lys
    370                 375                 380
```

```
His Glu Asp Ser Lys Arg Ile Tyr His Phe Val Glu Gly Gln Ser Val
385                 390                 395                 400


His Tyr Glu Cys Ile Pro Gly Tyr Lys Ala Leu Gln Arg Gly Pro Ala
                405                 410                 415


Ile Ser Ile Cys Lys Met Lys Cys Gly Lys Thr Gly Trp Thr Gln Pro
            420                 425                 430


Gln Leu Thr Cys Val Asp
        435
```

<210> 106
<211> 677
<212> PRT
<213> Artificial Sequence

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

<400> 106

```
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                   10                  15


Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30


Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45


Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60


Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80


Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95


Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110
```

```
His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255

Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285

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

Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro
305                 310                 315                 320

Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro
                325                 330                 335
```

```
Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
            340                 345                 350

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        355                 360                 365

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    370                 375                 380

Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
385                 390                 395                 400

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                405                 410                 415

Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys
            420                 425                 430

Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu
        435                 440                 445

Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe
    450                 455                 460

Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
465                 470                 475                 480

Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                485                 490                 495

Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            500                 505                 510

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        515                 520                 525

Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Gly Gly Ser Gly Gly
    530                 535                 540
```

```
Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn
545                 550                 555                 560


Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys
                565                 570                 575


Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser
            580                 585                 590


Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser
        595                 600                 605


Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val
    610                 615                 620


Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly
625                 630                 635                 640


Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro
                645                 650                 655


Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met
            660                 665                 670


Val His Asp Cys Ala
        675


<210> 107
<211> 555
<212> PRT
<213> Artificial Sequence

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

<400> 107
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15


Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
            20                  25                  30
```

```
Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110

Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala Gly Gly Ser Gly Gly Glu Pro Lys Ser Ser Asp Lys
    130                 135                 140

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
145                 150                 155                 160

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                165                 170                 175

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            180                 185                 190

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        195                 200                 205

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    210                 215                 220

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
225                 230                 235                 240

Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
                245                 250                 255
```

```
Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            260                 265                 270

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

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    290                 295                 300

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
305                 310                 315                 320

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                325                 330                 335

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            340                 345                 350

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
        355                 360                 365

Lys Gly Ser Ile Thr Cys Pro Pro Pro Met Ser Val Glu His Ala Asp
    370                 375                 380

Ile Trp Val Lys Ser Tyr Ser Leu Tyr Ser Arg Glu Arg Tyr Ile Cys
385                 390                 395                 400

Asn Ser Gly Phe Lys Arg Lys Ala Gly Thr Ser Ser Leu Thr Glu Cys
                405                 410                 415

Val Leu Asn Lys Ala Thr Asn Val Ala His Trp Thr Thr Pro Ser Leu
            420                 425                 430

Lys Cys Ile Arg Asp Gly Gly Ser Glu Leu Glu Glu Lys Asn Ile Lys
        435                 440                 445

Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met Phe Ile Asn Gly
    450                 455                 460
```

```
Gly Gly Ser Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu
465                 470                 475                 480


Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser
                485                 490                 495


Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu
            500                 505                 510


Glu Leu Gln Val Ile Ser Leu Glu Ser Gly Asp Ala Ser Ile His Asp
        515                 520                 525


Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn
    530                 535                 540


Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys
545                 550                 555


<210> 108
<211> 668
<212> PRT
<213> Artificial Sequence

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

<400> 108
Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe Ile Ser Asn Ile
1               5                   10                  15


Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn Thr Phe Glu Cys
            20                  25                  30


Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe Leu Arg Arg Trp
        35                  40                  45


Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro Gln Gly Gly Ser
    50                  55                  60


Ser Ser Thr Gln Gln Gln Gln Gln His Leu Glu Gln Leu Leu Met Asp
65                  70                  75                  80
```

```
Leu Gln Glu Leu Leu Ser Arg Met Glu Asn Tyr Arg Asn Leu Lys Leu
                85                  90                  95

Pro Arg Met Leu Thr Phe Lys Phe Tyr Leu Pro Lys Gln Ala Thr Glu
            100                 105                 110

Leu Lys Asp Leu Gln Cys Leu Glu Asp Glu Leu Gly Pro Leu Arg His
        115                 120                 125

Val Leu Asp Leu Thr Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Leu
    130                 135                 140

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

Lys Asn Gly Thr Ile Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg
                165                 170                 175

Leu Lys Glu Leu Val Tyr Met Arg Cys Leu Gly Asn Ser Trp Ser Ser
            180                 185                 190

Asn Cys Gln Cys Thr Ser Asn Ser His Asp Lys Ser Arg Lys Gln Val
        195                 200                 205

Thr Ala Gln Leu Glu His Gln Lys Glu Gln Gln Thr Thr Thr Asp Met
    210                 215                 220

Gln Lys Pro Thr Gln Ser Met His Gln Glu Asn Leu Thr Gly His Cys
225                 230                 235                 240

Arg Glu Pro Pro Pro Trp Lys His Glu Asp Ser Lys Arg Ile Tyr His
                245                 250                 255

Phe Val Glu Gly Gln Ser Val His Tyr Glu Cys Ile Pro Gly Tyr Lys
            260                 265                 270

Ala Leu Gln Arg Gly Pro Ala Ile Ser Ile Cys Lys Met Lys Cys Gly
        275                 280                 285

Lys Thr Gly Trp Thr Gln Pro Gln Leu Thr Cys Val Asp Gly Ser Val
    290                 295                 300
```

```
Pro Arg Asp Ser Gly Cys Lys Pro Cys Ile Cys Thr Val Pro Glu Val
305                 310                 315                 320

Ser Ser Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu Thr Ile
                325                 330                 335

Thr Leu Thr Pro Lys Val Thr Cys Val Val Val Ala Ile Ser Lys Asp
            340                 345                 350

Asp Pro Glu Val Gln Phe Ser Trp Phe Val Asp Asp Val Glu Val His
        355                 360                 365

Thr Ala Gln Thr Gln Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg
    370                 375                 380

Ser Val Ser Glu Leu Pro Ile Met His Gln Asp Trp Leu Asn Gly Lys
385                 390                 395                 400

Glu Phe Lys Cys Arg Val Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu
                405                 410                 415

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

Thr Ile Pro Pro Pro Lys Glu Gln Met Ala Lys Asp Lys Val Ser Leu
        435                 440                 445

Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val Glu Trp
    450                 455                 460

Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile
465                 470                 475                 480

Met Asn Thr Asn Gly Ser Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln
                485                 490                 495

Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val Leu His
            500                 505                 510
```

Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His Ser Pro
515 520 525

Gly Lys Gly Gly Ser Gly Gly Ser Gly Ser Val Leu Gly Ala Pro Asp
530 535 540

Glu Ser Asn Cys Gly Cys Gln Asn Gly Gly Val Cys Val Ser Tyr Lys
545 550 555 560

Tyr Phe Ser Arg Ile Arg Arg Cys Ser Cys Pro Arg Lys Phe Gln Gly
565 570 575

Glu His Cys Glu Ile Asp Ala Ser Lys Thr Cys Tyr His Gly Asn Gly
580 585 590

Asp Ser Tyr Arg Gly Lys Ala Asn Thr Asp Thr Lys Gly Arg Pro Cys
595 600 605

Leu Ala Trp Asn Ala Pro Ala Val Leu Gln Lys Pro Tyr Asn Ala His
610 615 620

Arg Pro Asp Ala Ile Ser Leu Gly Leu Gly Lys His Asn Tyr Cys Arg
625 630 635 640

Asn Pro Asp Asn Gln Lys Arg Pro Trp Cys Tyr Val Gln Ile Gly Leu
645 650 655

Arg Gln Phe Val Gln Glu Cys Met Val His Asp Cys
660 665

<210> 109
<211> 551
<212> PRT
<213> Artificial Sequence

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

<400> 109
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1 5 10 15

```
Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
            20                  25                  30

Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
        35                  40                  45

Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
    50                  55                  60

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

Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
                85                  90                  95

Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
            100                 105                 110

Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
        115                 120                 125

Val His Asp Cys Gly Gly Ser Gly Gly Val Pro Arg Asp Ser Gly Cys
    130                 135                 140

Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe
145                 150                 155                 160

Pro Pro Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val
                165                 170                 175

Thr Cys Val Val Val Ala Ile Ser Lys Asp Asp Pro Glu Val Gln Phe
            180                 185                 190

Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Gln Pro
        195                 200                 205

Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro
    210                 215                 220

Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val
225                 230                 235                 240
```

```
Asn Ser Ala Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr
                245                 250                 255

Lys Gly Arg Pro Lys Ala Pro Gln Val Tyr Thr Ile Pro Pro Pro Lys
            260                 265                 270

Glu Gln Met Ala Lys Asp Lys Val Ser Leu Thr Cys Met Ile Thr Asp
        275                 280                 285

Phe Phe Pro Glu Asp Ile Thr Val Glu Trp Gln Trp Asn Gly Gln Pro
    290                 295                 300

Ala Glu Asn Tyr Lys Asn Thr Gln Pro Ile Met Asn Thr Asn Gly Ser
305                 310                 315                 320

Tyr Phe Val Tyr Ser Lys Leu Asn Val Gln Lys Ser Asn Trp Glu Ala
                325                 330                 335

Gly Asn Thr Phe Thr Cys Ser Val Leu His Glu Gly Leu His Asn His
            340                 345                 350

His Thr Glu Lys Ser Leu Ser His Ser Pro Gly Lys Gly Gly Ser Thr
        355                 360                 365

Thr Cys Pro Pro Pro Val Ser Ile Glu His Ala Asp Ile Arg Val Lys
    370                 375                 380

Asn Tyr Ser Val Asn Ser Arg Glu Arg Tyr Val Cys Asn Ser Gly Phe
385                 390                 395                 400

Lys Arg Lys Ala Gly Thr Ser Thr Leu Ile Glu Cys Val Ile Asn Lys
                405                 410                 415

Asn Thr Asn Val Ala His Trp Thr Thr Pro Ser Leu Lys Cys Ile Arg
            420                 425                 430

Asp Gly Gly Ser Glu Leu Glu Glu Lys Thr Phe Thr Glu Phe Leu Gln
        435                 440                 445
```

```
Ser Phe Ile Arg Ile Val Gln Met Phe Ile Asn Gly Gly Gly Ser Asn
    450                 455                 460

Trp Ile Asp Val Arg Tyr Asp Leu Glu Lys Ile Glu Ser Leu Ile Gln
465                 470                 475                 480

Ser Ile His Ile Asp Thr Thr Leu Tyr Thr Asp Ser Asp Phe His Pro
                485                 490                 495

Ser Cys Lys Val Thr Ala Met Asn Cys Phe Leu Leu Glu Leu Gln Val
            500                 505                 510

Ile Leu His Glu Tyr Ser Asn Met Thr Leu Asn Glu Thr Val Arg Asn
        515                 520                 525

Val Leu Tyr Leu Ala Asn Ser Thr Leu Ser Ser Asn Lys Asn Val Ala
    530                 535                 540

Glu Ser Gly Cys Lys Glu Cys
545                 550
```

<210> 110
<211> 440
<212> PRT
<213> Artificial Sequence

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

<400> 110

```
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                   10                  15

Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60
```

```
Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80

Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95

Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255

Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285
```

```
His Gly Lys Thr Arg Trp Thr Gln Pro Gln Leu Ile Cys Thr Gly Gly
    290                 295                 300

Gly Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp
305                 310                 315                 320

Cys Leu Asn Gly Gly Thr Cys Val Ser Tyr Lys Tyr Phe Ser Asn Ile
                325                 330                 335

His Arg Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile
            340                 345                 350

Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly
        355                 360                 365

Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser
    370                 375                 380

Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu
385                 390                 395                 400

Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg
                405                 410                 415

Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln
            420                 425                 430

Glu Cys Met Val His Asp Cys Ala
        435                 440
```

<210> 111
<211> 357
<212> PRT
<213> Artificial Sequence

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

<400> 111

```
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                   10                  15
```

```
Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60

Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80

Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95

Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220
```

```
Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240


His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255


Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270


Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285


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


Gly Ser Gly Gly Gly Gly Ser Gly Gly Ala Glu Ser Thr Tyr His His
305                 310                 315                 320


Leu Ser Leu Gly Tyr Met Tyr Thr Leu Asn Gly Gly Ser His His His
                325                 330                 335


His His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
            340                 345                 350


Ile Glu Trp His Glu
        355


<210> 112
<211> 330
<212> PRT
<213> Artificial Sequence

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

<400> 112
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                   10                  15


Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30
```

```
Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60

Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80

Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95

Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255
```

```
Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Asn Tyr His Tyr Leu Glu Ser
305                 310                 315                 320

Ser Met Thr Ala Leu Tyr Thr Leu Gly His
                325                 330
```

<210> 113
<211> 330
<212> PRT
<213> Artificial Sequence

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

<400> 113

```
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1               5                   10                  15

Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
            20                  25                  30

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
        35                  40                  45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
    50                  55                  60

Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65                  70                  75                  80

Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
                85                  90                  95
```

```
Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
            100                 105                 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
        115                 120                 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
    130                 135                 140

Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255

Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285

His Gly Lys Thr Arg Trp Thr Gln Pro Gln Leu Ile Cys Thr Gly Gly
    290                 295                 300
```

Gly Ser Gly Gly Gly Gly Ser Gly Gly Pro Arg Tyr Gln His Ile Gly
305 310 315 320

Leu Val Ala Met Phe Arg Gln Asn Thr Gly
325 330

<210> 114
<211> 330
<212> PRT
<213> Artificial Sequence

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

<400> 114
Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn
1 5 10 15

Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu
20 25 30

Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile
35 40 45

Thr Phe Ser Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Ser Ser Ser
50 55 60

Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln
65 70 75 80

Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg
85 90 95

Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys
100 105 110

His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu
115 120 125

Asn Leu Ala Gln Gly Ser Gly Gly Gly Ser Glu Leu Cys Asp Asp Asp
130 135 140

```
Pro Pro Glu Ile Pro His Ala Thr Phe Lys Ala Met Ala Tyr Lys Glu
145                 150                 155                 160

Gly Thr Met Leu Asn Cys Glu Cys Lys Arg Gly Phe Arg Arg Ile Lys
                165                 170                 175

Ser Gly Ser Leu Tyr Met Leu Cys Thr Gly Asn Ser Ser His Ser Ser
            180                 185                 190

Trp Asp Asn Gln Cys Gln Cys Thr Ser Ser Ala Thr Arg Asn Thr Thr
        195                 200                 205

Lys Gln Val Thr Pro Gln Pro Glu Glu Gln Lys Glu Arg Lys Thr Thr
    210                 215                 220

Glu Met Gln Ser Pro Met Gln Pro Val Asp Gln Ala Ser Leu Pro Gly
225                 230                 235                 240

His Cys Arg Glu Pro Pro Pro Trp Glu Asn Glu Ala Thr Glu Arg Ile
                245                 250                 255

Tyr His Phe Val Val Gly Gln Met Val Tyr Tyr Gln Cys Val Gln Gly
            260                 265                 270

Tyr Arg Ala Leu His Arg Gly Pro Ala Glu Ser Val Cys Lys Met Thr
        275                 280                 285

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly His Gln Ile Pro Gly Ala Tyr
305                 310                 315                 320

Arg Gly Val Asn Gln Arg Phe Thr Met Leu
                325                 330
```

<210> 115
<211> 224
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
polypeptide

<400> 115

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

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

Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln
        35                  40                  45

Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg
    50                  55                  60

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
65                  70                  75                  80

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr
                85                  90                  95

Tyr Cys Phe Gln Gly Ser His Val Pro Tyr Thr Phe Gly Gly Gly Thr
            100                 105                 110

Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe
        115                 120                 125

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

Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile
145                 150                 155                 160

Asp Gly Ser Glu Arg Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln
                165                 170                 175

Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr
            180                 185                 190

Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His
        195                 200                 205
```

Lys Thr Ser Thr Ser Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
210 215 220

<210> 116
<211> 447
<212> PRT
<213> Artificial Sequence

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

<400> 116
Glu Ala Lys Leu Gln Glu Ser Gly Pro Val Leu Val Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
20 25 30

Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Val Ile Asn Pro Tyr Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65 70 75 80

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

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

Ile Thr Val Ser Thr Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
115 120 125

Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys
130 135 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp Asn Ser
145 150 155 160

```
Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
                165                 170                 175

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr Trp
            180                 185                 190

Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
        195                 200                 205

Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys
    210                 215                 220

Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val
225                 230                 235                 240

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
                245                 250                 255

Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
            260                 265                 270

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
        275                 280                 285

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
    290                 295                 300

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
305                 310                 315                 320

Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile
                325                 330                 335

Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro
            340                 345                 350

Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met
        355                 360                 365
```

```
Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn
    370                 375                 380

Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser
385                 390                 395                 400

Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn
                405                 410                 415

Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu
            420                 425                 430

His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
        435                 440                 445
```

<210> 117
<211> 585
<212> PRT
<213> Artificial Sequence

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

<400> 117

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

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30

Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
        35                  40                  45

Gly Val Ile Asn Pro Tyr Asn Gly Asp Thr Ser Tyr Asn Gln Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80

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

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

Ile Thr Val Ser Thr Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
        115                 120                 125

Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys
    130                 135                 140

Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp Asn Ser
145                 150                 155                 160

Gly Ser Leu Ser Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser
                165                 170                 175

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr Trp
            180                 185                 190

Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
        195                 200                 205

Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys
    210                 215                 220

Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser Val
225                 230                 235                 240

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
                245                 250                 255

Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp Pro Asp
            260                 265                 270

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
        275                 280                 285

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
    290                 295                 300

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
305                 310                 315                 320
```

```
Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile
                325                 330                 335

Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro
            340                 345                 350

Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met
        355                 360                 365

Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn
    370                 375                 380

Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser
385                 390                 395                 400

Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn
                405                 410                 415

Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu
            420                 425                 430

His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys Gly
        435                 440                 445

Gly Ser Gly Gly Ser Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn
    450                 455                 460

Cys Gly Cys Gln Asn Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser
465                 470                 475                 480

Arg Ile Arg Arg Cys Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys
                485                 490                 495

Glu Ile Asp Ala Ser Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr
            500                 505                 510

Arg Gly Lys Ala Asn Thr Asp Thr Lys Gly Arg Pro Cys Leu Ala Trp
        515                 520                 525
```

Asn Ala Pro Ala Val Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp
    530   535   540

Ala Ile Ser Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp
545   550   555   560

Asn Gln Lys Arg Pro Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe
                565   570   575

Val Gln Glu Cys Met Val His Asp Cys
            580   585

<210> 118
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 118
Tyr Glu Leu Thr Gln Pro Pro Ser Ala Ser Val Asn Val Gly Glu Thr
1   5   10   15

Val Lys Ile Thr Cys Ser Gly Asp Gln Leu Pro Lys Tyr Phe Ala Asp
            20   25   30

Trp Phe His Gln Arg Ser Asp Gln Thr Ile Leu Gln Val Ile Tyr Asp
        35   40   45

Asp Asn Lys Arg Pro Ser Gly Ile Pro Glu Arg Ile Ser Gly Ser Ser
    50   55   60

Ser Gly Thr Thr Ala Thr Leu Thr Ile Arg Asp Val Arg Ala Glu Asp
65   70   75   80

Glu Gly Asp Tyr Tyr Cys Phe Ser Gly Tyr Val Asp Ser Asp Ser Lys
                85   90   95

Leu Tyr Val Phe Gly Ser Gly Thr Gln Leu Thr Val Leu Gly Gly Pro
            100   105   110

Lys Ser Ser Pro Lys Val Thr Val Phe Pro Pro Ser Pro Glu Glu Leu
115 120 125

Arg Thr Asn Lys Ala Thr Leu Val Cys Leu Val Asn Asp Phe Tyr Pro
130 135 140

Gly Ser Ala Thr Val Thr Trp Lys Ala Asn Gly Ala Thr Ile Asn Asp
145 150 155 160

Gly Val Lys Thr Thr Lys Pro Ser Lys Gln Gly Gln Asn Tyr Met Thr
165 170 175

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

Val Ser Cys Gln Val Thr His Glu Gly Glu Thr Val Glu Lys Ser Leu
195 200 205

Ser Pro Ala Glu Cys Leu
210

<210> 119
<211> 457
<212> PRT
<213> Artificial Sequence

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

<400> 119
Arg Leu Leu Glu Ser Gly Gly Gly Leu Val Lys Pro Glu Gly Ser Leu
1 5 10 15

Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Asp Tyr Phe Met
20 25 30

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

Ile Tyr Thr Lys Ser Tyr Asn Tyr Ala Thr Tyr Tyr Ser Gly Ser Val
50 55 60

```
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Arg Ser Met Val Tyr
65                  70                  75                  80

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

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

Thr Gln Val Thr Val Ser Ser Ala Thr Thr Thr Ala Pro Ser Val Tyr
        115                 120                 125

Pro Leu Ala Pro Ala Cys Asp Ser Thr Thr Ser Thr Thr Asp Thr Val
    130                 135                 140

Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ser
                165                 170                 175

Val Leu His Ser Gly Leu Tyr Ser Leu Ser Ser Ser Val Thr Val Pro
            180                 185                 190

Ser Ser Thr Trp Pro Lys Gln Pro Ile Thr Cys Asn Val Ala His Pro
        195                 200                 205

Ala Ser Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Thr Asp Thr
    210                 215                 220

Asp Thr Cys Pro Asn Pro Pro Asp Pro Cys Pro Thr Cys Pro Thr Pro
225                 230                 235                 240

Asp Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys
                245                 250                 255

Asp Val Leu Met Ile Ser Leu Thr Pro Lys Ile Thr Cys Val Val Val
            260                 265                 270

Asp Val Ser Glu Glu Glu Pro Asp Val Gln Phe Asn Trp Tyr Val Asn
        275                 280                 285
```

```
Asn Val Glu Asp Lys Thr Ala Gln Thr Glu Thr Arg Gln Arg Gln Tyr
    290                 295                 300

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Pro Ile Lys His Gln Asp
305                 310                 315                 320

Trp Met Ser Gly Lys Val Phe Lys Cys Lys Val Asn Asn Asn Ala Leu
                325                 330                 335

Pro Ser Pro Ile Glu Lys Thr Ile Ser Lys Pro Arg Gly Gln Val Arg
            340                 345                 350

Val Pro Gln Ile Tyr Thr Phe Pro Pro Pro Ile Glu Gln Thr Val Lys
        355                 360                 365

Lys Asp Val Ser Val Thr Cys Leu Val Thr Gly Phe Leu Pro Gln Asp
    370                 375                 380

Ile His Val Glu Trp Glu Ser Asn Gly Gln Pro Gln Pro Glu Gln Asn
385                 390                 395                 400

Tyr Lys Asn Thr Gln Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Leu
                405                 410                 415

Tyr Ser Lys Leu Asn Val Pro Lys Ser Arg Trp Asp Gln Gly Asp Ser
            420                 425                 430

Phe Thr Cys Ser Val Ile His Glu Ala Leu His Asn His His Met Thr
        435                 440                 445

Lys Thr Ile Ser Arg Ser Leu Gly Asn
    450                 455
```

<210> 120
<211> 595
<212> PRT
<213> Artificial Sequence

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

<400> 120
Arg Leu Leu Glu Ser Gly Gly Gly Leu Val Lys Pro Glu Gly Ser Leu
1   5   10   15

Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Asp Tyr Phe Met
            20   25   30

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

Ile Tyr Thr Lys Ser Tyr Asn Tyr Ala Thr Tyr Tyr Ser Gly Ser Val
    50   55   60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser Arg Ser Met Val Tyr
65   70   75   80

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

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

Thr Gln Val Thr Val Ser Ser Ala Thr Thr Thr Ala Pro Ser Val Tyr
        115   120   125

Pro Leu Ala Pro Ala Cys Asp Ser Thr Thr Ser Thr Thr Asp Thr Val
    130   135   140

Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val
145   150   155   160

Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ser
                165   170   175

Val Leu His Ser Gly Leu Tyr Ser Leu Ser Ser Ser Val Thr Val Pro
            180   185   190

Ser Ser Thr Trp Pro Lys Gln Pro Ile Thr Cys Asn Val Ala His Pro
        195   200   205

```
Ala Ser Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Thr Asp Thr
    210                 215                 220

Asp Thr Cys Pro Asn Pro Pro Asp Pro Cys Pro Thr Cys Pro Thr Pro
225                 230                 235                 240

Asp Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Pro Lys
                245                 250                 255

Asp Val Leu Met Ile Ser Leu Thr Pro Lys Ile Thr Cys Val Val Val
            260                 265                 270

Asp Val Ser Glu Glu Glu Pro Asp Val Gln Phe Asn Trp Tyr Val Asn
        275                 280                 285

Asn Val Glu Asp Lys Thr Ala Gln Thr Glu Thr Arg Gln Arg Gln Tyr
    290                 295                 300

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Pro Ile Lys His Gln Asp
305                 310                 315                 320

Trp Met Ser Gly Lys Val Phe Lys Cys Lys Val Asn Asn Asn Ala Leu
                325                 330                 335

Pro Ser Pro Ile Glu Lys Thr Ile Ser Lys Pro Arg Gly Gln Val Arg
            340                 345                 350

Val Pro Gln Ile Tyr Thr Phe Pro Pro Pro Ile Glu Gln Thr Val Lys
        355                 360                 365

Lys Asp Val Ser Val Thr Cys Leu Val Thr Gly Phe Leu Pro Gln Asp
    370                 375                 380

Ile His Val Glu Trp Glu Ser Asn Gly Gln Pro Gln Pro Glu Gln Asn
385                 390                 395                 400

Tyr Lys Asn Thr Gln Pro Val Leu Asp Ser Asp Gly Ser Tyr Phe Leu
                405                 410                 415

Tyr Ser Lys Leu Asn Val Pro Lys Ser Arg Trp Asp Gln Gly Asp Ser
            420                 425                 430
```

```
Phe Thr Cys Ser Val Ile His Glu Ala Leu His Asn His His Met Thr
        435                 440                 445

Lys Thr Ile Ser Arg Ser Leu Gly Asn Gly Gly Ser Gly Gly Ser Gly
    450                 455                 460

Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn Gly
465                 470                 475                 480

Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys Ser
                485                 490                 495

Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser Lys
            500                 505                 510

Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn Thr
        515                 520                 525

Asp Thr Lys Gly Arg Pro Cys Leu Ala Trp Asn Ala Pro Ala Val Leu
    530                 535                 540

Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly Leu
545                 550                 555                 560

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro Trp
                565                 570                 575

Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met Val
            580                 585                 590

His Asp Cys
        595
```

<210> 121
<211> 594
<212> PRT
<213> Artificial Sequence

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

<400> 121
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1   5   10   15

Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
            20   25   30

Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
        35   40   45

Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
    50   55   60

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

Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
                85   90   95

Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
            100   105   110

Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
        115   120   125

Val His Asp Cys Gly Gly Ser Gly Gly Arg Leu Leu Glu Ser Gly Gly
    130   135   140

Gly Leu Val Lys Pro Glu Gly Ser Leu Lys Leu Ser Cys Val Ala Ser
145   150   155   160

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

Gly Lys Gly Leu Glu Trp Val Ala His Ile Tyr Thr Lys Ser Tyr Asn
            180   185   190

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

```
Arg Asp Asp Ser Arg Ser Met Val Tyr Leu Gln Met Asn Asn Leu Arg
    210                 215                 220

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

Pro Ser Leu Asp Phe Trp Gly Gln Gly Thr Gln Val Thr Val Ser Ser
                245                 250                 255

Ala Thr Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala Pro Ala Cys Asp
            260                 265                 270

Ser Thr Thr Ser Thr Thr Asp Thr Val Thr Leu Gly Cys Leu Val Lys
        275                 280                 285

Gly Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
    290                 295                 300

Thr Ser Gly Val His Thr Phe Pro Ser Val Leu His Ser Gly Leu Tyr
305                 310                 315                 320

Ser Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp Pro Lys Gln
                325                 330                 335

Pro Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys Val Asp
            340                 345                 350

Lys Lys Ile Glu Pro Arg Thr Asp Thr Asp Thr Cys Pro Asn Pro Pro
        355                 360                 365

Asp Pro Cys Pro Thr Cys Pro Thr Pro Asp Leu Leu Gly Gly Pro Ser
    370                 375                 380

Val Phe Ile Phe Pro Pro Lys Pro Lys Asp Val Leu Met Ile Ser Leu
385                 390                 395                 400

Thr Pro Lys Ile Thr Cys Val Val Val Asp Val Ser Glu Glu Glu Pro
                405                 410                 415

Asp Val Gln Phe Asn Trp Tyr Val Asn Asn Val Glu Asp Lys Thr Ala
            420                 425                 430
```

```
Gln Thr Glu Thr Arg Gln Arg Gln Tyr Asn Ser Thr Tyr Arg Val Val
        435                 440                 445

Ser Val Leu Pro Ile Lys His Gln Asp Trp Met Ser Gly Lys Val Phe
    450                 455                 460

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

Ile Ser Lys Pro Arg Gly Gln Val Arg Val Pro Gln Ile Tyr Thr Phe
                485                 490                 495

Pro Pro Pro Ile Glu Gln Thr Val Lys Lys Asp Val Ser Val Thr Cys
            500                 505                 510

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

Asn Gly Gln Pro Gln Pro Glu Gln Asn Tyr Lys Asn Thr Gln Pro Val
    530                 535                 540

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

Lys Ser Arg Trp Asp Gln Gly Asp Ser Phe Thr Cys Ser Val Ile His
                565                 570                 575

Glu Ala Leu His Asn His His Met Thr Lys Thr Ile Ser Arg Ser Leu
            580                 585                 590

Gly Asn
```

<210> 122
<211> 287
<212> PRT
<213> Homo sapiens

<400> 122

```
Met Gln Ile Pro Gln Ala Pro Trp Pro Val Val Trp Ala Val Leu Gln
1               5                   10                  15
```

```
Leu Gly Trp Arg Pro Gly Trp Phe Leu Asp Ser Pro Asp Arg Pro Trp
            20                  25                  30

Asn Pro Pro Thr Phe Ser Pro Ala Leu Leu Val Val Thr Glu Gly Asp
        35                  40                  45

Asn Thr Phe Thr Cys Ser Phe Ser Asn Thr Ser Glu Ser Phe Val Leu
    50                  55                  60

Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala
65                  70                  75                  80

Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg Val
                85                  90                  95

Thr Gln Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg Ala
            100                 105                 110

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

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

Glu Arg Arg Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro Arg
145                 150                 155                 160

Pro Ala Gly Gln Phe Gln Thr Leu Val Val Gly Val Val Gly Gly Leu
                165                 170                 175

Leu Gly Ser Leu Val Leu Leu Val Trp Val Leu Ala Val Ile Cys Ser
            180                 185                 190

Arg Ala Ala Arg Gly Thr Ile Gly Ala Arg Arg Thr Gly Gln Pro Leu
        195                 200                 205

Lys Glu Asp Pro Ser Ala Val Pro Val Phe Ser Val Asp Tyr Gly Glu
    210                 215                 220
```

Leu Asp Phe Gln Trp Arg Glu Lys Thr Pro Glu Pro Pro Val Pro Cys
225 230 235 240

Val Pro Glu Gln Thr Glu Tyr Ala Thr Ile Val Phe Pro Ser Gly Met
245 250 255

Gly Thr Ser Ser Pro Ala Arg Arg Gly Ser Ala Asp Gly Pro Arg Ser
260 265 270

Ala Gln Pro Leu Arg Pro Glu Asp Gly His Cys Ser Trp Pro Leu
275 280 285

<210> 123
<211> 287
<212> PRT
<213> Artificial Sequence

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

<400> 123
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1 5 10 15

Gly Thr Cys Val Ser Tyr Lys Tyr Phe Ser Asn Ile His Arg Cys Asn
20 25 30

Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
35 40 45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
50 55 60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65 70 75 80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
85 90 95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
100 105 110

```
Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125


His Asp Cys Ala Gly Gly Ser Gly Gly Pro Gly Trp Phe Leu Asp Ser
    130                 135                 140


Pro Asp Arg Pro Trp Asn Pro Pro Thr Phe Ser Pro Ala Leu Leu Val
145                 150                 155                 160


Val Thr Glu Gly Asp Asn Ala Thr Phe Thr Cys Ser Phe Ser Asn Thr
                165                 170                 175


Ser Glu Ser Phe Val Leu Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln
            180                 185                 190


Thr Asp Lys Leu Ala Ala Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln
        195                 200                 205


Asp Cys Arg Phe Arg Val Thr Gln Leu Pro Asn Gly Arg Asp Phe His
    210                 215                 220


Met Ser Val Val Arg Ala Arg Arg Asn Asp Ser Gly Thr Tyr Leu Cys
225                 230                 235                 240


Gly Ala Ile Ser Leu Ala Pro Lys Ala Gln Ile Lys Glu Ser Leu Arg
                245                 250                 255


Ala Glu Leu Arg Val Thr Glu Arg Arg Ala Glu Val Pro Thr Ala His
            260                 265                 270


Pro Ser Pro Ser Pro Arg Pro Ala Gly Gln Phe Gln Thr Leu Val
        275                 280                 285


<210> 124
<211> 292
<212> PRT
<213> Artificial Sequence

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

<400> 124
```

```
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                  10                  15

Gly Thr Cys Val Ser Tyr Lys Tyr Phe Ser Asn Ile His Arg Cys Asn
            20                  25                  30

Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110

Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Pro Gly
    130                 135                 140

Trp Phe Leu Asp Ser Pro Asp Arg Pro Trp Asn Pro Pro Thr Phe Ser
145                 150                 155                 160

Pro Ala Leu Leu Val Val Thr Glu Gly Asp Asn Ala Thr Phe Thr Cys
                165                 170                 175

Ser Phe Ser Asn Thr Ser Glu Ser Phe Val Leu Asn Trp Tyr Arg Met
            180                 185                 190

Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala Phe Pro Glu Asp Arg
        195                 200                 205

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

```
Gly Arg Asp Phe His Met Ser Val Val Arg Ala Arg Arg Asn Asp Ser
225                 230                 235                 240


Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu Ala Pro Lys Ala Gln Ile
                245                 250                 255


Lys Glu Ser Leu Arg Ala Glu Leu Arg Val Thr Glu Arg Arg Ala Glu
            260                 265                 270


Val Pro Thr Ala His Pro Ser Pro Ser Pro Arg Pro Ala Gly Gln Phe
        275                 280                 285


Gln Thr Leu Val
    290
```

<210> 125
<211> 287
<212> PRT
<213> Artificial Sequence

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

<400> 125

```
Pro Gly Trp Phe Leu Asp Ser Pro Asp Arg Pro Trp Asn Pro Pro Thr
1               5                   10                  15


Phe Ser Pro Ala Leu Leu Val Val Thr Glu Gly Asp Asn Ala Thr Phe
            20                  25                  30


Thr Cys Ser Phe Ser Asn Thr Ser Glu Ser Phe Val Leu Asn Trp Tyr
        35                  40                  45


Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala Phe Pro Glu
    50                  55                  60


Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg Val Thr Gln Leu
65                  70                  75                  80


Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg Ala Arg Arg Asn
                85                  90                  95
```

```
Asp Ser Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu Ala Pro Lys Ala
            100                 105                 110

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

Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro Arg Pro Ala Gly
    130                 135                 140

Gln Phe Gln Thr Leu Val Gly Gly Ser Gly Gly Ser Asn Glu Leu His
145                 150                 155                 160

Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys Val Ser
                165                 170                 175

Tyr Lys Tyr Phe Ser Asn Ile His Arg Cys Asn Cys Pro Lys Lys Phe
            180                 185                 190

Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly
        195                 200                 205

Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met Gly Arg
    210                 215                 220

Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr Tyr His
225                 230                 235                 240

Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His Asn Tyr
                245                 250                 255

Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp Cys Tyr Val Gln Val
            260                 265                 270

Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val His Asp Cys Ala
        275                 280                 285
```

<210> 126
<211> 155
<212> PRT
<213> Artificial Sequence

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

<400> 126
Pro Ser Pro Arg Pro Ala Gly Gln Phe Gln Thr Leu Val Gly Gly Ser
1 5 10 15

Gly Gly Gly Gly Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser
20 25 30

Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe
35 40 45

Ser Asn Ile His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His
50 55 60

Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe
65 70 75 80

Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro
85 90 95

Trp Asn Ser Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser
100 105 110

Asp Ala Leu Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro
115 120 125

Asp Asn Arg Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro
130 135 140

Leu Val Gln Glu Cys Met Val His Asp Cys Ala
145 150 155

<210> 127
<211> 286
<212> PRT
<213> Artificial Sequence

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

<400> 127
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1   5   10   15

Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
            20   25   30

Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
        35   40   45

Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
    50   55   60

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

Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
                85   90   95

Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
            100   105   110

Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
        115   120   125

Val His Asp Cys Gly Gly Ser Gly Gly Ala Pro Thr Ser Ser Ser Thr
    130   135   140

Ser Ser Ser Thr Ala Glu Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln
145   150   155   160

Gln Gln Gln His Leu Glu Gln Leu Leu Met Asp Leu Gln Glu Leu Leu
                165   170   175

Ser Arg Met Glu Asn Tyr Arg Asn Leu Lys Leu Pro Arg Met Leu Thr
            180   185   190

Phe Lys Phe Tyr Leu Pro Lys Gln Ala Thr Glu Leu Lys Asp Leu Gln
        195   200   205

```
Cys Leu Glu Asp Glu Leu Gly Pro Leu Arg His Val Leu Asp Leu Thr
    210                 215                 220

Gln Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe Ile Ser Asn
225                 230                 235                 240

Ile Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn Thr Phe Glu
                245                 250                 255

Cys Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe Leu Arg Arg
            260                 265                 270

Trp Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro Gln
        275                 280                 285
```

<210> 128
<211> 251
<212> PRT
<213> Artificial Sequence

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

<400> 128

```
Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys Gly Cys Gln Asn
1               5                   10                  15

Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg Ile Arg Arg Cys
            20                  25                  30

Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu Ile Asp Ala Ser
        35                  40                  45

Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg Gly Lys Ala Asn
    50                  55                  60

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

Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala Ile Ser Leu Gly
                85                  90                  95
```

```
Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Gln Lys Arg Pro
            100                 105                 110

Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val Gln Glu Cys Met
        115                 120                 125

Val His Asp Cys Gly Gly Ser Gly Gly Asn Trp Ile Asp Val Arg Tyr
    130                 135                 140

Asp Leu Glu Lys Ile Glu Ser Leu Ile Gln Ser Ile His Ile Asp Thr
145                 150                 155                 160

Thr Leu Tyr Thr Asp Ser Asp Phe His Pro Ser Cys Lys Val Thr Ala
                165                 170                 175

Met Asn Cys Phe Leu Leu Glu Leu Gln Val Ile Leu His Glu Tyr Ser
            180                 185                 190

Asn Met Thr Leu Asn Glu Thr Val Arg Asn Val Leu Tyr Leu Ala Asn
        195                 200                 205

Ser Thr Leu Ser Ser Asn Lys Asn Val Ala Glu Ser Gly Cys Lys Glu
    210                 215                 220

Cys Glu Glu Leu Glu Glu Lys Thr Phe Thr Glu Phe Leu Gln Ser Phe
225                 230                 235                 240

Ile Arg Ile Val Gln Met Phe Ile Asn Thr Ser
                245                 250
```

<210> 129
<211> 558
<212> PRT
<213> Artificial Sequence

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

<400> 129

```
Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp
1               5                   10                  15
```

```
Leu Arg Gln Gly Met Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu
            20                  25                  30

Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val
        35                  40                  45

Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val
    50                  55                  60

Val Ala Lys Ala Gly Val Tyr Tyr Val Phe Phe Gln Leu Glu Leu Arg
65                  70                  75                  80

Arg Val Val Ala Gly Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His
                85                  90                  95

Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr
            100                 105                 110

Val Asp Leu Pro Pro Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly
        115                 120                 125

Phe Gln Gly Arg Leu Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val
    130                 135                 140

His Leu His Thr Glu Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln
145                 150                 155                 160

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

Gly Leu Pro Ser Pro Arg Ser Glu Gly Ser Gly Arg Glu Gly Pro Glu
            180                 185                 190

Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp Leu Arg Gln Gly Met
        195                 200                 205

Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu
    210                 215                 220

Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly
225                 230                 235                 240
```

```
Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly
                245                 250                 255

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

Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His Leu Gln Pro Leu Arg
        275                 280                 285

Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro
    290                 295                 300

Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu
305                 310                 315                 320

Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val His Leu His Thr Glu
                325                 330                 335

Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu
            340                 345                 350

Gly Leu Phe Arg Val Thr Pro Glu Ile Pro Ala Gly Leu Pro Ser Pro
        355                 360                 365

Arg Ser Glu Gly Ser Gly Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp
    370                 375                 380

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

Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp
                405                 410                 415

Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu
            420                 425                 430

Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly Val Tyr Tyr Val Phe
        435                 440                 445
```

```
Phe Gln Leu Glu Leu Arg Arg Val Val Ala Gly Glu Gly Ser Gly Ser
    450                 455                 460

Val Ser Leu Ala Leu His Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala
465                 470                 475                 480

Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro Ala Ser Ser Glu Ala
                485                 490                 495

Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu Leu His Leu Ser Ala
            500                 505                 510

Gly Gln Arg Leu Gly Val His Leu His Thr Glu Ala Arg Ala Arg His
        515                 520                 525

Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu Gly Leu Phe Arg Val
    530                 535                 540

Thr Pro Glu Ile Pro Ala Gly Leu Pro Ser Pro Arg Ser Glu
545                 550                 555


<210> 130
<211> 558
<212> PRT
<213> Artificial Sequence

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

<400> 130
Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp
1               5                   10                  15

Leu Arg Gln Gly Met Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu
            20                  25                  30

Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val
        35                  40                  45

Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val
    50                  55                  60
```

```
Val Ala Lys Ala Gly Val Tyr Tyr Val Phe Phe Gln Leu Glu Leu Arg
65                  70                  75                  80

Arg Val Val Ala Gly Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His
                85                  90                  95

Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr
            100                 105                 110

Val Asp Leu Pro Pro Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly
        115                 120                 125

Phe Gln Gly Arg Leu Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val
    130                 135                 140

His Leu His Thr Glu Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln
145                 150                 155                 160

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

Gly Leu Pro Ser Pro Arg Ser Glu Gly Ser Gly Arg Glu Gly Pro Glu
            180                 185                 190

Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp Leu Arg Gln Gly Met
        195                 200                 205

Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu
    210                 215                 220

Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly
225                 230                 235                 240

Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly
                245                 250                 255

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

Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His Leu Gln Pro Leu Arg
        275                 280                 285
```

```
Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro
    290                 295                 300

Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu
305                 310                 315                 320

Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val His Leu His Thr Glu
                325                 330                 335

Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu
            340                 345                 350

Gly Leu Phe Arg Val Thr Pro Glu Ile Pro Ala Gly Leu Pro Ser Pro
        355                 360                 365

Arg Ser Glu Gly Ser Gly Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp
    370                 375                 380

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

Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp
                405                 410                 415

Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu
            420                 425                 430

Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly Val Tyr Tyr Val Phe
        435                 440                 445

Phe Gln Leu Glu Leu Arg Arg Val Val Ala Gly Glu Gly Ser Gly Ser
    450                 455                 460

Val Ser Leu Ala Leu His Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala
465                 470                 475                 480

Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro Ala Ser Ser Glu Ala
                485                 490                 495
```

Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu Leu His Leu Ser Ala
500 505 510

Gly Gln Arg Leu Gly Val His Leu His Thr Glu Ala Arg Ala Arg His
515 520 525

Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu Gly Leu Phe Arg Val
530 535 540

Thr Pro Glu Ile Pro Ala Gly Leu Pro Ser Pro Arg Ser Glu
545 550 555

<210> 131
<211> 695
<212> PRT
<213> Artificial Sequence

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

<400> 131
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1 5 10 15

Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
20 25 30

Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
35 40 45

Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
50 55 60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65 70 75 80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
85 90 95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
100 105 110

```
Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala Gly Gly Ser Gly Gly Arg Glu Gly Pro Glu Leu Ser
    130                 135                 140

Pro Asp Asp Pro Ala Gly Leu Leu Asp Leu Arg Gln Gly Met Phe Ala
145                 150                 155                 160

Gln Leu Val Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu Ser Trp
                165                 170                 175

Tyr Ser Asp Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly Leu Ser
            180                 185                 190

Tyr Lys Glu Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly Val Tyr
        195                 200                 205

Tyr Val Phe Phe Gln Leu Glu Leu Arg Arg Val Val Ala Gly Glu Gly
    210                 215                 220

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

Ala Gly Ala Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro Ala Ser
                245                 250                 255

Ser Glu Ala Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu Leu His
            260                 265                 270

Leu Ser Ala Gly Gln Arg Leu Gly Val His Leu His Thr Glu Ala Arg
        275                 280                 285

Ala Arg His Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu Gly Leu
    290                 295                 300

Phe Arg Val Thr Pro Glu Ile Pro Ala Gly Leu Pro Ser Pro Arg Ser
305                 310                 315                 320

Glu Gly Ser Gly Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp Pro Ala
                325                 330                 335
```

```
Gly Leu Leu Asp Leu Arg Gln Gly Met Phe Ala Gln Leu Val Ala Gln
            340                 345                 350

Asn Val Leu Leu Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp Pro Gly
        355                 360                 365

Leu Ala Gly Val Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu Asp Thr
    370                 375                 380

Lys Glu Leu Val Val Ala Lys Ala Gly Val Tyr Tyr Val Phe Phe Gln
385                 390                 395                 400

Leu Glu Leu Arg Arg Val Val Ala Gly Glu Gly Ser Gly Ser Val Ser
                405                 410                 415

Leu Ala Leu His Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala Ala Ala
            420                 425                 430

Leu Ala Leu Thr Val Asp Leu Pro Pro Ala Ser Ser Glu Ala Arg Asn
        435                 440                 445

Ser Ala Phe Gly Phe Gln Gly Arg Leu Leu His Leu Ser Ala Gly Gln
    450                 455                 460

Arg Leu Gly Val His Leu His Thr Glu Ala Arg Ala Arg His Ala Trp
465                 470                 475                 480

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

Glu Ile Pro Ala Gly Leu Pro Ser Pro Arg Ser Glu Gly Ser Gly Arg
            500                 505                 510

Glu Gly Pro Glu Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp Leu
        515                 520                 525

Arg Gln Gly Met Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu Ile
    530                 535                 540
```

```
Asp Gly Pro Leu Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val Ser
545                 550                 555                 560


Leu Thr Gly Gly Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val Val
                565                 570                 575


Ala Lys Ala Gly Val Tyr Tyr Val Phe Phe Gln Leu Glu Leu Arg Arg
            580                 585                 590


Val Val Ala Gly Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His Leu
        595                 600                 605


Gln Pro Leu Arg Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr Val
    610                 615                 620


Asp Leu Pro Pro Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly Phe
625                 630                 635                 640


Gln Gly Arg Leu Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val His
                645                 650                 655


Leu His Thr Glu Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln Gly
            660                 665                 670


Ala Thr Val Leu Gly Leu Phe Arg Val Thr Pro Glu Ile Pro Ala Gly
        675                 680                 685


Leu Pro Ser Pro Arg Ser Glu
    690                 695


<210> 132
<211> 695
<212> PRT
<213> Artificial Sequence

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

<400> 132
Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp
1               5                   10                  15
```

```
Leu Arg Gln Gly Met Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu
            20                  25                  30

Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val
        35                  40                  45

Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val
    50                  55                  60

Val Ala Lys Ala Gly Val Tyr Tyr Val Phe Phe Gln Leu Glu Leu Arg
65                  70                  75                  80

Arg Val Val Ala Gly Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His
                85                  90                  95

Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr
            100                 105                 110

Val Asp Leu Pro Pro Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly
        115                 120                 125

Phe Gln Gly Arg Leu Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val
    130                 135                 140

His Leu His Thr Glu Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln
145                 150                 155                 160

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

Gly Leu Pro Ser Pro Arg Ser Glu Gly Ser Gly Arg Glu Gly Pro Glu
            180                 185                 190

Leu Ser Pro Asp Asp Pro Ala Gly Leu Leu Asp Leu Arg Gln Gly Met
        195                 200                 205

Phe Ala Gln Leu Val Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu
    210                 215                 220

Ser Trp Tyr Ser Asp Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly
225                 230                 235                 240
```

```
Leu Ser Tyr Lys Glu Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly
                245                 250                 255

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

Glu Gly Ser Gly Ser Val Ser Leu Ala Leu His Leu Gln Pro Leu Arg
        275                 280                 285

Ser Ala Ala Gly Ala Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro
    290                 295                 300

Ala Ser Ser Glu Ala Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu
305                 310                 315                 320

Leu His Leu Ser Ala Gly Gln Arg Leu Gly Val His Leu His Thr Glu
                325                 330                 335

Ala Arg Ala Arg His Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu
            340                 345                 350

Gly Leu Phe Arg Val Thr Pro Glu Ile Pro Ala Gly Leu Pro Ser Pro
        355                 360                 365

Arg Ser Glu Gly Ser Gly Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp
    370                 375                 380

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

Ala Gln Asn Val Leu Leu Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp
                405                 410                 415

Pro Gly Leu Ala Gly Val Ser Leu Thr Gly Gly Leu Ser Tyr Lys Glu
            420                 425                 430

Asp Thr Lys Glu Leu Val Val Ala Lys Ala Gly Val Tyr Tyr Val Phe
        435                 440                 445
```

```
Phe Gln Leu Glu Leu Arg Arg Val Val Ala Gly Glu Gly Ser Gly Ser
    450                 455                 460

Val Ser Leu Ala Leu His Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala
465                 470                 475                 480

Ala Ala Leu Ala Leu Thr Val Asp Leu Pro Pro Ala Ser Ser Glu Ala
                485                 490                 495

Arg Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu Leu His Leu Ser Ala
            500                 505                 510

Gly Gln Arg Leu Gly Val His Leu His Thr Glu Ala Arg Ala Arg His
        515                 520                 525

Ala Trp Gln Leu Thr Gln Gly Ala Thr Val Leu Gly Leu Phe Arg Val
    530                 535                 540

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

Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys
                565                 570                 575

Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His
            580                 585                 590

Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp
        595                 600                 605

Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys
    610                 615                 620

Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala
625                 630                 635                 640

Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln
                645                 650                 655

Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg
            660                 665                 670
```

Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu
675 680 685

Cys Met Val His Asp Cys Ala
690 695

<210> 133
<211> 777
<212> PRT
<213> Artificial Sequence

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

<400> 133
Leu Gln Asp Pro Cys Ser Asn Cys Pro Ala Gly Thr Phe Cys Asp Asn
1 5 10 15

Asn Arg Asn Gln Ile Cys Ser Pro Cys Pro Pro Asn Ser Phe Ser Ser
20 25 30

Ala Gly Gly Gln Arg Thr Cys Asp Ile Cys Arg Gln Cys Lys Gly Val
35 40 45

Phe Arg Thr Arg Lys Glu Cys Ser Ser Thr Ser Asn Ala Glu Cys Asp
50 55 60

Cys Thr Pro Gly Phe His Cys Leu Gly Ala Gly Cys Ser Met Cys Glu
65 70 75 80

Gln Asp Cys Lys Gln Gly Gln Glu Leu Thr Lys Lys Gly Cys Lys Asp
85 90 95

Cys Cys Phe Gly Thr Phe Asn Asp Gln Lys Arg Gly Ile Cys Arg Pro
100 105 110

Trp Thr Asn Cys Ser Leu Asp Gly Lys Ser Val Leu Val Asn Gly Thr
115 120 125

Lys Glu Arg Asp Val Val Cys Gly Pro Ser Pro Ala Asp Leu Ser Pro
130 135 140

```
Gly Ala Ser Ser Val Thr Pro Pro Ala Pro Ala Arg Glu Pro Gly His
145                 150                 155                 160

Ser Pro Gln Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Arg Thr Val
                165                 170                 175

Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys
            180                 185                 190

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

Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn
    210                 215                 220

Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser
225                 230                 235                 240

Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys
                245                 250                 255

Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
            260                 265                 270

Lys Ser Phe Asn Arg Gly Glu Cys Gly Gly Gly Gly Ser Gly Gly Gly
        275                 280                 285

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Ser Thr Lys
    290                 295                 300

Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly
305                 310                 315                 320

Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro
                325                 330                 335

Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr
            340                 345                 350
```

```
Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val
        355                 360                 365

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

Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro
385                 390                 395                 400

Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu
                405                 410                 415

Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
            420                 425                 430

Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
        435                 440                 445

Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly
    450                 455                 460

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn
465                 470                 475                 480

Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp
                485                 490                 495

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro
            500                 505                 510

Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
        515                 520                 525

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
    530                 535                 540

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
545                 550                 555                 560

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
                565                 570                 575
```

```
Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
            580                 585                 590

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
        595                 600                 605

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
    610                 615                 620

Ser Leu Ser Pro Gly Lys Gly Gly Ser Gly Gly Gly Gly Gly Ser Gly
625                 630                 635                 640

Gly Gly Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys
                645                 650                 655

Asp Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn
            660                 665                 670

Ile His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu
        675                 680                 685

Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg
    690                 695                 700

Gly Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn
705                 710                 715                 720

Ser Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala
                725                 730                 735

Leu Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn
            740                 745                 750

Arg Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val
        755                 760                 765

Gln Glu Cys Met Val His Asp Cys Ala
    770                 775
```

<210> 134
<211> 768
<212> PRT
<213> Artificial Sequence

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

<400> 134
Leu His Cys Val Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His
1 5 10 15

Glu Cys Arg Pro Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln
20 25 30

Asn Thr Val Cys Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val
35 40 45

Ser Ser Lys Pro Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly
50 55 60

Ser Glu Arg Lys Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg
65 70 75 80

Cys Arg Ala Gly Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp
85 90 95

Cys Ala Pro Cys Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala
100 105 110

Cys Lys Pro Trp Thr Asn Cys Thr Leu Ala Gly Lys His Thr Leu Gln
115 120 125

Pro Ala Ser Asn Ser Ser Asp Ala Ile Cys Glu Asp Arg Asp Pro Pro
130 135 140

Ala Thr Gln Pro Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr
145 150 155 160

Val Gln Pro Thr Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr
165 170 175

```
Arg Pro Val Glu Val Pro Gly Gly Arg Ala Gly Gly Gly Gly Ser Gly
            180                 185                 190

Gly Gly Gly Ser Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
        195                 200                 205

Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu
    210                 215                 220

Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp
225                 230                 235                 240

Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp
                245                 250                 255

Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys
            260                 265                 270

Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln
        275                 280                 285

Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys Gly
    290                 295                 300

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
305                 310                 315                 320

Gly Gly Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
                325                 330                 335

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

Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
        355                 360                 365

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

Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
385                 390                 395                 400
```

```
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
                405                 410                 415

Val Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
            420                 425                 430

Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
        435                 440                 445

Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
    450                 455                 460

Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
465                 470                 475                 480

Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
                485                 490                 495

Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
            500                 505                 510

Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
        515                 520                 525

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

Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
545                 550                 555                 560

Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
                565                 570                 575

Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
            580                 585                 590

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
        595                 600                 605
```

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

Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
625                 630                 635                 640

His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Gly Gly Ser
                645                 650                 655

Gly Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Asn Glu Leu
            660                 665                 670

His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys Val
        675                 680                 685

Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys Pro Lys Lys
    690                 695                 700

Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr Glu
705                 710                 715                 720

Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met Gly
                725                 730                 735

Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr Tyr
            740                 745                 750

His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His Asn
        755                 760                 765
```

<210> 135
<211> 719
<212> PRT
<213> Artificial Sequence

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

<400> 135

```
Gln Arg Pro Thr Gly Gly Pro Gly Cys Gly Pro Gly Arg Leu Leu Leu
1               5                   10                  15
```

```
Gly Thr Gly Thr Asp Ala Arg Cys Cys Arg Val His Thr Thr Arg Cys
            20                  25                  30

Cys Arg Asp Tyr Pro Gly Glu Glu Cys Cys Ser Glu Trp Asp Cys Met
        35                  40                  45

Cys Val Gln Pro Glu Phe His Cys Gly Asp Pro Cys Cys Thr Thr Cys
    50                  55                  60

Arg His His Pro Cys Pro Pro Gly Gln Gly Val Gln Ser Gln Gly Lys
65                  70                  75                  80

Phe Ser Phe Gly Phe Gln Cys Ile Asp Cys Ala Ser Gly Thr Phe Ser
                85                  90                  95

Gly Gly His Glu Gly His Cys Lys Pro Trp Thr Asp Cys Thr Gln Phe
            100                 105                 110

Gly Phe Leu Thr Val Phe Pro Gly Asn Lys Thr His Asn Ala Val Cys
        115                 120                 125

Val Pro Gly Ser Pro Pro Ala Glu Pro Gly Gly Gly Gly Ser Gly Gly
    130                 135                 140

Gly Gly Ser Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro
145                 150                 155                 160

Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu
                165                 170                 175

Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn
            180                 185                 190

Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser
        195                 200                 205

Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala
    210                 215                 220

Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly
225                 230                 235                 240
```

```
Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys Gly Gly
                245                 250                 255

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
            260                 265                 270

Gly Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        275                 280                 285

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    290                 295                 300

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
305                 310                 315                 320

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                325                 330                 335

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            340                 345                 350

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        355                 360                 365

Asp Lys Arg Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro
    370                 375                 380

Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe
385                 390                 395                 400

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                405                 410                 415

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
            420                 425                 430

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        435                 440                 445
```

```
Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
    450                 455                 460

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
465                 470                 475                 480

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
                485                 490                 495

Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg
            500                 505                 510

Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        515                 520                 525

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    530                 535                 540

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

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                565                 570                 575

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            580                 585                 590

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Gly Gly Ser Gly
        595                 600                 605

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Asn Glu Leu His
    610                 615                 620

Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys Val Ser
625                 630                 635                 640

Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys Pro Lys Lys Phe
                645                 650                 655

Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly
            660                 665                 670
```

Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met Gly Arg
        675   680   685

Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr Tyr His
    690   695   700

Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His Asn
705   710   715

<210> 136
<211> 927
<212> PRT
<213> Artificial Sequence

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

<400> 136
Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr His Phe Pro
1   5   10   15

Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala Phe Ser Arg
            20   25   30

Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn Leu Leu Leu
        35   40   45

Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly Cys Gln Ala
    50   55   60

Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met Pro Gln Ala
65   70   75   80

Glu Asn Gln Asp Pro Asp Ile Lys Ala His Val Asn Ser Leu Gly Glu
                85   90   95

Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His Arg Phe Leu
            100   105   110

Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys Asn Ala Phe
        115   120   125

```
Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser Glu Phe Asp
    130                 135                 140

Ile Phe Ile Asn Tyr Ile Glu Ala Tyr Met Thr Met Lys Ile Arg Asn
145                 150                 155                 160

Gly Gly Gly Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr
                165                 170                 175

His Phe Pro Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala
            180                 185                 190

Phe Ser Arg Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn
        195                 200                 205

Leu Leu Leu Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly
    210                 215                 220

Cys Gln Ala Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met
225                 230                 235                 240

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

Leu Gly Glu Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His
            260                 265                 270

Arg Phe Leu Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys
        275                 280                 285

Asn Ala Phe Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser
    290                 295                 300

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

Ile Arg Asn Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Arg Thr Val
                325                 330                 335
```

```
Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys
            340                 345                 350

Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg
        355                 360                 365

Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn
    370                 375                 380

Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser
385                 390                 395                 400

Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys
                405                 410                 415

Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
            420                 425                 430

Lys Ser Phe Asn Arg Gly Glu Cys Gly Gly Gly Gly Ser Gly Gly Gly
        435                 440                 445

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Ser Thr Lys
    450                 455                 460

Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly
465                 470                 475                 480

Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro
                485                 490                 495

Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr
            500                 505                 510

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

Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn
    530                 535                 540

Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro
545                 550                 555                 560
```

```
Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu
                565                 570                 575

Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
            580                 585                 590

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

Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly
    610                 615                 620

Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn
625                 630                 635                 640

Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp
                645                 650                 655

Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro
            660                 665                 670

Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
        675                 680                 685

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
    690                 695                 700

Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
705                 710                 715                 720

Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
                725                 730                 735

Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
            740                 745                 750

Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
        755                 760                 765
```

```
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
    770                 775                 780

Ser Leu Ser Pro Gly Lys Gly Gly Ser Gly Gly Ser Asn Glu Leu His
785                 790                 795                 800

Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys Val Ser
                805                 810                 815

Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys Pro Lys Lys Phe
            820                 825                 830

Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly
        835                 840                 845

Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met Gly Arg
    850                 855                 860

Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr Tyr His
865                 870                 875                 880

Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His Asn Tyr
                885                 890                 895

Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp Cys Tyr Val Gln Val
            900                 905                 910

Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val His Asp Cys Ala
        915                 920                 925


<210> 137
<211> 465
<212> PRT
<213> Artificial Sequence

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

<400> 137
Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr His Phe Pro
1               5                   10                  15
```

```
Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala Phe Ser Arg
            20                  25                  30

Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn Leu Leu Leu
        35                  40                  45

Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly Cys Gln Ala
    50                  55                  60

Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met Pro Gln Ala
65                  70                  75                  80

Glu Asn Gln Asp Pro Asp Ile Lys Ala His Val Asn Ser Leu Gly Glu
                85                  90                  95

Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His Arg Phe Leu
            100                 105                 110

Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys Asn Ala Phe
        115                 120                 125

Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser Glu Phe Asp
    130                 135                 140

Ile Phe Ile Asn Tyr Ile Glu Ala Tyr Met Thr Met Lys Ile Arg Asn
145                 150                 155                 160

Gly Gly Gly Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr
                165                 170                 175

His Phe Pro Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala
            180                 185                 190

Phe Ser Arg Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn
        195                 200                 205

Leu Leu Leu Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly
    210                 215                 220

Cys Gln Ala Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met
225                 230                 235                 240
```

```
Pro Gln Ala Glu Asn Gln Asp Pro Asp Ile Lys Ala His Val Asn Ser
                245                 250                 255

Leu Gly Glu Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His
            260                 265                 270

Arg Phe Leu Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys
        275                 280                 285

Asn Ala Phe Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser
    290                 295                 300

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

Ile Arg Asn Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ser Asn Glu
                325                 330                 335

Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys
            340                 345                 350

Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys Pro Lys
        355                 360                 365

Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr
    370                 375                 380

Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met
385                 390                 395                 400

Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr
                405                 410                 415

Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His
            420                 425                 430

Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp Cys Tyr Val
        435                 440                 445
```

Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val His Asp Cys
450 455 460

Ala
465

<210> 138
<211> 264
<212> PRT
<213> Artificial Sequence

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

<400> 138
Ala Pro Ala Arg Ser Pro Ser Pro Ser Thr Gln Pro Trp Glu His Val
1 5 10 15

Asn Ala Ile Gln Glu Ala Arg Arg Leu Leu Asn Leu Ser Arg Asp Thr
20 25 30

Ala Ala Glu Met Asn Glu Thr Val Glu Val Ile Ser Glu Met Phe Asp
35 40 45

Leu Gln Glu Pro Thr Cys Leu Gln Thr Arg Leu Glu Leu Tyr Lys Gln
50 55 60

Gly Leu Arg Gly Ser Leu Thr Lys Leu Lys Gly Pro Leu Thr Met Met
65 70 75 80

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

Ala Thr Gln Ile Ile Thr Phe Glu Ser Phe Lys Glu Asn Leu Lys Asp
100 105 110

Phe Leu Leu Val Ile Pro Phe Asp Cys Trp Glu Pro Val Gln Glu Gly
115 120 125

Gly Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp
130 135 140

```
Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile
145                 150                 155                 160


His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile
                165                 170                 175


Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly
            180                 185                 190


Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser
        195                 200                 205


Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu
    210                 215                 220


Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg
225                 230                 235                 240


Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln
                245                 250                 255


Glu Cys Met Val His Asp Cys Ala
            260


<210> 139
<211> 197
<212> PRT
<213> Homo sapiens

<400> 139
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                   10                  15


His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
            20                  25                  30


Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45


His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
    50                  55                  60
```

```
Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80


Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95


Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110


Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125


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


Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160


Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175


Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
            180                 185                 190


Tyr Leu Asn Ala Ser
        195


<210> 140
<211> 306
<212> PRT
<213> Homo sapiens

<400> 140
Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1               5                   10                  15


Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30


Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
        35                  40                  45
```

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

Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65                  70                  75                  80

Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
                85                  90                  95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
            100                 105                 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115                 120                 125

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

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145                 150                 155                 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
                245                 250                 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270
```

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275   280   285

Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290   295   300

Cys Ser
305

<210> 141
<211> 657
<212> PRT
<213> Artificial Sequence

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

<400> 141
Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1   5   10   15

Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
            20   25   30

Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly
        35   40   45

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

Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65   70   75   80

Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
                85   90   95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys
            100   105   110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115   120   125

```
Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln
    130                 135                 140

Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly
145                 150                 155                 160

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
                245                 250                 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285

Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300

Cys Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Arg Asn Leu Pro
305                 310                 315                 320

Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu His His Ser Gln
                325                 330                 335
```

```
Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys Ala Arg Gln Thr
            340                 345                 350

Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile
        355                 360                 365

Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu
    370                 375                 380

Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr
385                 390                 395                 400

Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Met Ala Leu
                405                 410                 415

Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe
            420                 425                 430

Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe
        435                 440                 445

Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu Met Gln Ala Leu
    450                 455                 460

Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro
465                 470                 475                 480

Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe
                485                 490                 495

Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser Tyr Leu Asn Ala
            500                 505                 510

Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ser Asn Glu
        515                 520                 525

Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys
    530                 535                 540

Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys Pro Lys
545                 550                 555                 560
```

```
Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr
                565                 570                 575


Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met
            580                 585                 590


Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr
        595                 600                 605


Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His
    610                 615                 620


Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp Cys Tyr Val
625                 630                 635                 640


Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val His Asp Cys
                645                 650                 655


Ala
```

<210> 142
<211> 448
<212> PRT
<213> Artificial Sequence

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

<400> 142

```
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15


Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
            20                  25                  30


Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45


Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60
```

```
Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110

Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ile Trp
    130                 135                 140

Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp
145                 150                 155                 160

Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp
                165                 170                 175

Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly
            180                 185                 190

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

Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu
    210                 215                 220

His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln
225                 230                 235                 240

Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr
                245                 250                 255

Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu
            260                 265                 270
```

```
Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val
        275                 280                 285

Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn
    290                 295                 300

Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Cys Pro
305                 310                 315                 320

Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His
                325                 330                 335

Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile
            340                 345                 350

Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn
        355                 360                 365

Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr
    370                 375                 380

Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln Gly Lys
385                 390                 395                 400

Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala
                405                 410                 415

Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp
            420                 425                 430

Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser
        435                 440                 445


<210> 143
<211> 340
<212> PRT
<213> Artificial Sequence

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

<400> 143
```

```
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                  10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Glu Glu Ile Asp His
        35                  40                  45

Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro
    50                  55                  60

Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr Ser
65                  70                  75                  80

Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met
                85                  90                  95

Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln
            100                 105                 110

Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg
        115                 120                 125

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

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

Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu
                165                 170                 175

His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser Tyr
            180                 185                 190

Leu Asn Ala Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
        195                 200                 205

Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
    210                 215                 220
```

```
Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
225                 230                 235                 240


Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
                245                 250                 255


Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
            260                 265                 270


Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
        275                 280                 285


Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
    290                 295                 300


Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
305                 310                 315                 320


Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
                325                 330                 335


His Asp Cys Ala
            340
```

<210> 144
<211> 512
<212> PRT
<213> Artificial Sequence

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

<400> 144

```
Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly
1               5                   10                  15


Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
            20                  25                  30


Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
        35                  40                  45
```

```
Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
    50                  55                  60

Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
65                  70                  75                  80

Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                85                  90                  95

Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp
            100                 105                 110

Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
        115                 120                 125

His Asp Cys Ala Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Arg Asn
    130                 135                 140

Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu His His
145                 150                 155                 160

Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys Ala Arg
                165                 170                 175

Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp His Glu
            180                 185                 190

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

Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr Ser Phe
    210                 215                 220

Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met Met
225                 230                 235                 240

Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln Val
                245                 250                 255
```

```
Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg Gln
            260                 265                 270

Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu Met Gln
        275                 280                 285

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

Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu His
305                 310                 315                 320

Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser Tyr Leu
                325                 330                 335

Asn Ala Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ser
            340                 345                 350

Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly
        355                 360                 365

Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys
    370                 375                 380

Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr
385                 390                 395                 400

Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp
                405                 410                 415

Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln
            420                 425                 430

Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly
        435                 440                 445

Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp Cys
    450                 455                 460

Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val His
465                 470                 475                 480
```

```
Asp Cys Ala Gly Gly Ser Gly Gly His His His His His His Gly Gly
                485                 490                 495


Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
            500                 505                 510


<210> 145
<211> 1049
<212> PRT
<213> Artificial Sequence

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

<400> 145
Arg Gly Val Phe Arg Arg Asp Ala His Lys Ser Glu Val Ala His Arg
1               5                   10                  15


Phe Lys Asp Leu Gly Glu Glu Asn Phe Lys Ala Leu Val Leu Ile Ala
            20                  25                  30


Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys Leu
        35                  40                  45


Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu Ser
    50                  55                  60


Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu
65                  70                  75                  80


Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys
                85                  90                  95


Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys
            100                 105                 110


Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp Val
        115                 120                 125


Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr
    130                 135                 140
```

```
Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu
145                 150                 155                 160

Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln
                165                 170                 175

Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg
            180                 185                 190

Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Gly Leu Lys Cys Ala Ser
        195                 200                 205

Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg
    210                 215                 220

Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys Leu
225                 230                 235                 240

Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu
                245                 250                 255

Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu
            260                 265                 270

Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro
        275                 280                 285

Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met
    290                 295                 300

Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Gly Ser Lys Asp
305                 310                 315                 320

Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe
                325                 330                 335

Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu
            340                 345                 350
```

```
Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala
        355                 360                 365

Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys
    370                 375                 380

Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu
385                 390                 395                 400

Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg
                405                 410                 415

Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu Val
            420                 425                 430

Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro Glu
        435                 440                 445

Ala Lys Arg Met Pro Cys Ala Glu Asp Cys Leu Ser Val Phe Leu Asn
    450                 455                 460

Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val Thr
465                 470                 475                 480

Lys Cys Cys Thr Glu Ser Leu Val Asn Gly Arg Pro Cys Phe Ser Ala
                485                 490                 495

Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr
            500                 505                 510

Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln
        515                 520                 525

Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro Lys
    530                 535                 540

Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala Phe
545                 550                 555                 560

Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu
                565                 570                 575
```

```
Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly
            580                 585                 590

Gly Ser Gly Gly Gly Gly Ser Gly Gly Ile Trp Glu Leu Lys Lys Asp
        595                 600                 605

Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met
    610                 615                 620

Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr
625                 630                 635                 640

Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile
                645                 650                 655

Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly
            660                 665                 670

Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp
        675                 680                 685

Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn
    690                 695                 700

Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr
705                 710                 715                 720

Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys
                725                 730                 735

Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala
            740                 745                 750

Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr
        755                 760                 765

Ser Val Glu Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser
    770                 775                 780
```

```
Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu
785                 790                 795                 800

Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro
                805                 810                 815

Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu
            820                 825                 830

Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe
        835                 840                 845

Ser Leu Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys
    850                 855                 860

Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg
865                 870                 875                 880

Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser
                885                 890                 895

Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly
            900                 905                 910

Gly Gly Ser Gly Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys
        915                 920                 925

Asp Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn
    930                 935                 940

Ile His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu
945                 950                 955                 960

Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg
                965                 970                 975

Gly Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn
            980                 985                 990

Ser Ala Thr Val Leu Gln Gln Thr  Tyr His Ala His Arg  Ser Asp Ala
        995                 1000                1005
```

Leu Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp
    1010   1015   1020

Asn Arg Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro
    1025   1030   1035

Leu Val Gln Glu Cys Met Val His Asp Cys Ala
    1040   1045

<210> 146
<211> 273
<212> PRT
<213> Artificial Sequence

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

<400> 146
Gln Asn Gln Trp Leu Gln Asp Met Thr Thr His Leu Ile Leu Arg Ser
1   5   10   15

Phe Lys Glu Phe Leu Gln Ser Ser Leu Arg Ala Leu Arg Gln Met Ser
            20   25   30

Gly Gly Ser Gly Gly Gly Ser Ser Glu Arg Ile Asp Lys Gln Ile Arg
        35   40   45

Tyr Ile Leu Asp Gly Ile Ser Ala Leu Arg Lys Glu Thr Cys Asn Lys
    50   55   60

Ser Asn Met Cys Glu Ser Ser Lys Glu Ala Leu Ala Glu Asn Asn Leu
65   70   75   80

Asn Leu Pro Lys Met Ala Glu Lys Asp Gly Cys Phe Gln Ser Gly Phe
                85   90   95

Asn Glu Glu Thr Cys Leu Val Lys Ile Ile Thr Gly Leu Leu Glu Phe
            100   105   110

Glu Val Tyr Leu Glu Tyr Leu Gln Asn Arg Phe Glu Ser Ser Glu Glu
        115   120   125

```
Gln Ala Arg Ala Val Gln Met Ser Thr Lys Val Leu Ile Gln Phe Leu
    130                 135                 140

Gln Lys Lys Ala Lys Asn Leu Asp Ala Ile Thr Thr Pro Asp Pro Thr
145                 150                 155                 160

Thr Asn Ala Ser Leu Leu Thr Lys Leu Gln Ala Ser Glu Leu Leu Asp
                165                 170                 175

Pro Cys Gly Tyr Ile Ser Pro Glu Ser Pro Val Val Gln Leu His Ser
            180                 185                 190

Asn Phe Thr Ala Val Cys Val Leu Lys Glu Lys Cys Met Asp Tyr Phe
        195                 200                 205

His Val Asn Ala Asn Tyr Ile Val Trp Lys Thr Asn His Phe Thr Ile
    210                 215                 220

Pro Lys Glu Gln Tyr Thr Ile Ile Asn Arg Thr Ala Ser Ser Val Thr
225                 230                 235                 240

Phe Thr Asp Ile Ala Ser Leu Asn Ile Gln Leu Thr Cys Asn Ile Leu
                245                 250                 255

Thr Phe Gly Gln Leu Glu Gln Asn Val Tyr Gly Ile Thr Ile Ile Ser
            260                 265                 270

Gly
```

<210> 147
<211> 415
<212> PRT
<213> Artificial Sequence

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

<400> 147

```
Gln Asn Gln Trp Leu Gln Asp Met Thr Thr His Leu Ile Leu Arg Ser
1               5                   10                  15
```

```
Phe Lys Glu Phe Leu Gln Ser Ser Leu Arg Ala Leu Arg Gln Met Ser
            20                  25                  30

Gly Gly Ser Gly Gly Gly Ser Ser Glu Arg Ile Asp Lys Gln Ile Arg
        35                  40                  45

Tyr Ile Leu Asp Gly Ile Ser Ala Leu Arg Lys Glu Thr Cys Asn Lys
    50                  55                  60

Ser Asn Met Cys Glu Ser Ser Lys Glu Ala Leu Ala Glu Asn Asn Leu
65                  70                  75                  80

Asn Leu Pro Lys Met Ala Glu Lys Asp Gly Cys Phe Gln Ser Gly Phe
                85                  90                  95

Asn Glu Glu Thr Cys Leu Val Lys Ile Ile Thr Gly Leu Leu Glu Phe
            100                 105                 110

Glu Val Tyr Leu Glu Tyr Leu Gln Asn Arg Phe Glu Ser Ser Glu Glu
        115                 120                 125

Gln Ala Arg Ala Val Gln Met Ser Thr Lys Val Leu Ile Gln Phe Leu
    130                 135                 140

Gln Lys Lys Ala Lys Asn Leu Asp Ala Ile Thr Thr Pro Asp Pro Thr
145                 150                 155                 160

Thr Asn Ala Ser Leu Leu Thr Lys Leu Gln Ala Ser Glu Leu Leu Asp
                165                 170                 175

Pro Cys Gly Tyr Ile Ser Pro Glu Ser Pro Val Val Gln Leu His Ser
            180                 185                 190

Asn Phe Thr Ala Val Cys Val Leu Lys Glu Lys Cys Met Asp Tyr Phe
        195                 200                 205

His Val Asn Ala Asn Tyr Ile Val Trp Lys Thr Asn His Phe Thr Ile
    210                 215                 220
```

```
Pro Lys Glu Gln Tyr Thr Ile Ile Asn Arg Thr Ala Ser Ser Val Thr
225                 230                 235                 240

Phe Thr Asp Ile Ala Ser Leu Asn Ile Gln Leu Thr Cys Asn Ile Leu
                245                 250                 255

Thr Phe Gly Gln Leu Glu Gln Asn Val Tyr Gly Ile Thr Ile Ile Ser
            260                 265                 270

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Ser Asn Glu Leu His
        275                 280                 285

Gln Val Pro Ser Asn Cys Asp Cys Leu Asn Gly Gly Thr Cys Val Ser
    290                 295                 300

Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn Cys Pro Lys Lys Phe
305                 310                 315                 320

Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys Thr Cys Tyr Glu Gly
                325                 330                 335

Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr Asp Thr Met Gly Arg
            340                 345                 350

Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu Gln Gln Thr Tyr His
        355                 360                 365

Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu Gly Lys His Asn Tyr
    370                 375                 380

Cys Arg Asn Pro Asp Asn Arg Arg Arg Pro Trp Cys Tyr Val Gln Val
385                 390                 395                 400

Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val His Asp Cys Ala
                405                 410                 415
```

<210> 148
<211> 25
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
peptide

<220>
<221> SITE
<222> (1)..(25)
<223> This sequence may encompass 1-5 "Gly Gly Gly Gly Ser"
repeating units

<400> 148
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser
20 25

<210> 149
<211> 15
<212> PRT
<213> Artificial Sequence

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

<400> 149
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 150
<211> 28
<212> PRT
<213> Artificial Sequence

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

<400> 150
Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly
1 5 10 15

Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly
20 25

<210> 151
<211> 4
<212> PRT

<213> Artificial Sequence

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

<400> 151
Gly Gly Gly Ser
1

<210> 152
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 152
Gly Gly Gly Gly Ser
1 5

<210> 153
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 153
Ser Gly Gly Ser Gly Gly Gly
1 5

<210> 154
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 154
Gly Gly Ser Gly Gly Ser Gly
1 5

<210> 155

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

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

<400> 155
Gly Gly Gly Gly Ser
1 5

<210> 156
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 156
Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
1 5 10

<210> 157
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 157
Pro Arg Tyr Gln His Ile Gly Leu Val Ala Met Phe Arg Gln Asn Thr
1 5 10 15

Gly

<210> 158
<211> 17
<212> PRT
<213> Artificial Sequence

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

<400> 158
Ala Glu Ser Thr Tyr His His Leu Ser Leu Gly Tyr Met Tyr Thr Leu
1   5   10   15

Asn

<210> 159
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 159
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1   5   10   15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20   25   30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
        35   40   45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50   55   60

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

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85   90   95

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

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115   120   125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130   135   140

```
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210> 160
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 160
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1               5                   10                  15


Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30


His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
        35                  40                  45


Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60


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


Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95
```

```
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110


Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125


Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140


Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160


Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175


Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190


Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205


Phe Asn Arg Gly Glu Cys
    210


<210> 161
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 161
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1               5                   10                  15


Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20                  25                  30


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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100                 105                 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115                 120                 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130                 135                 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145                 150                 155                 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 162
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 162
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1   5   10   15

Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
            20   25   30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85   90   95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
            100   105   110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115   120   125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130   135   140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145   150   155   160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165   170   175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180   185   190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195   200   205

Phe Asn Arg Gly Glu Cys

210

<210> 163
<211> 214
<212> PRT
<213> Artificial Sequence

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

<400> 163
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser

```
                165                 170                 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180                 185                 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205

Phe Asn Arg Gly Glu Cys
    210
```

<210> 164
<211> 215
<212> PRT
<213> Artificial Sequence

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

<400> 164

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

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
            20                  25                  30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
        35                  40                  45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65                  70                  75                  80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Arg Thr Val Ala
            100                 105                 110

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
```

```
        115                 120                 125

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
    130                 135                 140

Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
145                 150                 155                 160

Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
                165                 170                 175

Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
            180                 185                 190

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
        195                 200                 205

Ser Phe Asn Arg Gly Glu Cys
    210                 215


<210> 165
<211> 981
<212> PRT
<213> Artificial Sequence

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

<400> 165
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
```

```
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285
```

```
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
    450                 455                 460

Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu
465                 470                 475                 480

Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys
                485                 490                 495

Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser
```

```
            500                 505                 510

Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe
        515                 520                 525

Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser
    530                 535                 540

His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr
545                 550                 555                 560

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

Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr
            580                 585                 590

Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser
        595                 600                 605

Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu
    610                 615                 620

Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln
625                 630                 635                 640

Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val
                645                 650                 655

Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser
            660                 665                 670

Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln
        675                 680                 685

Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr
    690                 695                 700

Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys
705                 710                 715                 720
```

```
Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe
                725                 730                 735

Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile
            740                 745                 750

Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp
        755                 760                 765

Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
    770                 775                 780

Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
785                 790                 795                 800

His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
                805                 810                 815

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
            820                 825                 830

His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
        835                 840                 845

Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr
    850                 855                 860

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
865                 870                 875                 880

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
                885                 890                 895

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
            900                 905                 910

Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu
        915                 920                 925

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

930 935 940

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
945 950 955 960

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
965 970 975

Tyr Leu Asn Ala Ser
980

<210> 166
<211> 773
<212> PRT
<213> Artificial Sequence

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

<400> 166
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro

```
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr
225                 230                 235                 240

Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val
                245                 250                 255

Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp
            260                 265                 270

Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val
        275                 280                 285

Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu
    290                 295                 300

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

Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr
                325                 330                 335
```

```
Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp
            340                 345                 350

Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser
        355                 360                 365

Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu
    370                 375                 380

Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val
385                 390                 395                 400

Glu Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro
                405                 410                 415

Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr
            420                 425                 430

Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
        435                 440                 445

Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser
    450                 455                 460

Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
465                 470                 475                 480

Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp
                485                 490                 495

Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn
            500                 505                 510

Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp
        515                 520                 525

Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly Gly
    530                 535                 540

Ser Gly Gly Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe
```

```
545                 550                 555                 560

Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met
                565                 570                 575

Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu
            580                 585                 590

Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu
        595                 600                 605

Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser
    610                 615                 620

Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys
625                 630                 635                 640

Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu
                645                 650                 655

Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met
            660                 665                 670

Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile
        675                 680                 685

Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln
    690                 695                 700

Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu
705                 710                 715                 720

Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg
                725                 730                 735

Val Met Ser Tyr Leu Asn Ala Ser Gly Gly Ser Gly Gly His His His
            740                 745                 750

His His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
        755                 760                 765
```

Ile Glu Trp His Glu
770

<210> 167
<211> 971
<212> PRT
<213> Artificial Sequence

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

<400> 167
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

```
Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
```

```
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
    450                 455                 460

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
465                 470                 475                 480

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
                485                 490                 495

Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr
            500                 505                 510

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
        515                 520                 525

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
    530                 535                 540

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
545                 550                 555                 560

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
                565                 570                 575

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
            580                 585                 590
```

```
Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala
        595                 600                 605

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
    610                 615                 620

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu
625                 630                 635                 640

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
                645                 650                 655

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
            660                 665                 670

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
        675                 680                 685

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
    690                 695                 700

Phe Ser Leu Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu
705                 710                 715                 720

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

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
            740                 745                 750

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
        755                 760                 765

Gly Gly Gly Ser Gly Gly Arg Asn Leu Pro Val Ala Thr Pro Asp Pro
    770                 775                 780

Gly Met Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val
785                 790                 795                 800

Ser Asn Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys
```

805 810 815

Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser
820 825 830

Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys
835 840 845

Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala
850 855 860

Ser Arg Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr
865 870 875 880

Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys
885 890 895

Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu
900 905 910

Ala Val Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr
915 920 925

Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys
930 935 940

Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr
945 950 955 960

Ile Asp Arg Val Met Ser Tyr Leu Asn Ala Ser
965 970

<210> 168
<211> 773
<212> PRT
<213> Artificial Sequence

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

<400> 168
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

```
1               5                   10                  15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220
```

```
Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr
225                 230                 235                 240

Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val
                245                 250                 255

Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp
            260                 265                 270

Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val
        275                 280                 285

Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu
    290                 295                 300

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

Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr
                325                 330                 335

Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp
            340                 345                 350

Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser
        355                 360                 365

Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu
    370                 375                 380

Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val
385                 390                 395                 400

Glu Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro
                405                 410                 415

Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr
            420                 425                 430

Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
```

```
        435                 440                 445

Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser
    450                 455                 460

Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
465                 470                 475                 480

Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp
                485                 490                 495

Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn
            500                 505                 510

Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp
        515                 520                 525

Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly Gly
    530                 535                 540

Ser Gly Gly Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe
545                 550                 555                 560

Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met
                565                 570                 575

Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu
            580                 585                 590

Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu
        595                 600                 605

Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser
    610                 615                 620

Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys
625                 630                 635                 640

Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu
                645                 650                 655
```

```
Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met
            660                 665                 670

Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile
        675                 680                 685

Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln
    690                 695                 700

Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu
705                 710                 715                 720

Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg
                725                 730                 735

Val Met Ser Tyr Leu Asn Ala Ser Gly Gly Ser Gly Gly His His His
            740                 745                 750

His His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
        755                 760                 765

Ile Glu Trp His Glu
    770
```

<210> 169
<211> 764
<212> PRT
<213> Artificial Sequence

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

<400> 169

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

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
```

```
Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
```

```
            260                 265                 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
    450                 455                 460

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
465                 470                 475                 480
```

```
Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
                485                 490                 495

Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr
            500                 505                 510

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
        515                 520                 525

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
    530                 535                 540

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
545                 550                 555                 560

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
                565                 570                 575

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
            580                 585                 590

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
    610                 615                 620

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
625                 630                 635                 640

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
                645                 650                 655

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
            660                 665                 670

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
        675                 680                 685

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
```

690 695 700

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
705 710 715 720

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

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
740 745 750

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser
755 760

<210> 170
<211> 564
<212> PRT
<213> Artificial Sequence

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

<400> 170
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr

```
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr
225                 230                 235                 240

Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val
                245                 250                 255

Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp
            260                 265                 270

Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val
        275                 280                 285

Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu
    290                 295                 300

Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile
305                 310                 315                 320
```

```
Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr
                325                 330                 335

Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp
            340                 345                 350

Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser
        355                 360                 365

Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu
    370                 375                 380

Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val
385                 390                 395                 400

Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro
                405                 410                 415

Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr
            420                 425                 430

Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
        435                 440                 445

Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser
    450                 455                 460

Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
465                 470                 475                 480

Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp
                485                 490                 495

Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn
            500                 505                 510

Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp
        515                 520                 525

Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Leu Asn Asp
```

530 535 540

Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His
545 550 555 560

His His His His

<210> 171
<211> 583
<212> PRT
<213> Artificial Sequence

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

<400> 171
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

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

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu

```
    130                 135                 140

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
                245                 250                 255

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
            260                 265                 270

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
        275                 280                 285

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

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
305                 310                 315                 320

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
                325                 330                 335

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
            340                 345                 350
```

```
Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
        355                 360                 365

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
    370                 375                 380

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
                405                 410                 415

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
            420                 425                 430

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
        435                 440                 445

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
    450                 455                 460

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
465                 470                 475                 480

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
                485                 490                 495

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
            500                 505                 510

Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys
        515                 520                 525

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
    530                 535                 540

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
545                 550                 555                 560

Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly
```

565 570 575

Ser His His His His His His
580

<210> 172
<211> 583
<212> PRT
<213> Artificial Sequence

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

<400> 172
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

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

Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys
130 135 140

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys

```
145                 150                 155                 160

Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175

Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Val Thr Ile
            180                 185                 190

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220

Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
                245                 250                 255

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
            260                 265                 270

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
        275                 280                 285

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

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
305                 310                 315                 320

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
                325                 330                 335

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
            340                 345                 350

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
        355                 360                 365
```

```
Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
    370                 375                 380

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
                405                 410                 415

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
            420                 425                 430

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
        435                 440                 445

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
    450                 455                 460

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
465                 470                 475                 480

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
                485                 490                 495

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
            500                 505                 510

Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys
        515                 520                 525

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
    530                 535                 540

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
545                 550                 555                 560

Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly
                565                 570                 575

Ser His His His His His His
```

580

<210> 173
<211> 463
<212> PRT
<213> Artificial Sequence

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

<400> 173
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

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

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln

```
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr His
225                 230                 235                 240

Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val
                245                 250                 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
            260                 265                 270

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
        275                 280                 285

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
    290                 295                 300

Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
305                 310                 315                 320

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                 330                 335

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

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

Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu
    370                 375                 380
```

```
Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                 390                 395                 400


Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
                405                 410                 415


Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
            420                 425                 430


Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
        435                 440                 445


His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455                 460


<210> 174
<211> 482
<212> PRT
<213> Artificial Sequence

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

<400> 174
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1               5                   10                  15


Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30


Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45


Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60


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


Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
```

```
Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

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

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
    130                 135                 140

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp
                245                 250                 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly
            260                 265                 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        275                 280                 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    290                 295                 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
```

305 310 315 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
325 330 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
340 345 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro Ile Glu
355 360 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys
370 375 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
385 390 395 400

Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
405 410 415

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
435 440 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465 470 475 480

Gly Lys

<210> 175
<211> 482
<212> PRT
<213> Artificial Sequence

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

polypeptide

<400> 175

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

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
        35                  40                  45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

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

Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys
    130                 135                 140

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145                 150                 155                 160

Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175

Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Val Thr Ile
            180                 185                 190

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205
```

```
Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220

Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp
                245                 250                 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly
            260                 265                 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        275                 280                 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    290                 295                 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
305                 310                 315                 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
                325                 330                 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
            340                 345                 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro Ile Glu
        355                 360                 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys
    370                 375                 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
385                 390                 395                 400

Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
                405                 410                 415

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
```

420 425 430

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
435 440 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465 470 475 480

Gly Lys

<210> 176
<211> 742
<212> PRT
<213> Artificial Sequence

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

<400> 176
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr

```
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
        195                 200                 205

Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr
    210                 215                 220

Val Lys Ile Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr
225                 230                 235                 240

Ile Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly
                245                 250                 255

Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln
            260                 265                 270

Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu
        275                 280                 285

Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr
    290                 295                 300

Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu
305                 310                 315                 320
```

```
Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
                325                 330                 335

Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
            340                 345                 350

Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser
        355                 360                 365

Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg
    370                 375                 380

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

Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser
                405                 410                 415

Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser
            420                 425                 430

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Glu Val Gln Leu Val
465                 470                 475                 480

Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr Val Lys Ile Ser
                485                 490                 495

Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val
            500                 505                 510

Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro
        515                 520                 525

Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Val Thr
```

```
    530                 535                 540

Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser
545                 550                 555                 560

Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr
                565                 570                 575

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        595                 600                 605

Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
    610                 615                 620

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
625                 630                 635                 640

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
                645                 650                 655

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
            660                 665                 670

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu
        675                 680                 685

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
    690                 695                 700

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Ser Gly Leu
705                 710                 715                 720

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser
                725                 730                 735

His His His His His His
            740
```

<210> 177
<211> 742
<212> PRT
<213> Artificial Sequence

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

<400> 177
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145 150 155 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
165 170 175

```
Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

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

Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met His
225                 230                 235                 240

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

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

Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp
        275                 280                 285

Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr Thr
    290                 295                 300

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Val Gln Ser
                325                 330                 335

Gly Ala Glu Val Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys Thr
            340                 345                 350

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

Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu Asn
    370                 375                 380

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

```
385                 390                 395                 400

Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg
                405                 410                 415

Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val Gly
            420                 425                 430

Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
        435                 440                 445

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

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

Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly Glu Arg Val Thr Met
                485                 490                 495

Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met His Trp Tyr Gln Gln
            500                 505                 510

Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu
        515                 520                 525

Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
    530                 535                 540

Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr
545                 550                 555                 560

Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly
                565                 570                 575

Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
            580                 585                 590

Gly Gly Gly Gly Ser Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val
        595                 600                 605
```

```
Lys Lys Pro Gly Ala Thr Val Lys Ile Ser Cys Thr Ala Ser Gly Phe
    610                 615                 620

Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Lys
625                 630                 635                 640

Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu
                645                 650                 655

Tyr Ala Ser Lys Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser
            660                 665                 670

Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
        675                 680                 685

Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr
    690                 695                 700

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Ser Gly Leu
705                 710                 715                 720

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser
                725                 730                 735

His His His His His His
            740
```

<210> 178
<211> 764
<212> PRT
<213> Artificial Sequence

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

<400> 178

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

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30
```

```
Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
```

```
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350

Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
    450                 455                 460
```

```
Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
465                 470                 475                 480

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
                485                 490                 495

Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr
            500                 505                 510

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
        515                 520                 525

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
    530                 535                 540

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
545                 550                 555                 560

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
                565                 570                 575

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
            580                 585                 590

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
    610                 615                 620

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
625                 630                 635                 640

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
                645                 650                 655

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
            660                 665                 670

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
```

675 680 685

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
690 695 700

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
705 710 715 720

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

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
740 745 750

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser
755 760

<210> 179
<211> 537
<212> PRT
<213> Artificial Sequence

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

<400> 179
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys

```
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr
225                 230                 235                 240

Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val
                245                 250                 255

Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp
            260                 265                 270

Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val
        275                 280                 285

Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu
    290                 295                 300
```

```
Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile
305                 310                 315                 320

Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr
                325                 330                 335

Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp
            340                 345                 350

Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser
        355                 360                 365

Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu
    370                 375                 380

Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val
385                 390                 395                 400

Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro
                405                 410                 415

Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr
            420                 425                 430

Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
        435                 440                 445

Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser
    450                 455                 460

Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
465                 470                 475                 480

Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp
                485                 490                 495

Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn
            500                 505                 510

Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp
```

515 520 525

Ser Glu Trp Ala Ser Val Pro Cys Ser
530 535

<210> 180
<211> 583
<212> PRT
<213> Artificial Sequence

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

<400> 180
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

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

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

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser

```
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Ile Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
                245                 250                 255

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
            260                 265                 270

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
        275                 280                 285

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

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
305                 310                 315                 320

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
                325                 330                 335

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
            340                 345                 350

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
        355                 360                 365
```

```
Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
    370                 375                 380

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
                405                 410                 415

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
            420                 425                 430

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
        435                 440                 445

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
    450                 455                 460

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
465                 470                 475                 480

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
                485                 490                 495

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
            500                 505                 510

Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys
        515                 520                 525

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
    530                 535                 540

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
545                 550                 555                 560

Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly
                565                 570                 575

Ser His His His His His His
```

580

<210> 181
<211> 583
<212> PRT
<213> Artificial Sequence

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

<400> 181
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

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

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

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145 150 155 160

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu

```
                165                 170                 175

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

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220

Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
                245                 250                 255

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
            260                 265                 270

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
        275                 280                 285

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

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
305                 310                 315                 320

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
                325                 330                 335

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
            340                 345                 350

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
        355                 360                 365

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
    370                 375                 380
```

```
Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala
385                 390                 395                 400

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
                405                 410                 415

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
            420                 425                 430

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
        435                 440                 445

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
    450                 455                 460

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
465                 470                 475                 480

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
                485                 490                 495

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
            500                 505                 510

Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys
        515                 520                 525

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
    530                 535                 540

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
545                 550                 555                 560

Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly
                565                 570                 575

Ser His His His His His His
            580
```

<210> 182

<211> 463
<212> PRT
<213> Artificial Sequence

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

<400> 182
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
115 120 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
130 135 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145 150 155 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
165 170 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser

```
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr His
225                 230                 235                 240

Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val
                245                 250                 255

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr
            260                 265                 270

Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu
        275                 280                 285

Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys
    290                 295                 300

Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser
305                 310                 315                 320

Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys
                325                 330                 335

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

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

Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu
    370                 375                 380

Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn
385                 390                 395                 400
```

Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser
405 410 415

Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg
420 425 430

Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu
435 440 445

His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
450 455 460

<210> 183
<211> 482
<212> PRT
<213> Artificial Sequence

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

<400> 183
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

```
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Gln Gln
        115                 120                 125

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

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145                 150                 155                 160

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175

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

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220

Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp
                245                 250                 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly
            260                 265                 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        275                 280                 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    290                 295                 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
305                 310                 315                 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
```

```
                325                 330                 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
            340                 345                 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro Ile Glu
        355                 360                 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys
    370                 375                 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
385                 390                 395                 400

Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
                405                 410                 415

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
        435                 440                 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
    450                 455                 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465                 470                 475                 480

Gly Lys
```

<210> 184
<211> 742
<212> PRT
<213> Artificial Sequence

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

<400> 184
```
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
```

```
1               5                   10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
        195                 200                 205

Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu
    210                 215                 220
```

```
Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met His
225                 230                 235                 240

Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr Asp
                245                 250                 255

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

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp
        275                 280                 285

Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr Thr
    290                 295                 300

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Gln Gln Ser
                325                 330                 335

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

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

Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu Asn
    370                 375                 380

Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr Ile Thr
385                 390                 395                 400

Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg
                405                 410                 415

Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val Gly
            420                 425                 430

Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
```

```
        435                 440                 445

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

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

Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu
                485                 490                 495

Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met His Trp Tyr Gln Gln
            500                 505                 510

Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr Asp Thr Ser Lys Leu
        515                 520                 525

Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
    530                 535                 540

Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr
545                 550                 555                 560

Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly
                565                 570                 575

Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
            580                 585                 590

Gly Gly Gly Gly Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val
        595                 600                 605

Lys Lys Pro Gly Ala Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe
    610                 615                 620

Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln
625                 630                 635                 640

Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu
                645                 650                 655
```

```
Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser
            660                 665                 670

Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
        675                 680                 685

Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr
    690                 695                 700

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Ser Gly Leu
705                 710                 715                 720

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser
                725                 730                 735

His His His His His His
            740
```

<210> 185
<211> 583
<212> PRT
<213> Artificial Sequence

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

<400> 185

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

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80
```

```
Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

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

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
    130                 135                 140

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
                245                 250                 255

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
            260                 265                 270

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
        275                 280                 285

Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr
```

```
    290                 295                 300

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
305                 310                 315                 320

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
                325                 330                 335

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
            340                 345                 350

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
        355                 360                 365

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
    370                 375                 380

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
                405                 410                 415

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
            420                 425                 430

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
        435                 440                 445

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
    450                 455                 460

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
465                 470                 475                 480

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
                485                 490                 495

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
            500                 505                 510
```

Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys
515 520 525

Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
530 535 540

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
545 550 555 560

Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly
565 570 575

Ser His His His His His His
580

<210> 186
<211> 583
<212> PRT
<213> Artificial Sequence

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

<400> 186
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
50 55 60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
85 90 95

```
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

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

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

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145                 150                 155                 160

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175

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

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220

Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys
                245                 250                 255

Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu
            260                 265                 270

Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp
        275                 280                 285

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

Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys
```

```
305                 310                 315                 320

Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu
                325                 330                 335

Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys
            340                 345                 350

Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe
        355                 360                 365

Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val
    370                 375                 380

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

Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu
                405                 410                 415

Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu
            420                 425                 430

Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr
        435                 440                 445

Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp
    450                 455                 460

Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val
465                 470                 475                 480

Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr
                485                 490                 495

Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu
            500                 505                 510

Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys
        515                 520                 525
```

```
Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser
    530                 535                 540

Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly
545                 550                 555                 560

Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly
                565                 570                 575

Ser His His His His His His
            580
```

<210> 187
<211> 482
<212> PRT
<213> Artificial Sequence

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

<400> 187

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

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110
```

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

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
    130                 135                 140

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp
                245                 250                 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly
            260                 265                 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        275                 280                 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    290                 295                 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
305                 310                 315                 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
```

```
                325                 330                 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
            340                 345                 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro Ile Glu
        355                 360                 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys
    370                 375                 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
385                 390                 395                 400

Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
                405                 410                 415

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
        435                 440                 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
    450                 455                 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465                 470                 475                 480

Gly Lys
```

<210> 188
<211> 482
<212> PRT
<213> Artificial Sequence

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

<400> 188
```
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
```

```
1               5                   10                  15

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
            20                  25                  30

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
        35                  40                  45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
    50                  55                  60

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

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
                85                  90                  95

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

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

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

Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys
145                 150                 155                 160

Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu
                165                 170                 175

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

Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu
        195                 200                 205

Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val
    210                 215                 220
```

```
Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp
                245                 250                 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly
            260                 265                 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        275                 280                 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    290                 295                 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
305                 310                 315                 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
                325                 330                 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
            340                 345                 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro Ile Glu
        355                 360                 365

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys
    370                 375                 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
385                 390                 395                 400

Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
                405                 410                 415

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
```

435 440 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465 470 475 480

Gly Lys

<210> 189
<211> 715
<212> PRT
<213> Artificial Sequence

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

<400> 189
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys

```
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
        195                 200                 205

Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr
    210                 215                 220

Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr
225                 230                 235                 240

Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly
                245                 250                 255

Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln
            260                 265                 270

Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu
        275                 280                 285

Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr
    290                 295                 300

Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu
305                 310                 315                 320

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
                325                 330                 335
```

```
Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
            340                 345                 350

Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser
        355                 360                 365

Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg
    370                 375                 380

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

Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser
                405                 410                 415

Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser
            420                 425                 430

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Glu Val Gln Leu Gln
465                 470                 475                 480

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

Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val
            500                 505                 510

Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro
        515                 520                 525

Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr
    530                 535                 540

Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser
```

545 550 555 560

Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr
565 570 575

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
595 600 605

Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
610 615 620

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
625 630 635 640

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
645 650 655

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
660 665 670

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu
675 680 685

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
690 695 700

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
705 710 715

<210> 190
<211> 742
<212> PRT
<213> Artificial Sequence

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

<400> 190
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu

```
1               5                   10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly Glu
    210                 215                 220
```

```
Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met His
225                 230                 235                 240

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

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

Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp
        275                 280                 285

Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr Thr
    290                 295                 300

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Val Gln Leu Gln Gln Ser
                325                 330                 335

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

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

Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu Asn
    370                 375                 380

Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr Ile Thr
385                 390                 395                 400

Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg
                405                 410                 415

Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val Gly
            420                 425                 430

Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly
```

```
        435                 440                 445

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

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

Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly Glu Arg Val Thr Met
                485                 490                 495

Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met His Trp Tyr Gln Gln
            500                 505                 510

Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr Asp Thr Ser Lys Leu
        515                 520                 525

Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
    530                 535                 540

Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr
545                 550                 555                 560

Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly
                565                 570                 575

Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
            580                 585                 590

Gly Gly Gly Gly Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val
        595                 600                 605

Lys Lys Pro Gly Ala Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe
    610                 615                 620

Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln
625                 630                 635                 640

Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu
                645                 650                 655
```

```
Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser
            660                 665                 670

Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr
        675                 680                 685

Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr
    690                 695                 700

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Ser Gly Leu
705                 710                 715                 720

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser
                725                 730                 735

His His His His His His
            740
```

<210> 191
<211> 742
<212> PRT
<213> Artificial Sequence

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

<400> 191

```
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                   10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80
```

```
Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
        195                 200                 205

Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr
    210                 215                 220

Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr
225                 230                 235                 240

Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly
                245                 250                 255

Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln
            260                 265                 270

Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu
        275                 280                 285

Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr
```

```
    290                 295                 300

Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu
305                 310                 315                 320

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
                325                 330                 335

Gly Gly Gly Ser Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
            340                 345                 350

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser
        355                 360                 365

Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg
    370                 375                 380

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

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser
                405                 410                 415

Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser
            420                 425                 430

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Glu Val Gln Leu Gln
465                 470                 475                 480

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

Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val
            500                 505                 510
```

```
Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro
        515                 520                 525

Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr
    530                 535                 540

Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser
545                 550                 555                 560

Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr
                565                 570                 575

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        595                 600                 605

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
    610                 615                 620

Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
625                 630                 635                 640

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Ile Tyr
                645                 650                 655

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
            660                 665                 670

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu
        675                 680                 685

Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
    690                 695                 700

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Ser Gly Leu
705                 710                 715                 720

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser
```

725 730 735

His His His His His His
740

<210> 192
<211> 482
<212> PRT
<213> Artificial Sequence

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

<400> 192
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
50 55 60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65 70 75 80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
100 105 110

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

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

Ser Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Ser Ala Ser Ser

```
145                 150                 155                 160

Ser Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro
                165                 170                 175

Arg Arg Trp Ile Tyr Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala
            180                 185                 190

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
        195                 200                 205

Ser Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Trp Ser
    210                 215                 220

Ser Asn Pro Pro Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
225                 230                 235                 240

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp
                245                 250                 255

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly
            260                 265                 270

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        275                 280                 285

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    290                 295                 300

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
305                 310                 315                 320

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
                325                 330                 335

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
            340                 345                 350

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro Ile Glu
        355                 360                 365
```

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys
370 375 380

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
385 390 395 400

Trp Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
405 410 415

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

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
435 440 445

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
450 455 460

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
465 470 475 480

Gly Lys

<210> 193
<211> 760
<212> PRT
<213> Artificial Sequence

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

<400> 193
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

```
Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro
    210                 215                 220

Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
```

```
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
    290                 295                 300

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
                325                 330                 335

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

Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
385                 390                 395                 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
            420                 425                 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly
        435                 440                 445

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

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
465                 470                 475                 480
```

```
Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
                485                 490                 495

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
            500                 505                 510

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
        515                 520                 525

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
    530                 535                 540

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
545                 550                 555                 560

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
                565                 570                 575

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
            580                 585                 590

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
        595                 600                 605

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
    610                 615                 620

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
625                 630                 635                 640

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
                645                 650                 655

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
            660                 665                 670

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
        675                 680                 685

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
```

690 695 700

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
705 710 715 720

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

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
740 745 750

Glu Trp Ala Ser Val Pro Cys Ser
755 760

<210> 194
<211> 533
<212> PRT
<213> Artificial Sequence

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

<400> 194
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val

```
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly Gly Ser Gly Gly
    210                 215                 220

Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu
225                 230                 235                 240

Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp
                245                 250                 255

Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu
            260                 265                 270

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

Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His
    290                 295                 300

Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp
305                 310                 315                 320
```

```
Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys
                325                 330                 335

Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr
            340                 345                 350

Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser
        355                 360                 365

Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg
    370                 375                 380

Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu
385                 390                 395                 400

Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met
                405                 410                 415

Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe
            420                 425                 430

Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu
        435                 440                 445

Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro
    450                 455                 460

Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Ser Val
465                 470                 475                 480

Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr
                485                 490                 495

Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser
            500                 505                 510

Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala
        515                 520                 525

Ser Val Pro Cys Ser
```

530

<210> 195
<211> 459
<212> PRT
<213> Artificial Sequence

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

<400> 195
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
115 120 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
130 135 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145 150 155 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu

```
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly Gly Ser Gly Gly
    210                 215                 220

Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro
225                 230                 235                 240

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

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

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
        275                 280                 285

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
    290                 295                 300

Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
305                 310                 315                 320

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
                325                 330                 335

Asn Lys Ala Leu Gly Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys
            340                 345                 350

Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro Ser Arg Glu
        355                 360                 365

Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe
    370                 375                 380
```

```
Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
385                 390                 395                 400


Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
                405                 410                 415


Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
            420                 425                 430


Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
        435                 440                 445


Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455


<210> 196
<211> 579
<212> PRT
<213> Artificial Sequence

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

<400> 196
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15


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


Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45


Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60


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


Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys
                85                  90                  95
```

```
Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
        115                 120                 125

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
    130                 135                 140

Gly Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145                 150                 155                 160

Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190

Gly Ser Gly Ser Gly Thr Gln Tyr Thr Leu Lys Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
                245                 250                 255

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
            260                 265                 270

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
        275                 280                 285

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

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
```

```
305                 310                 315                 320

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
                325                 330                 335

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
            340                 345                 350

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
        355                 360                 365

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
    370                 375                 380

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

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
                405                 410                 415

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
            420                 425                 430

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
        435                 440                 445

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
    450                 455                 460

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
465                 470                 475                 480

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
                485                 490                 495

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
            500                 505                 510

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
        515                 520                 525
```

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
530 535 540

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

Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His
565 570 575

His His His

<210> 197
<211> 579
<212> PRT
<213> Artificial Sequence

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

<400> 197
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

```
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
                245                 250                 255

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
            260                 265                 270

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
        275                 280                 285

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

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
305                 310                 315                 320

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
```

```
                325                 330                 335

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
            340                 345                 350

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
        355                 360                 365

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
    370                 375                 380

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

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
                405                 410                 415

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
            420                 425                 430

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
        435                 440                 445

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
    450                 455                 460

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
465                 470                 475                 480

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
                485                 490                 495

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
            500                 505                 510

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
        515                 520                 525

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
    530                 535                 540
```

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

Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His
565 570 575

His His His

<210> 198
<211> 478
<212> PRT
<213> Artificial Sequence

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

<400> 198
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

```
Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
    130                 135                 140

Gly Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145                 150                 155                 160

Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190

Gly Ser Gly Ser Gly Thr Gln Tyr Thr Leu Lys Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
225                 230                 235                 240

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

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
```

340 345 350

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

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

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 199
<211> 478
<212> PRT
<213> Artificial Sequence

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

<400> 199
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val

```
        35                  40                  45

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr His Thr
                245                 250                 255
```

```
Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

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

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

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
```

465 470 475

<210> 200
<211> 734
<212> PRT
<213> Artificial Sequence

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

<400> 200
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145 150 155 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu

```
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser
    210                 215                 220

Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly
225                 230                 235                 240

Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly
                245                 250                 255

Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys
            260                 265                 270

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

Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala
    290                 295                 300

His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser
305                 310                 315                 320

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
                325                 330                 335

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
            340                 345                 350

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
        355                 360                 365

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val
    370                 375                 380
```

```
Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
385                 390                 395                 400

Ser Gly Ser Gly Thr Gln Tyr Thr Leu Lys Ile Ser Ser Leu Gln Pro
                405                 410                 415

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
            420                 425                 430

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Ser Gly Gly
        435                 440                 445

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Gln Ile Gln Leu Val Gln Ser Gly Ser
465                 470                 475                 480

Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser
                485                 490                 495

Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln Ser Pro
            500                 505                 510

Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr Gly Glu
        515                 520                 525

Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser Leu Asp
    530                 535                 540

Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu
545                 550                 555                 560

Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly
                565                 570                 575

Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
            580                 585                 590

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro
```

595 600 605

Ser Ser Leu Ser Ala Ser Val Gly Asp Thr Val Thr Ile Thr Cys Arg
610 615 620

Thr Ser Glu Asn Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Pro
625 630 635 640

Gly Lys Ser Pro Gln Leu Leu Val Tyr Ala Ala Thr Asn Leu Ala Asp
645 650 655

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Tyr Thr
660 665 670

Leu Lys Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
675 680 685

Gln His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val
690 695 700

Glu Ile Lys Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
705 710 715 720

Ile Glu Trp His Glu Gly Gly Ser His His His His His His
725 730

<210> 201
<211> 734
<212> PRT
<213> Artificial Sequence

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

<400> 201
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp

```
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
        195                 200                 205

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

Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn Leu
225                 230                 235                 240

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val Tyr
                245                 250                 255
```

```
Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly Ser
            260                 265                 270

Gly Ser Gly Thr Gln Tyr Thr Leu Lys Ile Ser Ser Leu Gln Pro Glu
        275                 280                 285

Asp Phe Ala Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp Thr
    290                 295                 300

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln Ser
                325                 330                 335

Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys
            340                 345                 350

Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln
        355                 360                 365

Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr
    370                 375                 380

Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser
385                 390                 395                 400

Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys
                405                 410                 415

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr
            420                 425                 430

Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Ser Gly Gly
        435                 440                 445

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Asp Ile Gln Met Thr Gln Ser Pro Ser
```

```
465                 470                 475                 480

Ser Leu Ser Ala Ser Val Gly Asp Thr Val Thr Ile Thr Cys Arg Thr
                485                 490                 495

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

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

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Gln Tyr Thr Leu
    530                 535                 540

Lys Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln
545                 550                 555                 560

His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val Glu
                565                 570                 575

Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            580                 585                 590

Ser Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly
        595                 600                 605

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp
    610                 615                 620

Tyr Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp
625                 630                 635                 640

Met Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp
                645                 650                 655

Phe Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala
            660                 665                 670

Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe
        675                 680                 685
```

Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr
690 695 700

Val Ser Ser Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
705 710 715 720

Ile Glu Trp His Glu Gly Gly Ser His His His His His His
725 730

<210> 202
<211> 579
<212> PRT
<213> Artificial Sequence

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

<400> 202
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

```
Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
    130                 135                 140

Gly Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145                 150                 155                 160

Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
                245                 250                 255

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
            260                 265                 270

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
        275                 280                 285

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

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
305                 310                 315                 320

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
                325                 330                 335

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
```

```
            340                 345                 350

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
        355                 360                 365

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
    370                 375                 380

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

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
                405                 410                 415

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
            420                 425                 430

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
        435                 440                 445

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
    450                 455                 460

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
465                 470                 475                 480

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
                485                 490                 495

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
            500                 505                 510

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
        515                 520                 525

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
    530                 535                 540

Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Leu Asn Asp Ile
545                 550                 555                 560
```

Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His
565 570 575

His His His

<210> 203
<211> 579
<212> PRT
<213> Artificial Sequence

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

<400> 203
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
115 120 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
130 135 140

```
Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
                245                 250                 255

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
            260                 265                 270

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
        275                 280                 285

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

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
305                 310                 315                 320

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
                325                 330                 335

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
            340                 345                 350

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
```

```
        355                 360                 365

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
    370                 375                 380

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

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
                405                 410                 415

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
            420                 425                 430

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
        435                 440                 445

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
    450                 455                 460

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
465                 470                 475                 480

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
                485                 490                 495

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
            500                 505                 510

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
        515                 520                 525

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
    530                 535                 540

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

Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His
                565                 570                 575
```

His His His

<210> 204
<211> 478
<212> PRT
<213> Artificial Sequence

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

<400> 204
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
130 135 140

Gly Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145 150 155 160

```
Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
225                 230                 235                 240

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

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

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

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Cys Thr Leu Pro Pro
```

370 375 380

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385 390 395 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 205
<211> 478
<212> PRT
<213> Artificial Sequence

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

<400> 205
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro

```
65                  70                  75                  80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
                85                  90                  95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
            100                 105                 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly
225                 230                 235                 240

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

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285
```

```
Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

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

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

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470                 475
```

<210> 206
<211> 734
<212> PRT
<213> Artificial Sequence

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

<400> 206
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145 150 155 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
165 170 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
180 185 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln

```
        195                 200                 205

Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser
    210                 215                 220

Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly
225                 230                 235                 240

Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly
                245                 250                 255

Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys
            260                 265                 270

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

Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala
    290                 295                 300

His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser
305                 310                 315                 320

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
                325                 330                 335

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
            340                 345                 350

Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
        355                 360                 365

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val
    370                 375                 380

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
385                 390                 395                 400

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
                405                 410                 415
```

```
Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
            420                 425                 430

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Ser Gly Gly
        435                 440                 445

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Gln Ile Gln Leu Val Gln Ser Gly Ser
465                 470                 475                 480

Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser
                485                 490                 495

Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln Ser Pro
            500                 505                 510

Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr Gly Glu
        515                 520                 525

Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser Leu Asp
    530                 535                 540

Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu
545                 550                 555                 560

Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly
                565                 570                 575

Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
            580                 585                 590

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro
        595                 600                 605

Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg
    610                 615                 620

Thr Ser Glu Asn Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Pro
```

625 630 635 640

Gly Lys Ser Pro Gln Leu Leu Val Tyr Ala Ala Thr Asn Leu Ala Asp
645 650 655

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr
660 665 670

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Gly Thr Tyr Tyr Cys
675 680 685

Gln His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val
690 695 700

Glu Ile Lys Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
705 710 715 720

Ile Glu Trp His Glu Gly Gly Ser His His His His His His
725 730

<210> 207
<211> 734
<212> PRT
<213> Artificial Sequence

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

<400> 207
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr

```
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
        195                 200                 205

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

Arg Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn Leu
225                 230                 235                 240

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val Tyr
                245                 250                 255

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

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
        275                 280                 285
```

```
Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp Thr
    290                 295                 300

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln Ser
                325                 330                 335

Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys
            340                 345                 350

Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln
        355                 360                 365

Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr
    370                 375                 380

Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser
385                 390                 395                 400

Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys
                405                 410                 415

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr
            420                 425                 430

Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Ser Gly Gly
        435                 440                 445

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Asp Ile Gln Met Thr Gln Ser Pro Ser
465                 470                 475                 480

Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Thr
                485                 490                 495

Ser Glu Asn Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly
```

```
            500                 505                 510

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

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu
    530                 535                 540

Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln
545                 550                 555                 560

His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val Glu
                565                 570                 575

Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            580                 585                 590

Ser Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly
        595                 600                 605

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp
    610                 615                 620

Tyr Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp
625                 630                 635                 640

Met Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp
                645                 650                 655

Phe Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala
            660                 665                 670

Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe
        675                 680                 685

Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr
    690                 695                 700

Val Ser Ser Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
705                 710                 715                 720
```

Ile Glu Trp His Glu Gly Gly Ser His His His His His His
725 730

<210> 208
<211> 579
<212> PRT
<213> Artificial Sequence

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

<400> 208
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
130 135 140

Gly Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145 150 155 160

```
Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
                165                 170                 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
            180                 185                 190

Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
                245                 250                 255

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
            260                 265                 270

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
        275                 280                 285

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

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
305                 310                 315                 320

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
                325                 330                 335

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
            340                 345                 350

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
        355                 360                 365

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
```

```
    370                 375                 380

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

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
                405                 410                 415

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
            420                 425                 430

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
        435                 440                 445

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
    450                 455                 460

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
465                 470                 475                 480

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
                485                 490                 495

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
            500                 505                 510

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
        515                 520                 525

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
    530                 535                 540

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

Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His
                565                 570                 575

His His His
```

<210> 209
<211> 579
<212> PRT
<213> Artificial Sequence

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

<400> 209
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser
100 105 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
115 120 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
130 135 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145 150 155 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
165 170 175

```
Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly
225                 230                 235                 240

Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val
                245                 250                 255

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
            260                 265                 270

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
        275                 280                 285

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

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
305                 310                 315                 320

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
                325                 330                 335

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
            340                 345                 350

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
        355                 360                 365

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
    370                 375                 380

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
```

385 390 395 400

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
405 410 415

Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile
420 425 430

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
435 440 445

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
450 455 460

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
465 470 475 480

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
485 490 495

Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
500 505 510

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
515 520 525

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
530 535 540

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

Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His
565 570 575

His His His

<210> 210
<211> 478
<212> PRT

<213> Artificial Sequence

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

<400> 210
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
130 135 140

Gly Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser
145 150 155 160

Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu
165 170 175

Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser
180 185 190

```
Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln
        195                 200                 205

Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro
    210                 215                 220

Trp Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly
225                 230                 235                 240

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

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

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

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

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
```

405 410 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
420 425 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
435 440 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
450 455 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465 470 475

<210> 211
<211> 478
<212> PRT
<213> Artificial Sequence

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

<400> 211
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
20 25 30

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

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser

```
            100                 105                 110

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln
        115                 120                 125

Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys
    130                 135                 140

Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys
145                 150                 155                 160

Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn
                165                 170                 175

Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe
            180                 185                 190

Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu
        195                 200                 205

Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp
    210                 215                 220

Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly
225                 230                 235                 240

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

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
            260                 265                 270

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
        275                 280                 285

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
    290                 295                 300

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
305                 310                 315                 320
```

```
Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
                325                 330                 335

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
            340                 345                 350

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

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

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val
385                 390                 395                 400

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
                405                 410                 415

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
            420                 425                 430

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
        435                 440                 445

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
    450                 455                 460

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
465                 470                 475


<210> 212
<211> 734
<212> PRT
<213> Artificial Sequence

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

<400> 212
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1               5                   10                  15
```

```
His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser
    210                 215                 220

Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly
```

```
225                 230                 235                 240

Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met Gly
                245                 250                 255

Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys
            260                 265                 270

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

Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala
    290                 295                 300

His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val Ser
305                 310                 315                 320

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
                325                 330                 335

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
            340                 345                 350

Asp Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn
        355                 360                 365

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val
    370                 375                 380

Tyr Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
385                 390                 395                 400

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
                405                 410                 415

Glu Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp
            420                 425                 430

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Ser Gly Gly
        435                 440                 445
```

```
Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Gln Ile Gln Leu Val Gln Ser Gly Ser
465                 470                 475                 480

Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser
                485                 490                 495

Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln Ser Pro
            500                 505                 510

Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr Gly Glu
        515                 520                 525

Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser Leu Asp
    530                 535                 540

Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu
545                 550                 555                 560

Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly
                565                 570                 575

Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly
            580                 585                 590

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro
        595                 600                 605

Ser Ser Leu Ser Ala Ser Val Gly Asp Thr Val Thr Ile Thr Cys Arg
    610                 615                 620

Thr Ser Glu Asn Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Pro
625                 630                 635                 640

Gly Lys Ser Pro Gln Leu Leu Val Tyr Ala Ala Thr Asn Leu Ala Asp
                645                 650                 655

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr
```

660 665 670

Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Gly Thr Tyr Tyr Cys
675 680 685

Gln His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val
690 695 700

Glu Ile Lys Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
705 710 715 720

Ile Glu Trp His Glu Gly Gly Ser His His His His His His
725 730

<210> 213
<211> 707
<212> PRT
<213> Artificial Sequence

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

<400> 213
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr

```
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
        195                 200                 205

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

Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn Leu
225                 230                 235                 240

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val Tyr
                245                 250                 255

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

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
        275                 280                 285

Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp Thr
    290                 295                 300

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320
```

```
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln Ser
                325                 330                 335

Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys
            340                 345                 350

Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln
        355                 360                 365

Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr
    370                 375                 380

Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser
385                 390                 395                 400

Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys
                405                 410                 415

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr
            420                 425                 430

Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Ser Gly Gly
        435                 440                 445

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Asp Ile Gln Met Thr Gln Ser Pro Ser
465                 470                 475                 480

Ser Leu Ser Ala Ser Val Gly Asp Thr Val Thr Ile Thr Cys Arg Thr
                485                 490                 495

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

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

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu
```

```
    530                 535                 540

Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln
545                 550                 555                 560

His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val Glu
                565                 570                 575

Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            580                 585                 590

Ser Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly
        595                 600                 605

Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp
    610                 615                 620

Tyr Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp
625                 630                 635                 640

Met Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp
                645                 650                 655

Phe Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala
            660                 665                 670

Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe
        675                 680                 685

Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr
    690                 695                 700

Val Ser Ser
705


<210> 214
<211> 967
<212> PRT
<213> Artificial Sequence

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

polypeptide

<400> 214

```
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
    50                  55                  60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205
```

```
Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro
    210                 215                 220

Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe
225                 230                 235                 240

Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val
                245                 250                 255

Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
            260                 265                 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro
        275                 280                 285

Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr
    290                 295                 300

Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val
305                 310                 315                 320

Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala
                325                 330                 335

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

Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly
        355                 360                 365

Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro
    370                 375                 380

Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser
385                 390                 395                 400

Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln
                405                 410                 415

Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
```

```
            420                 425                 430

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys Gly Gly Gly Gly
        435                 440                 445

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

Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu
465                 470                 475                 480

Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln
                485                 490                 495

Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys
            500                 505                 510

Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val
        515                 520                 525

Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp
    530                 535                 540

Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe
545                 550                 555                 560

Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp
                565                 570                 575

Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg
            580                 585                 590

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
        595                 600                 605

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
    610                 615                 620

Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile
625                 630                 635                 640
```

```
Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
                645                 650                 655

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
            660                 665                 670

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
        675                 680                 685

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
    690                 695                 700

Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
705                 710                 715                 720

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

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
            740                 745                 750

Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly Gly Ser
        755                 760                 765

Gly Gly Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro
    770                 775                 780

Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu
785                 790                 795                 800

Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu
                805                 810                 815

Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala
            820                 825                 830

Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg
        835                 840                 845

Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr
```

```
    850                 855                 860

Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys
865                 870                 875                 880

Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp
                885                 890                 895

Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp
            900                 905                 910

Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys
        915                 920                 925

Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys
    930                 935                 940

Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val
945                 950                 955                 960

Met Ser Tyr Leu Asn Ala Ser
                965


<210> 215
<211> 769
<212> PRT
<213> Artificial Sequence

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

<400> 215
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1               5                   10                  15

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

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
        35                  40                  45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
```

```
    50                  55                  60

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

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

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
            100                 105                 110

Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly Gly Ser Gly Gly
    210                 215                 220

Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu
225                 230                 235                 240

Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp
                245                 250                 255

Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu
            260                 265                 270
```

```
Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly
        275                 280                 285

Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His
    290                 295                 300

Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp
305                 310                 315                 320

Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys
                325                 330                 335

Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr
            340                 345                 350

Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser
        355                 360                 365

Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg
    370                 375                 380

Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu
385                 390                 395                 400

Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met
                405                 410                 415

Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe
            420                 425                 430

Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu
        435                 440                 445

Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro
    450                 455                 460

Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val
465                 470                 475                 480

Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr
```

```
                485                 490                 495

Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser
            500                 505                 510

Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala
        515                 520                 525

Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Arg
    530                 535                 540

Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu His
545                 550                 555                 560

His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys Ala
                565                 570                 575

Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp His
            580                 585                 590

Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu Pro
        595                 600                 605

Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr Ser
    610                 615                 620

Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe Met
625                 630                 635                 640

Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr Gln
                645                 650                 655

Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys Arg
            660                 665                 670

Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu Met
        675                 680                 685

Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser Leu
    690                 695                 700
```

```
Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu Leu
705                 710                 715                 720


His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser Tyr
                725                 730                 735


Leu Asn Ala Ser Gly Gly Ser Gly Gly His His His His His His Gly
            740                 745                 750


Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His
        755                 760                 765


Glu
```

<210> 216
<211> 765
<212> PRT
<213> Artificial Sequence

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

<400> 216

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


Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30


Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45


Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60


Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80


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

```
Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
```

```
305                 310                 315                 320

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

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

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys
    450                 455                 460

Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly
465                 470                 475                 480

Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr
                485                 490                 495

Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu
            500                 505                 510

Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His
        515                 520                 525
```

```
Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys
    530                 535                 540

Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro
545                 550                 555                 560

Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg
                565                 570                 575

Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser
            580                 585                 590

Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly
        595                 600                 605

Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr
    610                 615                 620

Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu
625                 630                 635                 640

Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys
                645                 650                 655

Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro
            660                 665                 670

Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln
        675                 680                 685

Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser
    690                 695                 700

Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg
705                 710                 715                 720

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

Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr
```

740 745 750

Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser
755 760 765

<210> 217
<211> 565
<212> PRT
<213> Artificial Sequence

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

<400> 217
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp

```
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val
225                 230                 235                 240

Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val
                245                 250                 255

Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu
            260                 265                 270

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

Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly
    290                 295                 300

Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly
305                 310                 315                 320

Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys
                325                 330                 335

Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys
            340                 345                 350

Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser
        355                 360                 365
```

```
Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr
    370                 375                 380

Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser
385                 390                 395                 400

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

Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn
            420                 425                 430

Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro
        435                 440                 445

Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val
    450                 455                 460

Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser
465                 470                 475                 480

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

Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys
            500                 505                 510

Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser
        515                 520                 525

Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Leu Asn
    530                 535                 540

Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His
545                 550                 555                 560

His His His His His
                565
```

<210> 218

<211> 585
<212> PRT
<213> Artificial Sequence

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

<400> 218
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

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

Ser Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr
130 135 140

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

Ser Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly
165 170 175

Ala Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly

```
            180                 185                 190

Val Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu
        195                 200                 205

Thr Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln
    210                 215                 220

Gln Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu
225                 230                 235                 240

Leu Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu
                245                 250                 255

Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro
            260                 265                 270

Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile
        275                 280                 285

Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr
    290                 295                 300

Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys
305                 310                 315                 320

His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys
                325                 330                 335

Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu
            340                 345                 350

Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly
        355                 360                 365

Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe
    370                 375                 380

Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys
385                 390                 395                 400
```

```
Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu
                405                 410                 415

Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala
            420                 425                 430

Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu
        435                 440                 445

Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys
    450                 455                 460

Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg
465                 470                 475                 480

Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His
                485                 490                 495

Ser Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys
            500                 505                 510

Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val
        515                 520                 525

Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr
    530                 535                 540

Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly
545                 550                 555                 560

Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
                565                 570                 575

Gly Gly Ser His His His His His His
            580                 585
```

<210> 219
<211> 585
<212> PRT
<213> Artificial Sequence

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

<400> 219
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1 5 10 15

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
20 25 30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
35 40 45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65 70 75 80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly
100 105 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val
115 120 125

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

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

Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro
165 170 175

Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Val Thr
180 185 190

Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser

```
        195                 200                 205

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

Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
225                 230                 235                 240

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu
                245                 250                 255

Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro
            260                 265                 270

Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile
        275                 280                 285

Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr
    290                 295                 300

Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys
305                 310                 315                 320

His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys
                325                 330                 335

Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu
            340                 345                 350

Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly
        355                 360                 365

Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe
    370                 375                 380

Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys
385                 390                 395                 400

Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu
                405                 410                 415
```

```
Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala
            420                 425                 430

Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu
        435                 440                 445

Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys
    450                 455                 460

Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg
465                 470                 475                 480

Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His
                485                 490                 495

Ser Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys
            500                 505                 510

Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val
        515                 520                 525

Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr
    530                 535                 540

Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly
545                 550                 555                 560

Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
                565                 570                 575

Gly Gly Ser His His His His His His
            580                 585
```

<210> 220
<211> 464
<212> PRT
<213> Artificial Sequence

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

<400> 220
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1   5   10   15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20   25   30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35   40   45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50   55   60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65   70   75   80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100   105   110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115   120   125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130   135   140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145   150   155   160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180   185   190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195   200   205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly

```
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr
225                 230                 235                 240

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
                245                 250                 255

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

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
        275                 280                 285

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
    290                 295                 300

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
305                 310                 315                 320

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
                325                 330                 335

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

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

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys
    370                 375                 380

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
385                 390                 395                 400

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
                405                 410                 415

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
            420                 425                 430
```

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
435 440 445

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
450 455 460

<210> 221
<211> 484
<212> PRT
<213> Artificial Sequence

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

<400> 221
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

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

Ser Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr
130 135 140

```
Leu Ser Ala Ser Pro Gly Glu Arg Val Thr Met Thr Cys Ser Ala Ser
145                 150                 155                 160

Ser Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly
                165                 170                 175

Ala Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly
            180                 185                 190

Val Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu
        195                 200                 205

Thr Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln
    210                 215                 220

Gln Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu
225                 230                 235                 240

Leu Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser
                245                 250                 255

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala
            260                 265                 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
        275                 280                 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
    290                 295                 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
305                 310                 315                 320

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
                325                 330                 335

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
            340                 345                 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro
```

```
        355                 360                 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
    370                 375                 380

Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
385                 390                 395                 400

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

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

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
        435                 440                 445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
    450                 455                 460

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
465                 470                 475                 480

Ser Pro Gly Lys
```

<210> 222
<211> 484
<212> PRT
<213> Artificial Sequence

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

<400> 222

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

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
            20                  25                  30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
```

```
        35                  40                  45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65                  70                  75                  80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly
            100                 105                 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val
        115                 120                 125

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

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

Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro
                165                 170                 175

Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Val Thr
            180                 185                 190

Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser
        195                 200                 205

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

Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
225                 230                 235                 240

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser
                245                 250                 255
```

```
Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala
            260                 265                 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
        275                 280                 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
    290                 295                 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
305                 310                 315                 320

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
                325                 330                 335

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
            340                 345                 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro
        355                 360                 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
    370                 375                 380

Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
385                 390                 395                 400

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

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

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
        435                 440                 445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
    450                 455                 460

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
```

465 470 475 480

Ser Pro Gly Lys

<210> 223
<211> 746
<212> PRT
<213> Artificial Sequence

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

<400> 223
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser

```
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala Ser
    210                 215                 220

Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Gly
225                 230                 235                 240

Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly
                245                 250                 255

Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys
            260                 265                 270

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

Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
    290                 295                 300

Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
305                 310                 315                 320

Thr Leu Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
                325                 330                 335

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
            340                 345                 350

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser
        355                 360                 365
```

```
Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala
    370                 375                 380

Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val
385                 390                 395                 400

Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr
                405                 410                 415

Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln
            420                 425                 430

Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu
        435                 440                 445

Lys Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
    450                 455                 460

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gln Val Gln
465                 470                 475                 480

Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala Ser Val Asn
                485                 490                 495

Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser
            500                 505                 510

Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile
        515                 520                 525

Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys
    530                 535                 540

Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu
545                 550                 555                 560

Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Gly Lys
                565                 570                 575

Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu
```

```
            580                 585                 590

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
        595                 600                 605

Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala
    610                 615                 620

Ser Pro Gly Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val
625                 630                 635                 640

Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro
                645                 650                 655

Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ala
            660                 665                 670

Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser
        675                 680                 685

Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr His
    690                 695                 700

Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly
705                 710                 715                 720

Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His
                725                 730                 735

Glu Gly Gly Ser His His His His His His
            740                 745
```

<210> 224
<211> 746
<212> PRT
<213> Artificial Sequence

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

<400> 224
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu

```
1               5                   10                  15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly Glu
    210                 215                 220
```

```
Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg Tyr
225                 230                 235                 240

Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp Ile
                245                 250                 255

Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly
            260                 265                 270

Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu Pro
        275                 280                 285

Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr His Ser Asp Pro Leu
    290                 295                 300

Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly Ser
305                 310                 315                 320

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln
                325                 330                 335

Ser Gly Ala Glu Val Ala Lys Pro Gly Ala Ser Val Asn Leu Asn Cys
            340                 345                 350

Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg
        355                 360                 365

Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro Arg
    370                 375                 380

Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Val Thr Leu
385                 390                 395                 400

Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser Leu
                405                 410                 415

Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Gly Lys Asp Tyr Gly
            420                 425                 430

Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser
```

```
        435                 440                 445

Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
    450                 455                 460

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gln Ile Val
465                 470                 475                 480

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

Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg Tyr Leu His
            500                 505                 510

Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp Ile Tyr Gly
        515                 520                 525

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

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

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

Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly Ser Gly Gly
            580                 585                 590

Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly
        595                 600                 605

Ala Glu Val Ala Lys Pro Gly Ala Ser Val Asn Leu Asn Cys Lys Ala
    610                 615                 620

Ser Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Arg
625                 630                 635                 640

Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro Arg Ser Gly
                645                 650                 655
```

```
Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Val Thr Leu Thr Thr
            660                 665                 670

Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser Leu Thr Ser
        675                 680                 685

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Gly Lys Asp Tyr Gly Ser Thr
    690                 695                 700

Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly
705                 710                 715                 720

Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His
                725                 730                 735

Glu Gly Gly Ser His His His His His His
            740                 745
```

<210> 225
<211> 972
<212> PRT
<213> Artificial Sequence

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

<400> 225

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

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80
```

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
```

```
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

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

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys
    450                 455                 460

Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly
465                 470                 475                 480

Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr
                485                 490                 495

Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu
            500                 505                 510
```

```
Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His
        515                 520                 525

Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys
    530                 535                 540

Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro
545                 550                 555                 560

Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg
                565                 570                 575

Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser
            580                 585                 590

Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly
        595                 600                 605

Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr
    610                 615                 620

Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu
625                 630                 635                 640

Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys
                645                 650                 655

Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro
            660                 665                 670

Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln
        675                 680                 685

Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser
    690                 695                 700

Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg
705                 710                 715                 720

Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile
```

```
                725                 730                 735

Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr
            740                 745                 750

Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser
        755                 760                 765

Gly Gly Gly Gly Ser Gly Gly Arg Asn Leu Pro Val Ala Thr Pro Asp
    770                 775                 780

Pro Gly Met Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala
785                 790                 795                 800

Val Ser Asn Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro
                805                 810                 815

Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr
            820                 825                 830

Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser
        835                 840                 845

Cys Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu
    850                 855                 860

Ala Ser Arg Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile
865                 870                 875                 880

Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala
                885                 890                 895

Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met
            900                 905                 910

Leu Ala Val Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu
        915                 920                 925

Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr
    930                 935                 940
```

Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val
945 950 955 960

Thr Ile Asp Arg Val Met Ser Tyr Leu Asn Ala Ser
965 970

<210> 226
<211> 774
<212> PRT
<213> Artificial Sequence

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

<400> 226
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Val Thr Leu Thr Thr Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

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

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

```
Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val
225                 230                 235                 240

Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val
                245                 250                 255

Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu
            260                 265                 270

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

Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly
    290                 295                 300

Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly
305                 310                 315                 320

Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys
                325                 330                 335

Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys
            340                 345                 350

Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser
```

```
        355                 360                 365

Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr
    370                 375                 380

Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser
385                 390                 395                 400

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

Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn
            420                 425                 430

Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro
        435                 440                 445

Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val
    450                 455                 460

Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser
465                 470                 475                 480

Leu Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys
                485                 490                 495

Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys
            500                 505                 510

Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser
        515                 520                 525

Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly
    530                 535                 540

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

Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn
                565                 570                 575
```

```
Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser
            580                 585                 590

Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val
        595                 600                 605

Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn
    610                 615                 620

Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg
625                 630                 635                 640

Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp
                645                 650                 655

Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu
            660                 665                 670

Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val
        675                 680                 685

Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro
    690                 695                 700

Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys
705                 710                 715                 720

Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp
                725                 730                 735

Arg Val Met Ser Tyr Leu Asn Ala Ser Gly Gly Ser Gly Gly His His
            740                 745                 750

His His His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln
        755                 760                 765

Lys Ile Glu Trp His Glu
    770
```

<210> 227

<211> 765
<212> PRT
<213> Artificial Sequence

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

<400> 227
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser

```
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380

Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400
```

```
Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

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

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys
    450                 455                 460

Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly
465                 470                 475                 480

Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr
                485                 490                 495

Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu
            500                 505                 510

Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His
        515                 520                 525

Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys
    530                 535                 540

Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro
545                 550                 555                 560

Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg
                565                 570                 575

Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser
            580                 585                 590

Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly
        595                 600                 605

Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr
```

610 615 620

Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu
625 630 635 640

Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys
645 650 655

Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro
660 665 670

Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln
675 680 685

Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser
690 695 700

Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg
705 710 715 720

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

Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr
740 745 750

Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser
755 760 765

<210> 228
<211> 565
<212> PRT
<213> Artificial Sequence

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

<400> 228
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr

```
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val
225                 230                 235                 240
```

```
Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val
                245                 250                 255

Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu
            260                 265                 270

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

Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly
    290                 295                 300

Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly
305                 310                 315                 320

Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys
                325                 330                 335

Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys
            340                 345                 350

Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser
        355                 360                 365

Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr
    370                 375                 380

Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser
385                 390                 395                 400

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

Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn
            420                 425                 430

Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro
        435                 440                 445

Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val
```

```
    450                 455                 460

Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser
465                 470                 475                 480

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

Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys
            500                 505                 510

Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser
        515                 520                 525

Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Leu Asn
    530                 535                 540

Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His
545                 550                 555                 560

His His His His His
                565


<210> 229
<211> 585
<212> PRT
<213> Artificial Sequence

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

<400> 229
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1               5                   10                  15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
```

```
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

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

Ser Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr
    130                 135                 140

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

Ser Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly
                165                 170                 175

Ala Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly
            180                 185                 190

Val Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu
        195                 200                 205

Thr Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln
    210                 215                 220

Gln Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu
225                 230                 235                 240

Leu Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu
                245                 250                 255

Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro
            260                 265                 270
```

```
Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile
        275                 280                 285

Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr
    290                 295                 300

Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys
305                 310                 315                 320

His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys
                325                 330                 335

Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu
            340                 345                 350

Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly
        355                 360                 365

Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe
    370                 375                 380

Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys
385                 390                 395                 400

Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu
                405                 410                 415

Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala
            420                 425                 430

Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu
        435                 440                 445

Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys
    450                 455                 460

Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg
465                 470                 475                 480

Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His
```

```
                485                 490                 495

Ser Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys
            500                 505                 510

Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val
        515                 520                 525

Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr
    530                 535                 540

Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly
545                 550                 555                 560

Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
                565                 570                 575

Gly Gly Ser His His His His His His
            580                 585
```

<210> 230
<211> 585
<212> PRT
<213> Artificial Sequence

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

<400> 230

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

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
            20                  25                  30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
        35                  40                  45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
```

```
65                  70                  75                  80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly
            100                 105                 110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Gln
        115                 120                 125

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

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

Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro
                165                 170                 175

Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr
            180                 185                 190

Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser
        195                 200                 205

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

Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
225                 230                 235                 240

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu
                245                 250                 255

Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro
            260                 265                 270

Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile
        275                 280                 285
```

```
Thr Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr
    290                 295                 300

Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys
305                 310                 315                 320

His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys
                325                 330                 335

Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu
            340                 345                 350

Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly
        355                 360                 365

Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe
    370                 375                 380

Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys
385                 390                 395                 400

Gly Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu
                405                 410                 415

Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala
            420                 425                 430

Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu
        435                 440                 445

Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys
    450                 455                 460

Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg
465                 470                 475                 480

Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His
                485                 490                 495

Ser Tyr Phe Ser Leu Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys
```

```
            500                 505                 510

Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val
        515                 520                 525

Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr
    530                 535                 540

Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly
545                 550                 555                 560

Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
                565                 570                 575

Gly Gly Ser His His His His His His
            580                 585
```

<210> 231
<211> 464
<212> PRT
<213> Artificial Sequence

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

<400> 231

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

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
```

```
                85                  90                  95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser Ser Asp Lys Thr
225                 230                 235                 240

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
                245                 250                 255

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

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
        275                 280                 285

Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
    290                 295                 300
```

```
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
305                 310                 315                 320

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
                325                 330                 335

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

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

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys
    370                 375                 380

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
385                 390                 395                 400

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
                405                 410                 415

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
            420                 425                 430

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
        435                 440                 445

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455                 460


<210> 232
<211> 484
<212> PRT
<213> Artificial Sequence

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

<400> 232
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1               5                   10                  15
```

```
Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

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

Ser Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr
    130                 135                 140

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

Ser Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly
                165                 170                 175

Ala Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly
            180                 185                 190

Val Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu
        195                 200                 205

Thr Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln
    210                 215                 220

Gln Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu
```

225 230 235 240

Leu Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser
245 250 255

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala
260 265 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
275 280 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
290 295 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
305 310 315 320

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
325 330 335

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
340 345 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro
355 360 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
370 375 380

Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
385 390 395 400

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

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

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
435 440 445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
    450   455   460

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
465   470   475   480

Ser Pro Gly Lys

<210> 233
<211> 484
<212> PRT
<213> Artificial Sequence

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

<400> 233
Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
1   5   10   15

Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg
            20   25   30

Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp
        35   40   45

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

Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu
65   70   75   80

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

Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly
            100   105   110

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Gln
        115   120   125

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

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

Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro
                165                 170                 175

Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr
            180                 185                 190

Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser
        195                 200                 205

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

Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val
225                 230                 235                 240

Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Pro Lys Ser
                245                 250                 255

Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala
            260                 265                 270

Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu
        275                 280                 285

Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser
    290                 295                 300

His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu
305                 310                 315                 320

Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr
                325                 330                 335

Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
```

340 345 350

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Gly Ala Pro
355 360 365

Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln
370 375 380

Val Cys Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val
385 390 395 400

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

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

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr
435 440 445

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val
450 455 460

Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu
465 470 475 480

Ser Pro Gly Lys

<210> 234
<211> 746
<212> PRT
<213> Artificial Sequence

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

<400> 234
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys

```
            20                  25                  30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala Ser
    210                 215                 220

Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Gly
225                 230                 235                 240
```

```
Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly
                245                 250                 255

Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys
            260                 265                 270

Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr Met
        275                 280                 285

Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys Ala
    290                 295                 300

Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr
305                 310                 315                 320

Thr Leu Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
                325                 330                 335

Gly Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu
            340                 345                 350

Ser Ala Ser Pro Gly Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser
        355                 360                 365

Ser Val Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala
    370                 375                 380

Ser Pro Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val
385                 390                 395                 400

Pro Ala Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr
                405                 410                 415

Ile Ser Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln
            420                 425                 430

Tyr His Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu
        435                 440                 445

Lys Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
```

```
    450                 455                 460

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gln Val Gln
465                 470                 475                 480

Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala Ser Val Asn
                485                 490                 495

Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser
            500                 505                 510

Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile
        515                 520                 525

Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys
    530                 535                 540

Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu
545                 550                 555                 560

Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys Ala Gly Lys
                565                 570                 575

Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu
            580                 585                 590

Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
        595                 600                 605

Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala
    610                 615                 620

Ser Pro Gly Glu Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val
625                 630                 635                 640

Ser Ser Arg Tyr Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro
                645                 650                 655

Arg Leu Trp Ile Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ala
            660                 665                 670
```

Arg Phe Ser Gly Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser
        675   680   685

Ser Val Glu Pro Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr His
    690   695   700

Ser Asp Pro Leu Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly
705   710   715   720

Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His
                725   730   735

Glu Gly Gly Ser His His His His His His
            740   745

<210> 235
<211> 746
<212> PRT
<213> Artificial Sequence

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

<400> 235
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1   5   10   15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20   25   30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35   40   45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65   70   75   80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85   90   95

```
Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln
        195                 200                 205

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

Arg Val Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg Tyr
225                 230                 235                 240

Leu His Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp Ile
                245                 250                 255

Tyr Gly Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly
            260                 265                 270

Ser Gly Pro Gly Thr Ser Tyr Thr Leu Thr Ile Ser Ser Val Glu Pro
        275                 280                 285

Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Tyr His Ser Asp Pro Leu
    290                 295                 300

Thr Phe Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly Ser
```

```
305                 310                 315                 320

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Gln
                325                 330                 335

Ser Gly Ala Glu Val Ala Lys Pro Gly Ala Ser Val Asn Leu Asn Cys
            340                 345                 350

Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg
        355                 360                 365

Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro Arg
    370                 375                 380

Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu
385                 390                 395                 400

Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser Leu
                405                 410                 415

Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys Ala Gly Lys Asp Tyr Gly
            420                 425                 430

Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser
        435                 440                 445

Ser Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
    450                 455                 460

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gln Ile Val
465                 470                 475                 480

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

Thr Met Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Arg Tyr Leu His
            500                 505                 510

Trp Tyr Gln Gln Lys Ser Gly Ala Ser Pro Arg Leu Trp Ile Tyr Gly
        515                 520                 525
```

```
Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser Gly
    530                 535                 540

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

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

Gly Gln Gly Thr Lys Leu Glu Leu Lys Gly Gly Gly Gly Ser Gly Gly
            580                 585                 590

Gly Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Gln Gln Ser Gly
        595                 600                 605

Ala Glu Val Ala Lys Pro Gly Ala Ser Val Asn Leu Asn Cys Lys Ala
    610                 615                 620

Ser Gly Tyr Thr Phe Thr Ser Tyr Gly Ile Ser Trp Val Arg Gln Arg
625                 630                 635                 640

Thr Gly Gln Gly Leu Glu Trp Ile Gly Glu Ile Tyr Pro Arg Ser Gly
                645                 650                 655

Asn Thr Tyr Tyr Asn Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala
            660                 665                 670

Asp Lys Ser Thr Arg Thr Ala Tyr Met Glu Leu Arg Ser Leu Thr Ser
        675                 680                 685

Glu Asp Thr Ala Val Tyr Phe Cys Ala Gly Lys Asp Tyr Gly Ser Thr
    690                 695                 700

Tyr Ala Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser Gly
705                 710                 715                 720

Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His
                725                 730                 735

Glu Gly Gly Ser His His His His His His
```

740 745

<210> 236
<211> 972
<212> PRT
<213> Artificial Sequence

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

<400> 236
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1 5 10 15

Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65 70 75 80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
85 90 95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
115 120 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
130 135 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145 150 155 160

Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu

```
                165                 170                 175

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220

Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro
225                 230                 235                 240

Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255

Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285

Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300

Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320

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

Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350

Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365

Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380
```

```
Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400

Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415

Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430

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

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys
    450                 455                 460

Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly
465                 470                 475                 480

Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr
                485                 490                 495

Trp Thr Leu Asp Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu
            500                 505                 510

Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His
        515                 520                 525

Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys
    530                 535                 540

Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro
545                 550                 555                 560

Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg
                565                 570                 575

Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser
            580                 585                 590

Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly
```

```
        595                 600                 605

Ala Ala Thr Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr
    610                 615                 620

Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu
625                 630                 635                 640

Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys
                645                 650                 655

Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro
            660                 665                 670

Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln
        675                 680                 685

Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser
    690                 695                 700

Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg
705                 710                 715                 720

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

Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr
            740                 745                 750

Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser
        755                 760                 765

Gly Gly Gly Gly Ser Gly Gly Arg Asn Leu Pro Val Ala Thr Pro Asp
    770                 775                 780

Pro Gly Met Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala
785                 790                 795                 800

Val Ser Asn Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro
                805                 810                 815
```

```
Cys Thr Ser Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr
            820                 825                 830

Ser Thr Val Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser
        835                 840                 845

Cys Leu Asn Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu
    850                 855                 860

Ala Ser Arg Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile
865                 870                 875                 880

Tyr Glu Asp Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala
                885                 890                 895

Lys Leu Leu Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met
            900                 905                 910

Leu Ala Val Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu
        915                 920                 925

Thr Val Pro Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr
    930                 935                 940

Lys Ile Lys Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val
945                 950                 955                 960

Thr Ile Asp Arg Val Met Ser Tyr Leu Asn Ala Ser
                965                 970


<210> 237
<211> 774
<212> PRT
<213> Artificial Sequence

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

<400> 237
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Ala Lys Pro Gly Ala
1               5                   10                  15
```

```
Ser Val Asn Leu Asn Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
            20                  25                  30

Gly Ile Ser Trp Val Arg Gln Arg Thr Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Glu Ile Tyr Pro Arg Ser Gly Asn Thr Tyr Tyr Asn Glu Lys Phe
    50                  55                  60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Thr Arg Thr Ala Tyr
65                  70                  75                  80

Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95

Ala Gly Lys Asp Tyr Gly Ser Thr Tyr Ala Asp Tyr Trp Gly Gln Gly
            100                 105                 110

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125

Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140

Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160

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

Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190

Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205

Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly
    210                 215                 220

Gly Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val
```

```
225                 230                 235                 240

Tyr Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val
                245                 250                 255

Val Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu
            260                 265                 270

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

Val Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly
    290                 295                 300

Glu Val Leu Ser His Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly
305                 310                 315                 320

Ile Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys
                325                 330                 335

Thr Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys
            340                 345                 350

Trp Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser
        355                 360                 365

Ser Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr
    370                 375                 380

Leu Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser
385                 390                 395                 400

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

Pro Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn
            420                 425                 430

Tyr Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro
        435                 440                 445
```

```
Lys Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val
    450                 455                 460

Ser Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser
465                 470                 475                 480

Leu Thr Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys
                485                 490                 495

Asp Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys
            500                 505                 510

Asn Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser
        515                 520                 525

Trp Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Gly Gly
    530                 535                 540

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

Phe Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn
                565                 570                 575

Met Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser
            580                 585                 590

Glu Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val
        595                 600                 605

Glu Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn
    610                 615                 620

Ser Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg
625                 630                 635                 640

Lys Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp
                645                 650                 655

Leu Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu
```

660 665 670

Met Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val
675 680 685

Ile Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro
690 695 700

Gln Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys
705 710 715 720

Leu Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp
725 730 735

Arg Val Met Ser Tyr Leu Asn Ala Ser Gly Gly Ser Gly Gly His His
740 745 750

His His His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln
755 760 765

Lys Ile Glu Trp His Glu
770

<210> 238
<211> 448
<212> PRT
<213> Artificial Sequence

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

<400> 238
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
20 25 30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe

```
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220

His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser
225                 230                 235                 240

Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270
```

```
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285

Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300

Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320

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

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

Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys
        355                 360                 365

Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380

Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400

Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415

Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430

Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 239
<211> 439
<212> PRT
<213> Artificial Sequence

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

<400> 239
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1   5   10   15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
            20   25   30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
        35   40   45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65   70   75   80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85   90   95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100   105   110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115   120   125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145   150   155   160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165   170   175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180   185   190

Tyr Leu Asn Ala Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Glu
        195   200   205

Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro

```
    210                 215                 220

Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
225                 230                 235                 240

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
                245                 250                 255

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
            260                 265                 270

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
        275                 280                 285

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
    290                 295                 300

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
305                 310                 315                 320

Gly Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
                325                 330                 335

Glu Pro Gln Val Tyr Thr Leu Pro Pro Cys Arg Glu Glu Met Thr Lys
            340                 345                 350

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

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
    370                 375                 380

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val Ser
385                 390                 395                 400

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
                405                 410                 415

Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser
            420                 425                 430
```

Leu Ser Leu Ser Pro Gly Lys
435

<210> 240
<211> 15
<212> PRT
<213> Artificial Sequence

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

<400> 240
Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
1 5 10 15

<210> 241
<211> 6
<212> PRT
<213> Artificial Sequence

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

<400> 241
His His His His His His
1 5

<210> 242
<211> 6
<212> PRT
<213> Artificial Sequence

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

<400> 242
Gly Gly Ser Gly Gly Gly
1 5

<210> 243
<211> 27
<212> PRT
<213> Artificial Sequence

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

peptide

<400> 243
Gly Gly Ser His His His His His His Gly Gly Ser Gly Leu Asn Asp
1 5 10 15

Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
20 25

<210> 244
<211> 29
<212> PRT
<213> Artificial Sequence

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

<400> 244
Gly Gly Ser Gly Gly His His His His His His Gly Gly Ser Gly Leu
1 5 10 15

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
20 25

<210> 245
<211> 27
<212> PRT
<213> Artificial Sequence

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

<400> 245
Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp
1 5 10 15

His Glu Gly Gly Ser His His His His His His
20 25

<210> 246
<211> 10
<212> PRT
<213> Artificial Sequence

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

peptide

<400> 246
Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10

<210> 247
<211> 20
<212> PRT
<213> Artificial Sequence

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

<220>
<221> SITE
<222> (1)..(20)
<223> This sequence may encompass 1-5 "Gly Gly Gly Ser" repeating units

<400> 247
Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
1 5 10 15

Gly Gly Gly Ser
20

<210> 248
<211> 20
<212> PRT
<213> Artificial Sequence

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

<400> 248
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser
20

<210> 249
<211> 72
<212> PRT
<213> Artificial Sequence

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

<220>
<221> SITE
<222> (1)..(72)
<223> This sequence may encompass 1-8 "(Gly)nSer" repeating units
where n = 1-8

<400> 249
Gly Gly Gly Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly Gly
1 5 10 15

Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly
20 25 30

Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Ser Gly Gly Gly
35 40 45

Gly Gly Gly Gly Gly Ser Gly Gly Gly Gly Gly Gly Gly Gly Ser Gly
50 55 60

Gly Gly Gly Gly Gly Gly Gly Ser
65 70

<210> 250
<211> 5
<212> PRT
<213> Artificial Sequence

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

<400> 250
Asp Gly Gly Gly Ser
1 5

<210> 251
<211> 5
<212> PRT
<213> Artificial Sequence

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

peptide

<400> 251
Thr Gly Glu Lys Pro
1 5

<210> 252
<211> 4
<212> PRT
<213> Artificial Sequence

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

<400> 252
Gly Gly Arg Arg
1

<210> 253
<211> 14
<212> PRT
<213> Artificial Sequence

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

<400> 253
Glu Gly Lys Ser Ser Gly Ser Gly Ser Glu Ser Lys Val Asp
1 5 10

<210> 254
<211> 18
<212> PRT
<213> Artificial Sequence

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

<400> 254
Lys Glu Ser Gly Ser Val Ser Ser Glu Gln Leu Ala Gln Phe Arg Ser
1 5 10 15

Leu Asp

<210> 255

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

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

<400> 255
Gly Gly Arg Arg Gly Gly Gly Ser
1 5

<210> 256
<211> 9
<212> PRT
<213> Artificial Sequence

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

<400> 256
Leu Arg Gln Arg Asp Gly Glu Arg Pro
1 5

<210> 257
<211> 12
<212> PRT
<213> Artificial Sequence

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

<400> 257
Leu Arg Gln Lys Asp Gly Gly Gly Ser Glu Arg Pro
1 5 10

<210> 258
<211> 18
<212> PRT
<213> Artificial Sequence

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

<400> 258
Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Thr
1 5 10 15

Lys Gly

<210> 259
<211> 308
<212> PRT
<213> Artificial Sequence

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

<400> 259
Leu Arg Cys Met Gln Cys Lys Thr Asn Gly Asp Cys Arg Val Glu Glu
1 5 10 15

Cys Ala Leu Gly Gln Asp Leu Cys Arg Thr Thr Ile Val Arg Leu Trp
20 25 30

Glu Glu Gly Glu Glu Leu Glu Leu Val Glu Lys Ser Cys Thr His Ser
35 40 45

Glu Lys Thr Asn Arg Thr Leu Ser Tyr Arg Thr Gly Leu Lys Ile Thr
50 55 60

Ser Leu Thr Glu Val Val Cys Gly Leu Asp Leu Cys Asn Gln Gly Asn
65 70 75 80

Ser Gly Arg Ala Val Thr Tyr Ser Arg Ser Arg Tyr Leu Glu Cys Ile
85 90 95

Ser Cys Gly Ser Ser Asp Met Ser Cys Glu Arg Gly Arg His Gln Ser
100 105 110

Leu Gln Cys Arg Ser Pro Glu Glu Gln Cys Leu Asp Val Val Thr His
115 120 125

Trp Ile Gln Glu Gly Glu Glu Gly Arg Pro Lys Asp Asp Arg His Leu
130 135 140

Arg Gly Cys Gly Tyr Leu Pro Gly Cys Pro Gly Ser Asn Gly Phe His
145 150 155 160

```
Asn Asn Asp Thr Phe His Phe Leu Lys Cys Cys Asn Thr Thr Lys Cys
                165                 170                 175

Asn Glu Gly Pro Ile Leu Glu Leu Glu Asn Leu Pro Gln Asn Gly Arg
            180                 185                 190

Gln Cys Tyr Ser Cys Lys Gly Asn Ser Thr His Gly Cys Ser Ser Glu
        195                 200                 205

Glu Thr Phe Leu Ile Asp Cys Arg Gly Pro Met Asn Gln Cys Leu Val
    210                 215                 220

Ala Thr Gly Thr His Glu Pro Lys Asn Gln Ser Tyr Met Val Arg Gly
225                 230                 235                 240

Cys Ala Thr Ala Ser Met Cys Gln His Ala His Leu Gly Asp Ala Phe
                245                 250                 255

Ser Met Asn His Ile Asp Val Ser Cys Cys Thr Lys Ser Gly Cys Asn
            260                 265                 270

His Pro Asp Leu Asp Val Gln Tyr Arg Gly Gly Ser His His His His
        275                 280                 285

His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile
    290                 295                 300

Glu Trp His Glu
305
```

<210> 260
<211> 301
<212> PRT
<213> Artificial Sequence

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

<400> 260

```
Leu Gln Cys Met Gln Cys Glu Ser Asn Gln Ser Cys Leu Val Glu Glu
1               5                   10                  15
```

```
Cys Ala Leu Gly Gln Asp Leu Cys Arg Thr Thr Val Leu Arg Glu Trp
            20                  25                  30

Gln Asp Asp Arg Glu Leu Glu Val Val Thr Arg Gly Cys Ala His Ser
        35                  40                  45

Glu Lys Thr Asn Arg Thr Met Ser Tyr Arg Met Gly Ser Met Ile Ile
    50                  55                  60

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

Pro Gly Ala Arg Gly Arg Ala Phe Pro Gln Gly Arg Tyr Leu Glu Cys
                85                  90                  95

Ala Ser Cys Thr Ser Leu Asp Gln Ser Cys Glu Arg Gly Arg Glu Gln
            100                 105                 110

Ser Leu Gln Cys Arg Tyr Pro Thr Glu His Cys Ile Glu Val Val Thr
        115                 120                 125

Leu Gln Ser Thr Glu Arg Ser Leu Lys Asp Glu Asp Tyr Thr Arg Gly
    130                 135                 140

Cys Gly Ser Leu Pro Gly Cys Pro Gly Thr Ala Gly Phe His Ser Asn
145                 150                 155                 160

Gln Thr Phe His Phe Leu Lys Cys Cys Asn Tyr Thr His Cys Asn Gly
                165                 170                 175

Gly Pro Val Leu Asp Leu Gln Ser Phe Pro Pro Asn Gly Phe Gln Cys
            180                 185                 190

Tyr Ser Cys Glu Gly Asn Asn Thr Leu Gly Cys Ser Ser Glu Glu Ala
        195                 200                 205

Ser Leu Ile Asn Cys Arg Gly Pro Met Asn Gln Cys Leu Val Ala Thr
    210                 215                 220

Gly Leu Asp Val Leu Gly Asn Arg Ser Tyr Thr Val Arg Gly Cys Ala
```

225 230 235 240

Thr Ala Ser Trp Cys Gln Gly Ser His Val Ala Asp Ser Phe Pro Thr
245 250 255

His Leu Asn Val Ser Val Ser Cys Cys His Gly Ser Gly Cys Asn Ser
260 265 270

Pro Thr Gly Gly Ser His His His His His His Gly Gly Ser Gly Leu
275 280 285

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu
290 295 300

<210> 261
<211> 179
<212> PRT
<213> Artificial Sequence

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

<400> 261
Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
1 5 10 15

Val Thr Asn Ser Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp
20 25 30

Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile
35 40 45

His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile
50 55 60

Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly
65 70 75 80

Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser
85 90 95

Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu

100 105 110

Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg
115 120 125

Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln
130 135 140

Glu Cys Met Val His Asp Cys Ala Gly Gly Ser His His His His His
145 150 155 160

His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu
165 170 175

Trp His Glu

<210> 262
<211> 179
<212> PRT
<213> Artificial Sequence

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

<400> 262
Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
1 5 10 15

Val Thr Asn Ser Gly Ser Val Leu Gly Ala Pro Asp Glu Ser Asn Cys
20 25 30

Gly Cys Gln Asn Gly Gly Val Cys Val Ser Tyr Lys Tyr Phe Ser Arg
35 40 45

Ile Arg Arg Cys Ser Cys Pro Arg Lys Phe Gln Gly Glu His Cys Glu
50 55 60

Ile Asp Ala Ser Lys Thr Cys Tyr His Gly Asn Gly Asp Ser Tyr Arg
65 70 75 80

Gly Lys Ala Asn Thr Asp Thr Lys Gly Arg Pro Cys Leu Ala Trp Asn

85 90 95

Ala Pro Ala Val Leu Gln Lys Pro Tyr Asn Ala His Arg Pro Asp Ala
100 105 110

Ile Ser Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn
115 120 125

Gln Lys Arg Pro Trp Cys Tyr Val Gln Ile Gly Leu Arg Gln Phe Val
130 135 140

Gln Glu Cys Met Val His Asp Cys Gly Gly Ser His His His His His
145 150 155 160

His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu
165 170 175

Trp His Glu

<210> 263
<211> 250
<212> PRT
<213> Artificial Sequence

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

<400> 263
Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
1 5 10 15

Val Thr Asn Ser Gly Asn Ser Gly Arg Ala Val Thr Tyr Ser Arg Ser
20 25 30

Arg Tyr Leu Glu Cys Ile Ser Cys Gly Ser Ser Asp Met Ser Cys Glu
35 40 45

Arg Gly Arg His Gln Ser Leu Gln Cys Arg Ser Pro Glu Glu Gln Cys
50 55 60

Leu Asp Val Val Thr His Trp Ile Gln Glu Gly Glu Glu Gly Arg Pro

65 70 75 80

Lys Asp Asp Arg His Leu Arg Gly Cys Gly Tyr Leu Pro Gly Cys Pro
85 90 95

Gly Ser Asn Gly Phe His Asn Asn Asp Thr Phe His Phe Leu Lys Cys
100 105 110

Cys Asn Thr Thr Lys Cys Asn Glu Gly Pro Ile Leu Glu Leu Glu Asn
115 120 125

Leu Pro Gln Asn Gly Arg Gln Cys Tyr Ser Cys Lys Gly Asn Ser Thr
130 135 140

His Gly Cys Ser Ser Glu Glu Thr Phe Leu Ile Asp Cys Arg Gly Pro
145 150 155 160

Met Asn Gln Cys Leu Val Ala Thr Gly Thr His Glu Pro Lys Asn Gln
165 170 175

Ser Tyr Met Val Arg Gly Cys Ala Thr Ala Ser Met Cys Gln His Ala
180 185 190

His Leu Gly Asp Ala Phe Ser Met Asn His Ile Asp Val Ser Cys Cys
195 200 205

Thr Lys Ser Gly Cys Asn His Pro Asp Leu Asp Val Gln Tyr Arg Gly
210 215 220

Gly Ser His His His His His His Gly Gly Ser Gly Leu Asn Asp Ile
225 230 235 240

Phe Glu Ala Gln Lys Ile Glu Trp His Glu
245 250

<210> 264
<211> 150
<212> PRT
<213> Artificial Sequence

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

polypeptide

<400> 264
Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
1 5 10 15

Val Thr Asn Ser Gly Pro Ile Leu Glu Leu Glu Asn Leu Pro Gln Asn
20 25 30

Gly Arg Gln Cys Tyr Ser Cys Lys Gly Asn Ser Thr His Gly Cys Ser
35 40 45

Ser Glu Glu Thr Phe Leu Ile Asp Cys Arg Gly Pro Met Asn Gln Cys
50 55 60

Leu Val Ala Thr Gly Thr His Glu Pro Lys Asn Gln Ser Tyr Met Val
65 70 75 80

Arg Gly Cys Ala Thr Ala Ser Met Cys Gln His Ala His Leu Gly Asp
85 90 95

Ala Phe Ser Met Asn His Ile Asp Val Ser Cys Cys Thr Lys Ser Gly
100 105 110

Cys Asn His Pro Asp Leu Asp Val Gln Tyr Arg Gly Gly Ser His His
115 120 125

His His His His Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln
130 135 140

Lys Ile Glu Trp His Glu
145 150

<210> 265
<211> 564
<212> PRT
<213> Artificial Sequence

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

<400> 265
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala

```
1               5                   10                  15

Thr Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu
            20                  25                  30

Tyr Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45

Gly Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe
    50                  55                  60

Gln Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr
65                  70                  75                  80

Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95

Thr Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115                 120                 125

Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140

Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160

Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175

Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190

Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly
    210                 215                 220
```

```
Gly Ser Gly Gly Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr
225                 230                 235                 240

Val Val Glu Leu Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val
                245                 250                 255

Leu Thr Cys Asp Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp
            260                 265                 270

Gln Ser Ser Glu Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val
        275                 280                 285

Lys Glu Phe Gly Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu
    290                 295                 300

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

Trp Ser Thr Asp Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr
                325                 330                 335

Phe Leu Arg Cys Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp
            340                 345                 350

Trp Leu Thr Thr Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser
        355                 360                 365

Arg Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu
    370                 375                 380

Ser Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val
385                 390                 395                 400

Glu Cys Gln Glu Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro
                405                 410                 415

Ile Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr
            420                 425                 430

Thr Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys
```

435 440 445

Asn Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser
450 455 460

Trp Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu
465 470 475 480

Thr Phe Ser Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp
485 490 495

Arg Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn
500 505 510

Ala Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp
515 520 525

Ser Glu Trp Ala Ser Val Pro Cys Ser Gly Gly Ser Gly Leu Asn Asp
530 535 540

Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His
545 550 555 560

His His His His

<210> 266
<211> 742
<212> PRT
<213> Artificial Sequence

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

<400> 266
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp

```
        35                  40                  45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65                  70                  75                  80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
                85                  90                  95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
            100                 105                 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
        115                 120                 125

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

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160

Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu
        195                 200                 205

Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala Thr
    210                 215                 220

Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr
225                 230                 235                 240

Ile Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly
                245                 250                 255
```

```
Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln
            260                 265                 270

Gly Arg Ala Thr Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu
        275                 280                 285

Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr
    290                 295                 300

Gly Gly Asn Tyr Val Gly Trp Phe Pro Tyr Trp Gly Gln Gly Thr Leu
305                 310                 315                 320

Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
                325                 330                 335

Gly Gly Gly Ser Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser
            340                 345                 350

Ala Ser Pro Gly Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser
        355                 360                 365

Val Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg
    370                 375                 380

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

Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser
                405                 410                 415

Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser
            420                 425                 430

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

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ser
    450                 455                 460

Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Glu Val Gln Leu Gln
```

```
465                 470                 475                 480

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

Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Glu Tyr Ile Asn Trp Val
            500                 505                 510

Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Trp Ile Asp Pro
        515                 520                 525

Glu Asn Gly Asp Thr Glu Tyr Ala Ser Lys Phe Gln Gly Arg Ala Thr
    530                 535                 540

Ile Thr Ala Asp Thr Ser Thr Asp Thr Ala Tyr Leu Glu Leu Ser Ser
545                 550                 555                 560

Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Thr Gly Gly Asn Tyr
                565                 570                 575

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

Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
        595                 600                 605

Gln Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Ala Ser Pro Gly
    610                 615                 620

Glu Arg Val Thr Met Ser Cys Ser Ala Ser Ser Ser Val Ser Tyr Met
625                 630                 635                 640

His Trp Tyr Gln Gln Lys Pro Gly Thr Ser Pro Arg Arg Trp Leu Tyr
                645                 650                 655

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser
            660                 665                 670

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu
        675                 680                 685
```

Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Trp Ser Ser Asn Pro Pro Tyr
690 695 700

Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Ser Gly Leu
705 710 715 720

Asn Asp Ile Phe Glu Ala Gln Lys Ile Glu Trp His Glu Gly Gly Ser
725 730 735

His His His His His His
740

<210> 267
<211> 560
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 267
Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp Phe
50 55 60

Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe Cys
85 90 95

Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr Val
100 105 110

```
Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser
        115                 120                 125

Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys
    130                 135                 140

Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu
145                 150                 155                 160

Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu
                165                 170                 175

Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
            180                 185                 190

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val
        195                 200                 205

Asp Lys Lys Val Glu Pro Lys Ser Cys Gly Gly Gly Gly Ser Gly Gly
    210                 215                 220

Gly Gly Ser Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu
225                 230                 235                 240

Asp Trp Tyr Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp
                245                 250                 255

Thr Pro Glu Glu Asp Gly Ile Thr Trp Thr Leu Asp Gln Ser Ser Glu
            260                 265                 270

Val Leu Gly Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly
        275                 280                 285

Asp Ala Gly Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His
    290                 295                 300

Ser Leu Leu Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp
305                 310                 315                 320

Ile Leu Lys Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys
```

```
                325                 330                 335

Glu Ala Lys Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr
            340                 345                 350

Ile Ser Thr Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser
        355                 360                 365

Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser Ala Glu Arg
    370                 375                 380

Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu
385                 390                 395                 400

Asp Ser Ala Ser Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met
                405                 410                 415

Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe
            420                 425                 430

Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu
        435                 440                 445

Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro
    450                 455                 460

Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Ser Val
465                 470                 475                 480

Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr
                485                 490                 495

Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser
            500                 505                 510

Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala
        515                 520                 525

Ser Val Pro Cys Ser Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala
    530                 535                 540
```

Gln Lys Ile Glu Trp His Glu Gly Gly Ser His His His His His His
545 550 555 560

<210> 268
<211> 734
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic polypeptide

<400> 268
Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Asp Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu Ala Cys Leu
50 55 60

Pro Leu Glu Leu Thr Lys Asn Glu Ser Lys Leu Asn Ser Arg Glu Thr
65 70 75 80

Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys Thr Ser Phe
85 90 95

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu
130 135 140

Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145 150 155 160

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Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175

Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asn Arg Val Met Ser
            180                 185                 190

Tyr Leu Asn Ala Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp
        195                 200                 205

Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp
    210                 215                 220

Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Ile Tyr Ser Asn Leu
225                 230                 235                 240

Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ser Pro Gln Leu Leu Val Tyr
                245                 250                 255

Ala Ala Thr Asn Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly Ser
            260                 265                 270

Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu
        275                 280                 285

Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Trp Thr
    290                 295                 300

Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Gly Gly Gly Gly Ser Gly
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ile Gln Leu Val Gln Ser
                325                 330                 335

Gly Ser Glu Leu Lys Lys Pro Gly Ala Ser Val Lys Ile Ser Cys Lys
            340                 345                 350

Ala Ser Gly Thr Thr Phe Thr Asp Tyr Gly Met Asn Trp Val Lys Gln
        355                 360                 365

Ser Pro Gly Lys Gly Leu Lys Trp Met Gly Trp Ile Asn Thr Asn Thr
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    370                 375                 380

Gly Glu Pro Thr Tyr Ala Glu Asp Phe Lys Gly Arg Phe Val Phe Ser
385                 390                 395                 400

Leu Asp Thr Ser Val Ser Thr Ala Tyr Leu Gln Ile Ser Ser Leu Lys
                405                 410                 415

Ala Glu Asp Thr Ala Thr Tyr Phe Cys Ala His Tyr Ser Phe Asp Tyr
            420                 425                 430

Trp Gly Gln Gly Thr Leu Leu Thr Val Ser Ser Gly Gly Ser Gly Gly
        435                 440                 445

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Ser Gly Gly Asp Ile Gln Met Thr Gln Ser Pro Ser
465                 470                 475                 480

Ser Leu Ser Ala Ser Val Gly Asp Thr Val Thr Ile Thr Cys Arg Thr
                485                 490                 495

Ser Glu Asn Ile Tyr Ser Asn Leu Ala Trp Tyr Gln Gln Lys Pro Gly
            500                 505                 510

Lys Ser Pro Gln Leu Leu Val Tyr Ala Ala Thr Asn Leu Ala Asp Gly
        515                 520                 525

Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Thr Leu
    530                 535                 540

Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Gly Thr Tyr Tyr Cys Gln
545                 550                 555                 560

His Phe Trp Gly Thr Pro Trp Thr Phe Gly Gly Gly Thr Lys Val Glu
                565                 570                 575

Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            580                 585                 590
```

```
Ser Gln Ile Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly
        595                 600                 605


Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Thr Thr Phe Thr Asp
    610                 615                 620


Tyr Gly Met Asn Trp Val Lys Gln Ser Pro Gly Lys Gly Leu Lys Trp
625                 630                 635                 640


Met Gly Trp Ile Asn Thr Asn Thr Gly Glu Pro Thr Tyr Ala Glu Asp
                645                 650                 655


Phe Lys Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala
            660                 665                 670


Tyr Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Thr Tyr Phe
        675                 680                 685


Cys Ala His Tyr Ser Phe Asp Tyr Trp Gly Gln Gly Thr Leu Leu Thr
    690                 695                 700


Val Ser Ser Gly Gly Ser Gly Leu Asn Asp Ile Phe Glu Ala Gln Lys
705                 710                 715                 720


Ile Glu Trp His Glu Gly Gly Ser His His His His His His
                725                 730


<210> 269
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide


<220>
<221> SITE
<222> (1)..(40)
<223> This sequence may encompass 1-10 "Gly Gly Gly Ser"
      repeating units

<400> 269
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Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
1   5   10   15

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
            20   25   30

Gly Gly Gly Ser Gly Gly Gly Ser
        35   40

<210> 270
<211> 50
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide

<220>
<221> SITE
<222> (1)..(50)
<223> This sequence may encompass 1-10 "Gly Gly Gly Gly Ser"
      repeating units

<400> 270
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1   5   10   15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
            20   25   30

Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
        35   40   45

Gly Ser
    50

<210> 271
<211> 70
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      polypeptide

<220>
<221> SITE
<222> (1)..(70)
<223> This sequence may encompass 1-10 "Ser Gly Gly Ser Gly Gly Gly"
repeating units

<400> 271
Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly
1 5 10 15

Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser
20 25 30

Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly
35 40 45

Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser
50 55 60

Gly Gly Ser Gly Gly Gly
65 70

<210> 272
<211> 70
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polypeptide

<220>
<221> SITE
<222> (1)..(70)
<223> This sequence may encompass 1-10 "Gly Gly Ser Gly Gly Ser Gly"
repeating units

<400> 272
Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly
1 5 10 15

Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly
20 25 30

Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser

```
        35                  40                  45

Gly Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Gly Gly Ser Gly Gly
    50                  55                  60

Gly Ser Gly Gly Ser Gly
65                  70

<210> 273
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<221> SITE
<222> (1)..(20)
<223> This sequence may encompass 2 or 4 "Gly Gly Gly Gly Ser"
      repeating units

<400> 273
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1               5                   10                  15

Gly Gly Gly Ser
            20
```