SEQUENCE LISTING

<110> GENENTECH, INC., et al.

<120> ANTI-LRP6 ANTOBODIES

<130> P4430R1-WO

<150> US 61/394,836
<151> 2010-10-20

<150> US 61/317,137
<151> 2010-03-24

<160> 58

<170> PatentIn version 3.5

<210> 1
<211> 456
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<400> 1

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
100 105 110

Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
115 120 125

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

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

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Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
                165                 170                 175

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
            180                 185                 190

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
        195                 200                 205

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

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
225                 230                 235                 240

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
                245                 250                 255

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            260                 265                 270

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

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    290                 295                 300

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
305                 310                 315                 320

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
                325                 330                 335

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

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
        355                 360                 365

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
    370                 375                 380

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
385                 390                 395                 400

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

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

Ser Leu Ser Leu Ser Pro Gly Lys
450 455

<210> 2
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<213> Artificial Sequence

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<400> 2

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

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

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<212> PRT
<213> Artificial Sequence

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<223> Synthetic polypeptide

<400> 3

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu Tyr Pro Arg Gly Ser Val
100 105 110

Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
115 120 125

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

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

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
165 170 175

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
180 185 190

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
195 200 205

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

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
225                 230                 235                 240

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
                245                 250                 255

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            260                 265                 270

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

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    290                 295                 300

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
305                 310                 315                 320

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
                325                 330                 335

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

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
        355                 360                 365

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
    370                 375                 380

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
385                 390                 395                 400

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

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
            420                 425                 430

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
        435                 440                 445

Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455
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<210> 4
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 4

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

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 5
<211> 456
<212> PRT
<213> Artificial Sequence

<220>

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<400> 5

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
            100                 105                 110

Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
        115                 120                 125

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

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

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
                165                 170                 175

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
            180                 185                 190

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
        195                 200                 205

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

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
225                 230                 235                 240

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
                245                 250                 255
```

```
Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            260                 265                 270

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

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    290                 295                 300

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
305                 310                 315                 320

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
                325                 330                 335

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

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
        355                 360                 365

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
    370                 375                 380

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
385                 390                 395                 400

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

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
            420                 425                 430

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
        435                 440                 445

Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455


<210>  6
<211>  214
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic polypeptide

<400>  6

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

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
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```

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

<220>
<223> Synthetic polypeptide

<400> 7

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

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

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

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

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

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

Ala Arg Gly Ser Gly His Val Asn Ala Val Lys Asn Tyr Gly Tyr Val
            100                 105                 110

Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
        115                 120                 125

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

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

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
                165                 170                 175

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
            180                 185                 190

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
        195                 200                 205

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

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
225                 230                 235                 240

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
                245                 250                 255

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            260                 265                 270

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

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    290                 295                 300
```

```
Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
305                 310                 315                 320

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
                325                 330                 335

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

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
        355                 360                 365

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
    370                 375                 380

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
385                 390                 395                 400

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

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
            420                 425                 430

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
        435                 440                 445

Ser Leu Ser Leu Ser Pro Gly Lys
    450                 455
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<210> 8
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 8

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

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
    210
```

<210> 9
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 9

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
100 105 110

Met Asp Tyr Trp Gly Gln
115

<210> 10
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 10

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

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

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

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

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

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

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

<210> 11
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 11

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu Tyr Pro Arg Gly Ser Val
100 105 110

Met Asp Tyr Trp Gly Gln
115

<210> 12
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 12

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

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

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

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

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

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

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

<210> 13
<211> 118
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<400> 13

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
            100                 105                 110

Met Asp Tyr Trp Gly Gln
        115
```

<210> 14
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 14

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

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

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

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

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

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

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

<210> 15
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 15

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

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

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

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

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

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

Ala Arg Gly Ser Gly His Val Asn Ala Val Lys Asn Tyr Gly Tyr Val
100 105 110

Met Asp Tyr Trp Gly Gln
115

<210> 16
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 16

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

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

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

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

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

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

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

<210> 17
<211> 5
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<220>
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<400> 17

Ser Tyr Tyr Ile Ser
1 5

<210> 18
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 18

Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 19
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 19

Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
1 5 10

<210> 20
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<220>
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<400> 20

Tyr Tyr Tyr Ile Ser
1 5

<210> 21
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<220>
<223> Synthetic polypeptide

<400> 21

Arg Ala Arg Pro Pro Ile Arg Leu Tyr Pro Arg Gly Ser Val
1 5 10

<210> 22
<211> 5
<212> PRT
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<400> 22

Asn Ser Tyr Ile His
1 5

<210> 23
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 23

Trp Ile Thr Pro Tyr Gly Gly Tyr Thr Asn Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 24
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 24

Gly Ser Gly His Val Asn Ala Val Lys Asn Tyr Gly Tyr Val
1 5 10

<210> 25
<211> 11
<212> PRT
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<220>
<223> Synthetic polypeptide

<400> 25

Arg Ala Ser Gln Asp Val Ser Thr Ala Val Ala
1 5 10

<210> 26
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 26

Ser Ala Ser Phe Leu Tyr Ser
1 5

<210> 27
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 27

Gln Gln Ser Tyr Thr Thr Pro Pro Thr
1 5

<210> 28
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 28

Gln Gln Ser Tyr Thr Leu Pro Thr Thr
1 5

<210> 29
<211> 1613
<212> PRT
<213> Homo sapiens

<400> 29

Met Gly Ala Val Leu Arg Ser Leu Leu Ala Cys Ser Phe Cys Val Leu
1 5 10 15

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Leu Arg Ala Ala Pro Leu Leu Leu Tyr Ala Asn Arg Arg Asp Leu Arg
            20                  25                  30

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

Gly Leu Glu Asp Ala Ala Ala Val Asp Phe Val Phe Ser His Gly Leu
    50                  55                  60

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

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

Pro Asp Gly Leu Ala Cys Asp Trp Leu Gly Glu Lys Leu Tyr Trp Thr
            100                 105                 110

Asp Ser Glu Thr Asn Arg Ile Glu Val Ser Asn Leu Asp Gly Ser Leu
        115                 120                 125

Arg Lys Val Leu Phe Trp Gln Glu Leu Asp Gln Pro Arg Ala Ile Ala
    130                 135                 140

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

Pro Lys Ile Glu Arg Ala Gly Met Asp Gly Ser Ser Arg Phe Ile Ile
                165                 170                 175

Ile Asn Ser Glu Ile Tyr Trp Pro Asn Gly Leu Thr Leu Asp Tyr Glu
            180                 185                 190

Glu Gln Lys Leu Tyr Trp Ala Asp Ala Lys Leu Asn Phe Ile His Lys
        195                 200                 205

Ser Asn Leu Asp Gly Thr Asn Arg Gln Ala Val Val Lys Gly Ser Leu
    210                 215                 220

Pro His Pro Phe Ala Leu Thr Leu Phe Glu Asp Ile Leu Tyr Trp Thr
225                 230                 235                 240

Asp Trp Ser Thr His Ser Ile Leu Ala Cys Asn Lys Tyr Thr Gly Glu
                245                 250                 255

Gly Leu Arg Glu Ile His Ser Asp Ile Phe Ser Pro Met Asp Ile His
            260                 265                 270

Ala Phe Ser Gln Gln Arg Gln Pro Asn Ala Thr Asn Pro Cys Gly Ile
        275                 280                 285
```

```
Asp Asn Gly Gly Cys Ser His Leu Cys Leu Met Ser Pro Val Lys Pro
    290                 295                 300

Phe Tyr Gln Cys Ala Cys Pro Thr Gly Val Lys Leu Leu Glu Asn Gly
305                 310                 315                 320

Lys Thr Cys Lys Asp Gly Ala Thr Glu Leu Leu Leu Leu Ala Arg Arg
                325                 330                 335

Thr Asp Leu Arg Arg Ile Ser Leu Asp Thr Pro Asp Phe Thr Asp Ile
            340                 345                 350

Val Leu Gln Leu Glu Asp Ile Arg His Ala Ile Ala Ile Asp Tyr Asp
        355                 360                 365

Pro Val Glu Gly Tyr Ile Tyr Trp Thr Asp Asp Glu Val Arg Ala Ile
    370                 375                 380

Arg Arg Ser Phe Ile Asp Gly Ser Gly Ser Gln Phe Val Val Thr Ala
385                 390                 395                 400

Gln Ile Ala His Pro Asp Gly Ile Ala Val Asp Trp Val Ala Arg Asn
                405                 410                 415

Leu Tyr Trp Thr Asp Thr Gly Thr Asp Arg Ile Glu Val Thr Arg Leu
            420                 425                 430

Asn Gly Thr Met Arg Lys Ile Leu Ile Ser Glu Asp Leu Glu Glu Pro
        435                 440                 445

Arg Ala Ile Val Leu Asp Pro Met Val Gly Tyr Met Tyr Trp Thr Asp
    450                 455                 460

Trp Gly Glu Ile Pro Lys Ile Glu Arg Ala Ala Leu Asp Gly Ser Asp
465                 470                 475                 480

Arg Val Val Leu Val Asn Thr Ser Leu Gly Trp Pro Asn Gly Leu Ala
                485                 490                 495

Leu Asp Tyr Asp Glu Gly Lys Ile Tyr Trp Gly Asp Ala Lys Thr Asp
            500                 505                 510

Lys Ile Glu Val Met Asn Thr Asp Gly Thr Gly Arg Arg Val Leu Val
        515                 520                 525

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

Val Tyr Trp Thr Asp Trp Gln Arg Arg Ser Ile Glu Arg Val His Lys
545                 550                 555                 560
```

```
Arg Ser Ala Glu Arg Glu Val Ile Ile Asp Gln Leu Pro Asp Leu Met
                565                 570                 575

Gly Leu Lys Ala Thr Asn Val His Arg Val Ile Gly Ser Asn Pro Cys
            580                 585                 590

Ala Glu Glu Asn Gly Gly Cys Ser His Leu Cys Leu Tyr Arg Pro Gln
        595                 600                 605

Gly Leu Arg Cys Ala Cys Pro Ile Gly Phe Glu Leu Ile Ser Asp Met
    610                 615                 620

Lys Thr Cys Ile Val Pro Glu Ala Phe Leu Leu Phe Ser Arg Arg Ala
625                 630                 635                 640

Asp Ile Arg Arg Ile Ser Leu Glu Thr Asn Asn Asn Asn Val Ala Ile
                645                 650                 655

Pro Leu Thr Gly Val Lys Glu Ala Ser Ala Leu Asp Phe Asp Val Thr
            660                 665                 670

Asp Asn Arg Ile Tyr Trp Thr Asp Ile Ser Leu Lys Thr Ile Ser Arg
        675                 680                 685

Ala Phe Met Asn Gly Ser Ala Leu Glu His Val Val Glu Phe Gly Leu
    690                 695                 700

Asp Tyr Pro Glu Gly Met Ala Val Asp Trp Leu Gly Lys Asn Leu Tyr
705                 710                 715                 720

Trp Ala Asp Thr Gly Thr Asn Arg Ile Glu Val Ser Lys Leu Asp Gly
                725                 730                 735

Gln His Arg Gln Val Leu Val Trp Lys Asp Leu Asp Ser Pro Arg Ala
            740                 745                 750

Leu Ala Leu Asp Pro Ala Glu Gly Phe Met Tyr Trp Thr Glu Trp Gly
        755                 760                 765

Gly Lys Pro Lys Ile Asp Arg Ala Ala Met Asp Gly Ser Glu Arg Thr
    770                 775                 780

Thr Leu Val Pro Asn Val Gly Arg Ala Asn Gly Leu Thr Ile Asp Tyr
785                 790                 795                 800

Ala Lys Arg Arg Leu Tyr Trp Thr Asp Leu Asp Thr Asn Leu Ile Glu
                805                 810                 815

Ser Ser Asn Met Leu Gly Leu Asn Arg Glu Val Ile Ala Asp Asp Leu
            820                 825                 830
```

```
Pro His Pro Phe Gly Leu Thr Gln Tyr Gln Asp Tyr Ile Tyr Trp Thr
        835                 840                 845

Asp Trp Ser Arg Arg Ser Ile Glu Arg Ala Asn Lys Thr Ser Gly Gln
    850                 855                 860

Asn Arg Thr Ile Ile Gln Gly His Leu Asp Tyr Val Met Asp Ile Leu
865                 870                 875                 880

Val Phe His Ser Ser Arg Gln Ser Gly Trp Asn Glu Cys Ala Ser Ser
                885                 890                 895

Asn Gly His Cys Ser His Leu Cys Leu Ala Val Pro Val Gly Gly Phe
            900                 905                 910

Val Cys Gly Cys Pro Ala His Tyr Ser Leu Asn Ala Asp Asn Arg Thr
        915                 920                 925

Cys Ser Ala Pro Thr Thr Phe Leu Leu Phe Ser Gln Lys Ser Ala Ile
    930                 935                 940

Asn Arg Met Val Ile Asp Glu Gln Gln Ser Pro Asp Ile Ile Leu Pro
945                 950                 955                 960

Ile His Ser Leu Arg Asn Val Arg Ala Ile Asp Tyr Asp Pro Leu Asp
                965                 970                 975

Lys Gln Leu Tyr Trp Ile Asp Ser Arg Gln Asn Met Ile Arg Lys Ala
            980                 985                 990

Gln Glu Asp Gly Ser Gln Gly Phe  Thr Val Val Val Ser  Ser Val Pro
        995                 1000                1005

Ser Gln  Asn Leu Glu Ile Gln  Pro Tyr Asp Leu Ser  Ile Asp Ile
    1010                1015                1020

Tyr Ser  Arg Tyr Ile Tyr Trp  Thr Cys Glu Ala Thr  Asn Val Ile
    1025                1030                1035

Asn Val  Thr Arg Leu Asp Gly  Arg Ser Val Gly Val  Val Leu Lys
    1040                1045                1050

Gly Glu  Gln Asp Arg Pro Arg  Ala Ile Val Val Asn  Pro Glu Lys
    1055                1060                1065

Gly Tyr  Met Tyr Phe Thr Asn  Leu Gln Glu Arg Ser  Pro Lys Ile
    1070                1075                1080

Glu Arg  Ala Ala Leu Asp Gly  Thr Glu Arg Glu Val  Leu Phe Phe
    1085                1090                1095
```

```
Ser Gly  Leu Ser Lys Pro Ile  Ala Leu Ala Leu Asp  Ser Arg Leu
    1100                 1105                 1110

Gly Lys  Leu Phe Trp Ala Asp  Ser Asp Leu Arg Arg  Ile Glu Ser
    1115                 1120                 1125

Ser Asp  Leu Ser Gly Ala Asn  Arg Ile Val Leu Glu  Asp Ser Asn
    1130                 1135                 1140

Ile Leu  Gln Pro Val Gly Leu  Thr Val Phe Glu Asn  Trp Leu Tyr
    1145                 1150                 1155

Trp Ile  Asp Lys Gln Gln Gln  Met Ile Glu Lys Ile  Asp Met Thr
    1160                 1165                 1170

Gly Arg  Glu Gly Arg Thr Lys  Val Gln Ala Arg Ile  Ala Gln Leu
    1175                 1180                 1185

Ser Asp  Ile His Ala Val Lys  Glu Leu Asn Leu Gln  Glu Tyr Arg
    1190                 1195                 1200

Gln His  Pro Cys Ala Gln Asp  Asn Gly Gly Cys Ser  His Ile Cys
    1205                 1210                 1215

Leu Val  Lys Gly Asp Gly Thr  Thr Arg Cys Ser Cys  Pro Met His
    1220                 1225                 1230

Leu Val  Leu Leu Gln Asp Glu  Leu Ser Cys Gly Glu  Pro Pro Thr
    1235                 1240                 1245

Cys Ser  Pro Gln Gln Phe Thr  Cys Phe Thr Gly Glu  Ile Asp Cys
    1250                 1255                 1260

Ile Pro  Val Ala Trp Arg Cys  Asp Gly Phe Thr Glu  Cys Glu Asp
    1265                 1270                 1275

His Ser  Asp Glu Leu Asn Cys  Pro Val Cys Ser Glu  Ser Gln Phe
    1280                 1285                 1290

Gln Cys  Ala Ser Gly Gln Cys  Ile Asp Gly Ala Leu  Arg Cys Asn
    1295                 1300                 1305

Gly Asp  Ala Asn Cys Gln Asp  Lys Ser Asp Glu Lys  Asn Cys Glu
    1310                 1315                 1320

Val Leu  Cys Leu Ile Asp Gln  Phe Arg Cys Ala Asn  Gly Gln Cys
    1325                 1330                 1335

Ile Gly  Lys His Lys Lys Cys  Asp His Asn Val Asp  Cys Ser Asp
    1340                 1345                 1350
```

```
Lys Ser  Asp Glu Leu Asp Cys  Tyr Pro Thr Glu Glu  Pro Ala Pro
    1355                 1360                 1365

Gln Ala  Thr Asn Thr Val Gly  Ser Val Ile Gly Val  Ile Val Thr
    1370                 1375                 1380

Ile Phe  Val Ser Gly Thr Val  Tyr Phe Ile Cys Gln  Arg Met Leu
    1385                 1390                 1395

Cys Pro  Arg Met Lys Gly Asp  Gly Glu Thr Met Thr  Asn Asp Tyr
    1400                 1405                 1410

Val Val  His Gly Pro Ala Ser  Val Pro Leu Gly Tyr  Val Pro His
    1415                 1420                 1425

Pro Ser  Ser Leu Ser Gly Ser  Leu Pro Gly Met Ser  Arg Gly Lys
    1430                 1435                 1440

Ser Met  Ile Ser Ser Leu Ser  Ile Met Gly Gly Ser  Ser Gly Pro
    1445                 1450                 1455

Pro Tyr  Asp Arg Ala His Val  Thr Gly Ala Ser Ser  Ser Ser Ser
    1460                 1465                 1470

Ser Ser  Thr Lys Gly Thr Tyr  Phe Pro Ala Ile Leu  Asn Pro Pro
    1475                 1480                 1485

Pro Ser  Pro Ala Thr Glu Arg  Ser His Tyr Thr Met  Glu Phe Gly
    1490                 1495                 1500

Tyr Ser  Ser Asn Ser Pro Ser  Thr His Arg Ser Tyr  Ser Tyr Arg
    1505                 1510                 1515

Pro Tyr  Ser Tyr Arg His Phe  Ala Pro Pro Thr Thr  Pro Cys Ser
    1520                 1525                 1530

Thr Asp  Val Cys Asp Ser Asp  Tyr Ala Pro Ser Arg  Arg Met Thr
    1535                 1540                 1545

Ser Val  Ala Thr Ala Lys Gly  Tyr Thr Ser Asp Leu  Asn Tyr Asp
    1550                 1555                 1560

Ser Glu  Pro Val Pro Pro Pro  Pro Thr Pro Arg Ser  Gln Tyr Leu
    1565                 1570                 1575

Ser Ala  Glu Glu Asn Tyr Glu  Ser Cys Pro Pro Ser  Pro Tyr Thr
    1580                 1585                 1590

Glu Arg  Ser Tyr Ser His His  Leu Tyr Pro Pro Pro  Pro Ser Pro
    1595                 1600                 1605
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Cys Thr Asp Ser Ser
1610

<210> 30
<211> 890
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 30

Met Gly Gly Thr Ala Ala Arg Leu Gly Ala Val Ile Leu Phe Val Val
1 5 10 15

Ile Val Gly Leu His Gly Val Arg Gly Lys Gly Ser Ala Ala Pro Leu
20 25 30

Leu Leu Tyr Ala Asn Arg Arg Asp Leu Arg Leu Val Asp Ala Thr Asn
35 40 45

Gly Lys Glu Asn Ala Thr Ile Val Val Gly Gly Leu Glu Asp Ala Ala
50 55 60

Ala Val Asp Phe Val Phe Ser His Gly Leu Ile Tyr Trp Ser Asp Val
65 70 75 80

Ser Glu Glu Ala Ile Lys Arg Thr Glu Phe Asn Lys Thr Glu Ser Val
85 90 95

Gln Asn Val Val Val Ser Gly Leu Leu Ser Pro Asp Gly Leu Ala Cys
100 105 110

Asp Trp Leu Gly Glu Lys Leu Tyr Trp Thr Asp Ser Glu Thr Asn Arg
115 120 125

Ile Glu Val Ser Asn Leu Asp Gly Ser Leu Arg Lys Val Leu Phe Trp
130 135 140

Gln Glu Leu Asp Gln Pro Arg Ala Ile Ala Leu Asp Pro Ser Ser Gly
145 150 155 160

Phe Met Tyr Trp Thr Asp Trp Gly Glu Val Pro Lys Ile Glu Arg Ala
165 170 175

Gly Met Asp Gly Ser Ser Arg Phe Ile Ile Ile Asn Ser Glu Ile Tyr
180 185 190

Trp Pro Asn Gly Leu Thr Leu Asp Tyr Glu Glu Gln Lys Leu Tyr Trp
195 200 205

Ala Asp Ala Lys Leu Asn Phe Ile His Lys Ser Asn Leu Asp Gly Thr

210 215 220

Asn Arg Gln Ala Val Val Lys Gly Ser Leu Pro His Pro Phe Ala Leu
225 230 235 240

Thr Leu Phe Glu Asp Ile Leu Tyr Trp Thr Asp Trp Ser Thr His Ser
245 250 255

Ile Leu Ala Cys Asn Lys Tyr Thr Gly Glu Gly Leu Arg Glu Ile His
260 265 270

Ser Asp Ile Phe Ser Pro Met Asp Ile His Ala Phe Ser Gln Gln Arg
275 280 285

Gln Pro Asn Ala Thr Asn Pro Cys Gly Ile Asp Asn Gly Gly Cys Ser
290 295 300

His Leu Cys Leu Met Ser Pro Val Lys Pro Phe Tyr Gln Cys Ala Cys
305 310 315 320

Pro Thr Gly Val Lys Leu Leu Glu Asn Gly Lys Thr Cys Lys Asp Gly
325 330 335

Ala Thr Glu Leu Leu Leu Leu Ala Arg Arg Thr Asp Leu Arg Arg Ile
340 345 350

Ser Leu Asp Thr Pro Asp Phe Thr Asp Ile Val Leu Gln Leu Glu Asp
355 360 365

Ile Arg His Ala Ile Ala Ile Asp Tyr Asp Pro Val Glu Gly Tyr Ile
370 375 380

Tyr Trp Thr Asp Asp Glu Val Arg Ala Ile Arg Arg Ser Phe Ile Asp
385 390 395 400

Gly Ser Gly Ser Gln Phe Val Val Thr Ala Gln Ile Ala His Pro Asp
405 410 415

Gly Ile Ala Val Asp Trp Val Ala Arg Asn Leu Tyr Trp Thr Asp Thr
420 425 430

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

Ile Leu Ile Ser Glu Asp Leu Glu Glu Pro Arg Ala Ile Val Leu Asp
450 455 460

Pro Met Val Gly Tyr Met Tyr Trp Thr Asp Trp Gly Glu Ile Pro Lys
465 470 475 480

Ile Glu Arg Ala Ala Leu Asp Gly Ser Asp Arg Val Val Leu Val Asn

485 490 495

Thr Ser Leu Gly Trp Pro Asn Gly Leu Ala Leu Asp Tyr Asp Glu Gly
500 505 510

Lys Ile Tyr Trp Gly Asp Ala Lys Thr Asp Lys Ile Glu Val Met Asn
515 520 525

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

Ile Phe Gly Phe Thr Leu Leu Gly Asp Tyr Val Tyr Trp Thr Asp Trp
545 550 555 560

Gln Arg Arg Ser Ile Glu Arg Val His Lys Arg Ser Ala Glu Arg Glu
565 570 575

Val Ile Ile Asp Gln Leu Pro Asp Leu Met Gly Leu Lys Ala Thr Asn
580 585 590

Val His Arg Val Ile Gly Ser Asn Pro Cys Ala Glu Glu Asn Gly Gly
595 600 605

Cys Ser His Leu Cys Leu Tyr Arg Pro Gln Gly Leu Arg Cys Ala Cys
610 615 620

Pro Ile Gly Phe Glu Leu Ile Ser Asp Met Lys Thr Cys Ile Val Pro
625 630 635 640

Glu Ala Phe Leu Leu Phe Ser Arg Arg Ala Asp Ile Arg Arg Leu Glu
645 650 655

Ser Gly Gly Gly Gly Val Thr Asp Lys Thr His Thr Cys Pro Pro Cys
660 665 670

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
675 680 685

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
690 695 700

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
705 710 715 720

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
725 730 735

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
740 745 750

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

755 760 765

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
770 775 780

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
785 790 795 800

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
805 810 815

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
820 825 830

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
835 840 845

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
850 855 860

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
865 870 875 880

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
885 890

<210> 31
<211> 882
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 31

Met Gly Gly Thr Ala Ala Arg Leu Gly Ala Val Ile Leu Phe Val Val
1 5 10 15

Ile Val Gly Leu His Gly Val Arg Gly Lys Gly Ser Val Pro Glu Ala
20 25 30

Phe Leu Leu Phe Ser Arg Arg Ala Asp Ile Arg Arg Ile Ser Leu Glu
35 40 45

Thr Asn Asn Asn Asn Val Ala Ile Pro Leu Thr Gly Val Lys Glu Ala
50 55 60

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

Ile Ser Leu Lys Thr Ile Ser Arg Ala Phe Met Asn Gly Ser Ala Leu
85 90 95

```
Glu His Val Val Glu Phe Gly Leu Asp Tyr Pro Glu Gly Met Ala Val
            100                 105                 110

Asp Trp Leu Gly Lys Asn Leu Tyr Trp Ala Asp Thr Gly Thr Asn Arg
        115                 120                 125

Ile Glu Val Ser Lys Leu Asp Gly Gln His Arg Gln Val Leu Val Trp
    130                 135                 140

Lys Asp Leu Asp Ser Pro Arg Ala Leu Ala Leu Asp Pro Ala Glu Gly
145                 150                 155                 160

Phe Met Tyr Trp Thr Glu Trp Gly Gly Lys Pro Lys Ile Asp Arg Ala
                165                 170                 175

Ala Met Asp Gly Ser Glu Arg Thr Thr Leu Val Pro Asn Val Gly Arg
            180                 185                 190

Ala Asn Gly Leu Thr Ile Asp Tyr Ala Lys Arg Arg Leu Tyr Trp Thr
        195                 200                 205

Asp Leu Asp Thr Asn Leu Ile Glu Ser Ser Asn Met Leu Gly Leu Asn
    210                 215                 220

Arg Glu Val Ile Ala Asp Asp Leu Pro His Pro Phe Gly Leu Thr Gln
225                 230                 235                 240

Tyr Gln Asp Tyr Ile Tyr Trp Thr Asp Trp Ser Arg Arg Ser Ile Glu
                245                 250                 255

Arg Ala Asn Lys Thr Ser Gly Gln Asn Arg Thr Ile Ile Gln Gly His
            260                 265                 270

Leu Asp Tyr Val Met Asp Ile Leu Val Phe His Ser Ser Arg Gln Ser
        275                 280                 285

Gly Trp Asn Glu Cys Ala Ser Ser Asn Gly His Cys Ser His Leu Cys
    290                 295                 300

Leu Ala Val Pro Val Gly Gly Phe Val Cys Gly Cys Pro Ala His Tyr
305                 310                 315                 320

Ser Leu Asn Ala Asp Asn Arg Thr Cys Ser Ala Pro Thr Thr Phe Leu
                325                 330                 335

Leu Phe Ser Gln Lys Ser Ala Ile Asn Arg Met Val Ile Asp Glu Gln
            340                 345                 350

Gln Ser Pro Asp Ile Ile Leu Pro Ile His Ser Leu Arg Asn Val Arg
        355                 360                 365
```

```
Ala Ile Asp Tyr Asp Pro Leu Asp Lys Gln Leu Tyr Trp Ile Asp Ser
    370                 375                 380

Arg Gln Asn Met Ile Arg Lys Ala Gln Glu Asp Gly Ser Gln Gly Phe
385                 390                 395                 400

Thr Val Val Val Ser Ser Val Pro Ser Gln Asn Leu Glu Ile Gln Pro
                405                 410                 415

Tyr Asp Leu Ser Ile Asp Ile Tyr Ser Arg Tyr Ile Tyr Trp Thr Cys
            420                 425                 430

Glu Ala Thr Asn Val Ile Asn Val Thr Arg Leu Asp Gly Arg Ser Val
        435                 440                 445

Gly Val Val Leu Lys Gly Glu Gln Asp Arg Pro Arg Ala Ile Val Val
    450                 455                 460

Asn Pro Glu Lys Gly Tyr Met Tyr Phe Thr Asn Leu Gln Glu Arg Ser
465                 470                 475                 480

Pro Lys Ile Glu Arg Ala Ala Leu Asp Gly Thr Glu Arg Glu Val Leu
                485                 490                 495

Phe Phe Ser Gly Leu Ser Lys Pro Ile Ala Leu Ala Leu Asp Ser Arg
            500                 505                 510

Leu Gly Lys Leu Phe Trp Ala Asp Ser Asp Leu Arg Arg Ile Glu Ser
        515                 520                 525

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

Leu Gln Pro Val Gly Leu Thr Val Phe Glu Asn Trp Leu Tyr Trp Ile
545                 550                 555                 560

Asp Lys Gln Gln Gln Met Ile Glu Lys Ile Asp Met Thr Gly Arg Glu
                565                 570                 575

Gly Arg Thr Lys Val Gln Ala Arg Ile Ala Gln Leu Ser Asp Ile His
            580                 585                 590

Ala Val Lys Glu Leu Asn Leu Gln Glu Tyr Arg Gln His Pro Cys Ala
        595                 600                 605

Gln Asp Asn Gly Gly Cys Ser His Ile Cys Leu Val Lys Gly Asp Gly
    610                 615                 620

Thr Thr Arg Cys Ser Cys Pro Met His Leu Val Leu Leu Gln Asp Glu
625                 630                 635                 640
```

```
Leu Ser Cys Gly Thr Gly Leu Glu Ser Gly Gly Gly Gly Val Thr Asp
                645                 650                 655

Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
            660                 665                 670

Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
        675                 680                 685

Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
    690                 695                 700

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
705                 710                 715                 720

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
                725                 730                 735

Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
            740                 745                 750

Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
        755                 760                 765

Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
    770                 775                 780

Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
785                 790                 795                 800

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
                805                 810                 815

Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
            820                 825                 830

Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
        835                 840                 845

Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
    850                 855                 860

Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
865                 870                 875                 880

Gly Lys
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<210> 32
<211> 23
<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic sequence

<400> 32
aatgctgctg aactgaatag aaa 23

<210> 33
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 33
aaccggtcct agcgaaaa 18

<210> 34
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 34
ccgagcactg tttcaaatct ccca 24

<210> 35
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 35
tgagagtgtg acattgttgg aa 22

<210> 36
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 36
gtaaaatctg tgtgcaatta tcatgt 26

<210> 37
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 37
aatcattgaa aatgactaac acaagaccct gtaaat 36

<210> 38
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 38
tgaggacgca ggagtgaa 18

<210> 39
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 39
cccagagagt ggccaaat 18

<210> 40
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide

<400> 40
cctgtttgct gccacccatg a 21

<210> 41
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X is any amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X is I or V

<400> 41

Asn Xaa Xaa Lys
1

<210> 42
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X is any amino acid

<220>
<221> MISC_FEATURE
<222> (3)..(3)
<223> X is I or V

<400> 42

Asn Xaa Xaa Lys Asn
1 5

<210> 43
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X is any amino acid

<400> 43

Asn Xaa Val Lys
1

<210> 44
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X is any amino acid

<400> 44

Asn Xaa Ile Lys
1

<210> 45
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X is any amino acid

<400> 45

Asn Xaa Val Lys Asn
1 5

<210> 46
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<220>
<221> MISC_FEATURE
<222> (2)..(2)
<223> X is any amino acid

<400> 46

Asn Xaa Ile Lys Asn
1 5

<210> 47
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 47

Asn Ala Val Lys
1

<210> 48
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 48

Asn Ala Ile Lys
1

<210> 49
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 49

Asn Ala Val Lys Asn
1 5

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

<220>
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<400> 50

Asn Ala Ile Lys Asn
1 5

<210> 51
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 51

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

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

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

Gly Thr Ile Ser Pro Ala Gly Gly Ser Thr Asp Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Thr Asp Trp Arg Phe His His Ala Gly Glu Tyr Ala Met Asp
100 105 110

Tyr Trp Gly Gln
115

<210> 52
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 52

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

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

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

Ala Gly Ile Ser Pro Asp Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Trp Ser Tyr Ile Ser Arg Tyr Phe Ser Ser Val Met Asp Tyr
100 105 110

Trp Gly Gln
115

<210> 53
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 53

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

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

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

Ala Ser Ile Tyr Pro Ala Gly Gly Asp Thr Asp Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Arg Ser Pro Gly Trp Ala Leu Arg Gly Ala Met Asp Tyr Trp Gly
100 105 110

Gln

<210> 54
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 54

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

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

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

Gly Arg Ile Tyr Pro Tyr Gly Gly Tyr Thr Asp Tyr Ala Asp Ser Val
50 55 60

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

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

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

<210> 55
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 55

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

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

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

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Gly Val Ile Ser Pro Ser Ser Gly Ala Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Ala Arg Trp Pro Ala Gly Ala Phe Leu Gly Tyr Tyr Gly Met Asp Tyr
            100                 105                 110

Trp Gly Gln
        115
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<210> 56
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 56

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
    50                  55                  60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
            100                 105                 110

Met Asp Tyr Trp Gly Gln
        115
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<210> 57
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 57

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

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

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

Ala Glu Ile Ser Pro Tyr Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Leu Arg Ala Arg Pro Pro Ile Arg Leu His Pro Arg Gly Ser Val
100 105 110

Met Asp Tyr Trp Gly Gln
115

<210> 58
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic polypeptide

<400> 58

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

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

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

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

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ala Ile Pro Thr

85 90 95

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