SEQUENCE LISTING

<110> PROCLARA BIOSCIENCES, INC.

<120> GENERAL AMYLOID INTERACTION MOTIF (GAIM)

<130> 12236.0009-00304

<140>
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<150> 62/749,499
<151> 2018-10-23

<150> 62/685,757
<151> 2018-06-15

<160> 54

<170> PatentIn version 3.5

<210> 1
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 1
Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn Ser
1 5 10 15

Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Arg Tyr Ala Asn
20 25 30

<210> 2
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 2
Ala Thr Thr Asp Ala Glu Cys Leu Ser Lys Pro Ala Phe Asp Gly Thr
1   5   10   15

Leu Ser Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn
            20   25   30

<210> 3
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

<400> 3
Asp Asp Lys Thr Leu Asp
1   5

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

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

<400> 4
Glu Gly Asp Ser
1

<210> 5
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

<400> 5

Phe Gln Asn Asn
1

<210> 6
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 6
Arg Gln Gly Ala
1

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

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 7
Gln Gly Thr Asp Pro Val Lys
1   5

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

<220>
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<223> /note="Description of Artificial Sequence: Synthetic peptide"

<400> 8
Phe Gln Gly Asn
1

<210> 9

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

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 9
Val Asn Gly Val
1

<210> 10
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
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<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 10
Gln Gly Gly Lys
1

<210> 11
<211> 487
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 11
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Arg Tyr Ala
20 25 30

Asn Tyr Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr
35 40 45

```
Gly Asp Glu Thr Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala
    50                  55                  60

Ile Pro Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
65                  70                  75                  80

Gly Gly Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr
                85                  90                  95

Pro Ile Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro
            100                 105                 110

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

Ser Gln Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn
    130                 135                 140

Arg Gln Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr
145                 150                 155                 160

Asp Pro Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala
                165                 170                 175

Met Tyr Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His
            180                 185                 190

Ser Gly Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser
        195                 200                 205

Ser Asp Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
225                 230                 235                 240
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```
Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
                245                 250                 255

Gly Ala Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro
            260                 265                 270

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        275                 280                 285

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    290                 295                 300

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
305                 310                 315                 320

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
                325                 330                 335

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            340                 345                 350

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
        355                 360                 365

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    370                 375                 380

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
385                 390                 395                 400

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                405                 410                 415

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            420                 425                 430

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        435                 440                 445
```

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
    450   455   460

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
465   470   475   480

Leu Ser Leu Ser Pro Gly Lys
                485

<210> 12
<211> 257
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 12
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1   5   10   15

Ser Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Arg Tyr Ala
            20   25   30

Asn Tyr Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr
        35   40   45

Gly Asp Glu Thr Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala
    50   55   60

Ile Pro Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
65   70   75   80

Gly Gly Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr
                85   90   95

Pro Ile Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro

```
            100                 105                 110

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

Ser Gln Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn
    130                 135                 140

Arg Gln Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr
145                 150                 155                 160

Asp Pro Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala
                165                 170                 175

Met Tyr Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His
            180                 185                 190

Ser Gly Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser
        195                 200                 205

Ser Asp Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
225                 230                 235                 240

Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
                245                 250                 255

Gly
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<210> 13
<211> 487
<212> PRT
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 13
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Arg Tyr Ala
20 25 30

Asn Tyr Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr
35 40 45

Gly Asp Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala
50 55 60

Ile Pro Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
65 70 75 80

Gly Gly Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr
85 90 95

Pro Ile Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro
100 105 110

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

Ser Gln Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn
130 135 140

Arg Gln Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr
145 150 155 160

Asp Pro Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala
165 170 175

Met Tyr Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His
180 185 190

```
Ser Gly Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser
        195                 200                 205

Ser Asp Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
225                 230                 235                 240

Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
                245                 250                 255

Gly Ala Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro
            260                 265                 270

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        275                 280                 285

Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    290                 295                 300

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
305                 310                 315                 320

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
                325                 330                 335

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            340                 345                 350

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
        355                 360                 365

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    370                 375                 380
```

```
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
385                 390                 395                 400


Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                405                 410                 415


Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            420                 425                 430


Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        435                 440                 445


Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
    450                 455                 460


Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
465                 470                 475                 480


Leu Ser Leu Ser Pro Gly Lys
                485


<210> 14
<211> 257
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 14
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15


Ser Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Arg Tyr Ala
            20                  25                  30


Asn Tyr Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr
        35                  40                  45
```

```
Gly Asp Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala
    50                  55                  60

Ile Pro Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
65                  70                  75                  80

Gly Gly Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr
                85                  90                  95

Pro Ile Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro
            100                 105                 110

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

Ser Gln Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn
    130                 135                 140

Arg Gln Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr
145                 150                 155                 160

Asp Pro Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala
                165                 170                 175

Met Tyr Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His
            180                 185                 190

Ser Gly Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser
        195                 200                 205

Ser Asp Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
225                 230                 235                 240

Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
```

245 250 255

Gly

<210> 15
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 15
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

```
Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335
```

```
Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480

Leu Ser Pro Gly Lys
                485
```

<210> 16
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic

polypeptide"

<400> 16
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1   5   10   15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20   25   30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35   40   45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
    50   55   60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65   70   75   80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85   90   95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100   105   110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115   120   125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn Arg Gln
    130   135   140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145   150   155   160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165   170   175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180   185   190

```
Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205


Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220


Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240


Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
                245                 250                 255


<210> 17
<211> 487
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 17
Met Ala Glu Thr Val Glu Ser Ser Leu Ala Lys Pro His Ile Glu Gly
1               5                   10                  15


Ser Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Trp Tyr Ala
            20                  25                  30


Asn Tyr Glu Gly Ile Leu Trp Lys Ala Thr Gly Val Val Val Ile Thr
        35                  40                  45


Gly Asp Glu Thr Gln Val Tyr Ala Ile Trp Val Pro Val Gly Leu Ala
    50                  55                  60


Ile Pro Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
65                  70                  75                  80


Gly Gly Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr
                85                  90                  95
```

```
Pro Ile Pro Gly Tyr Ile Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro
            100                 105                 110

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

Ser His Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn
    130                 135                 140

Arg Gln Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr
145                 150                 155                 160

Asp Pro Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala
                165                 170                 175

Met Tyr Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Val Ala Phe His
            180                 185                 190

Ser Gly Phe Asn Glu Asp Pro Leu Val Ala Glu Tyr Gln Gly Gln Leu
        195                 200                 205

Ser Tyr Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
225                 230                 235                 240

Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
                245                 250                 255

Gly Ala Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro
            260                 265                 270

Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
        275                 280                 285
```

```
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
    290                 295                 300

Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
305                 310                 315                 320

Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
                325                 330                 335

Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
            340                 345                 350

Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
        355                 360                 365

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
    370                 375                 380

Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
385                 390                 395                 400

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
                405                 410                 415

Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
            420                 425                 430

Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
        435                 440                 445

Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
    450                 455                 460

Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
465                 470                 475                 480

Leu Ser Leu Ser Pro Gly Lys
                485
```

<210> 18
<211> 257
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 18
Met Ala Glu Thr Val Glu Ser Ser Leu Ala Lys Pro His Ile Glu Gly
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Asp Asp Lys Thr Leu Asp Trp Tyr Ala
20 25 30

Asn Tyr Glu Gly Ile Leu Trp Lys Ala Thr Gly Val Val Val Ile Thr
35 40 45

Gly Asp Glu Thr Gln Val Tyr Ala Ile Trp Val Pro Val Gly Leu Ala
50 55 60

Ile Pro Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
65 70 75 80

Gly Gly Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr
85 90 95

Pro Ile Pro Gly Tyr Ile Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro
100 105 110

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

Ser His Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn
130 135 140

Arg Gln Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr

```
145                 150                 155                 160

Asp Pro Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala
                165                 170                 175

Met Tyr Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Val Ala Phe His
            180                 185                 190

Ser Gly Phe Asn Glu Asp Pro Leu Val Ala Glu Tyr Gln Gly Gln Leu
        195                 200                 205

Ser Tyr Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly
    210                 215                 220

Gly Ser Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser
225                 230                 235                 240

Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser
                245                 250                 255

Gly
```

<210> 19
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 19

```
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20                  25                  30
```

```
Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240
```

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
245 250 255

<210> 20
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 20
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn Val Asn

```
    130                 135                 140

Gly Val Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
                245                 250                 255


<210> 21
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 21
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20                  25                  30
```

```
Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Ala Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240
```

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
245 250 255

<210> 22
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 22
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Ala Val Asn

```
    130                 135                 140

Gly Val Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
                245                 250                 255


<210> 23
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 23
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20                  25                  30
```

```
Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Ala Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240
```

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
245 250 255

<210> 24
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 24
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Ala Val Asn

```
    130                 135                 140

Gly Val Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
                245                 250                 255


<210> 25
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 25
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20                  25                  30
```

```
Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240
```

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
245 250 255

<210> 26
<211> 255
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 26
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Ala Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn Arg Gln

```
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly
                245                 250                 255


<210> 27
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

<400> 27
Gly Gly Gly Gly Ser
1               5


<210> 28
<211> 4
<212> PRT
<213> Artificial Sequence
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<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
peptide"

<400> 28
Gly Gly Gly Ser
1

<210> 29
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 29
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

```
Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320
```

```
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480

Leu Ser Pro Gly Lys
                485
```

<210> 30
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 30
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Asn Val Asn
130 135 140

Gly Val Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145 150 155 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
165 170 175

```
Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
```

370 375 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
405 410 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
420 425 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
435 440 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
450 455 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465 470 475 480

Leu Ser Pro Gly Lys
485

<210> 31
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 31
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

```
Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45

Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Ala Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240
```

```
Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430
```

```
Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445


Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460


Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480


Leu Ser Pro Gly Lys
                485


<210> 32
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      polypeptide"

<400> 32
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15


Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20                  25                  30


Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45


Glu Thr Gln Cys Tyr Gly His Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60


Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80


Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95
```

```
Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Ala Val Asn
    130                 135                 140

Gly Val Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
```

```
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480

Leu Ser Pro Gly Lys
                485
```

<210> 33
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 33
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Ala Arg Gln
130 135 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145 150 155 160

```
Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350
```

```
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480

Leu Ser Pro Gly Lys
                485
```

<210> 34
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polypeptide"

<400> 34

```
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1               5                   10                  15
```

```
Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
            20                  25                  30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
        35                  40                  45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
    50                  55                  60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65                  70                  75                  80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Asn Asn Arg Phe Arg Ala Val Asn
    130                 135                 140

Gly Val Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
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    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415
```

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
420 425 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
435 440 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
450 455 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465 470 475 480

Leu Ser Pro Gly Lys
485

<210> 35
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 35
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Asn Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

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Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
                85                  90                  95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
            100                 105                 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
        115                 120                 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn Arg Gln
    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270
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Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
        275                 280                 285

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480
```

Leu Ser Pro Gly Lys
485

<210> 36
<211> 485
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polypeptide"

<400> 36
Met Ala Glu Thr Val Glu Ser Cys Leu Ala Lys Pro His Thr Glu Asn
1 5 10 15

Ser Phe Thr Asn Val Trp Lys Glu Gly Asp Ser Arg Tyr Ala Asn Tyr
20 25 30

Glu Gly Cys Leu Trp Ala Ala Gly Gly Val Val Val Cys Thr Gly Asp
35 40 45

Glu His Gln Cys Tyr Gly Thr Trp Val Pro Ile Gly Leu Ala Ile Pro
50 55 60

Glu Asn Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly
65 70 75 80

Ser Glu Gly Gly Gly Thr Lys Pro Pro Glu Tyr Gly Asp Thr Pro Ile
85 90 95

Pro Gly Tyr Thr Tyr Ile Asn Pro Leu Asp Gly Thr Tyr Pro Pro Gly
100 105 110

Thr Glu Gln Asn Pro Ala Asn Pro Asn Pro Ser Leu Glu Glu Ser Gln
115 120 125

Pro Leu Asn Thr Phe Met Phe Gln Gly Asn Arg Phe Arg Asn Arg Gln

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    130                 135                 140

Gly Ala Leu Thr Val Tyr Thr Gly Thr Phe Thr Gln Gly Thr Asp Pro
145                 150                 155                 160

Val Lys Thr Tyr Tyr Gln Tyr Thr Pro Val Ser Ser Arg Ala Met Tyr
                165                 170                 175

Asp Ala Tyr Trp Asn Gly Lys Phe Arg Asp Cys Ala Phe His Ser Gly
            180                 185                 190

Phe Asn Glu Asp Pro Phe Val Cys Glu Tyr Gln Gly Gln Ser Ser Asp
        195                 200                 205

Leu Pro Gln Pro Pro Ala Asn Ala Gly Gly Glu Ser Gly Gly Gly Ser
    210                 215                 220

Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly Gly Gly Ser Glu Gly
225                 230                 235                 240

Gly Gly Ser Glu Gly Gly Gly Ser Gly Gly Gly Ser Gly Ser Gly Ala
                245                 250                 255

Arg Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu
            260                 265                 270

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

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
    290                 295                 300

Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val
305                 310                 315                 320

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser
                325                 330                 335
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Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
            340                 345                 350

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
        355                 360                 365

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
    370                 375                 380

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

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
                405                 410                 415

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
            420                 425                 430

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
        435                 440                 445

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser
    450                 455                 460

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
465                 470                 475                 480

Leu Ser Pro Gly Lys
                485
```

<210> 37
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<400> 37
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

aggaacagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 38
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 38
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaaaa caaccgcttc 420

aggaacgtga acggagtgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caaccccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 39
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 39
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

agggctagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caaccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 40
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 40
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaaaa caaccgcttc 420

agggccgtga acggagtgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caaccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 41
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 41
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagcac cagtgctacg gaacttgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

agggctagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 42
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 42
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagcac cagtgctacg gaacttgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaaaa caaccgcttc 420

agggccgtga acggagtgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 43
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 43
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagcat cagtgctacg gaacctgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

aggaacagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 44
<211> 765
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 44
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg ggccgccggt 120

ggagtggtcg tctgcaccgg ggatgagcat cagtgctacg gaacctgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

aggaacagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cggga 765

<210> 45
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 45
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

aggaacagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttcccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 46
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 46
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaaaa caaccgcttc 420

aggaacgtga acggagtgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttcccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 47
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 47
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

agggctagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttccccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 48
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 48
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagact cagtgctacg gacactgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaaaa caaccgcttc 420

agggccgtga acggagtgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttcccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 49
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source

<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 49
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagcac cagtgctacg gaacttgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

agggctagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttcccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 50
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 50
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcaccgg ggatgagcac cagtgctacg gaacttgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaaaa caaccgcttc 420

agggccgtga acggagtgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttccccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 51
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 51
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg gaacgccggt 120

ggagtggtcg tctgcactgg ggatgagcac cagtgctacg gaacctgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

aggaacagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccctg caaacgccgg cggagaatcc 660

ggaggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttccccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 52
<211> 1458
<212> DNA
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
polynucleotide"

<400> 52
atggccgaaa ccgtggaatc atgtctggcg aagccccata ccgagaactc cttcaccaac 60

gtctggaaag agggcgacag ccgctacgcc aactacgagg gctgcctgtg ggccgccggt 120

ggagtggtcg tctgcactgg ggatgagcac cagtgctacg gaacctgggt gcctatcgga 180

ctggccattc ccgagaacga ggggggtggt agcgaaggcg gcggatcgga aggcggagga 240

tctgagggag ggggaaccaa gcctccggaa tacggcgaca ctccgatccc cgggtatacg 300

tacatcaatc cgctggacgg gacctacccg cctggaactg agcagaaccc ggccaaccca 360

aaccctagcc tcgaggaatc ccagccgttg aacaccttca tgttccaagg gaaccgcttc 420

aggaacagac agggagcgct gaccgtgtac actggcacct tcacacaagg caccgacccc 480

gtcaagacct actaccagta cactcctgtg tcctcgcggg ctatgtacga tgcgtactgg 540

aatgggaagt ttcgggactg cgctttccac tccggcttca acgaggatcc attcgtgtgc 600

gaatatcagg gccagagctc cgacctcccc caacccccctg caaacgccgg cggagaatcc 660

ggagggggat caggaggcgg aagcgaaggg ggtggatccg aaggaggcgg atccgagggt 720

ggaggctccg aaggggggagg ctctggtggt ggctccggat cgggagccag atctgacaaa 780

actcacacat gcccaccgtg cccagcacct gaactcctgg ggggaccgtc agtcttcctc 840

ttcccccaa aacccaagga caccctcatg atctcccgga cccctgaggt cacatgcgtg 900

gtggtggacg tgagccacga agaccctgag gtcaagttca actggtacgt ggacggcgtg 960

gaggtgcata atgccaagac aaagccgcgg gaggagcagt acaacagcac gtaccgtgtg 1020

gtcagcgtcc tcaccgtcct gcaccaggac tggctgaatg gcaaggagta caagtgcaag 1080

gtctccaaca aagccctccc agcccccatc gagaaaacca tctccaaagc caaagggcag 1140

ccccgagaac cacaggtgta caccctgccc ccatcccggg aggagatgac caagaaccag 1200

gtcagcctga cctgcctggt caaaggcttc tatcccagcg acatcgccgt ggagtgggag 1260

agcaatgggc agccggagaa caactacaag accacgcctc ccgtgctgga ctccgacggc 1320

tccttcttcc tctacagcaa gctcaccgtg gacaagagca ggtggcagca ggggaacgtc 1380

ttctcatgct ccgtgatgca cgaggctctg cacaaccact acacgcagaa gagcctctcc 1440

ctgtctccgg gtaaatga 1458

<210> 53
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
6xHis tag"

<400> 53
His His His His His His
1   5

<210> 54
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<221> source
<223> /note="Description of Artificial Sequence: Synthetic
      peptide"

<400> 54
Glu Asp Gly Ser
1