SEQUENCE LISTING

<110> MASSACHUSETTS INSTITUTE OF TECHNOLOGY
WITTRUP, Karl Dane, et al.

<120> COLLAGEN-LOCALIZED IMMUNOMODULATORY MOLECULES AND METHODS THEREOF

<130> MITN-048PC

<140> PCT/US2019/043805
<141> 2019-07-26

<150> US 62/738,981
<151> 2018-09-28

<160> 212

<170> PatentIn version 3.5

<210> 1
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-2

<400> 1

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

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

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

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

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

Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu

85 90 95

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

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

Ile Ser Thr Leu Thr
130

<210> 2
<211> 306
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Wild Type IL12B without signal (IL12B) Amino Acids

<400> 2

Ile Trp Glu Leu Lys Lys Asp Val Tyr Val Val Glu Leu Asp Trp Tyr
1 5 10 15

Pro Asp Ala Pro Gly Glu Met Val Val Leu Thr Cys Asp Thr Pro Glu
20 25 30

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

Ser Gly Lys Thr Leu Thr Ile Gln Val Lys Glu Phe Gly Asp Ala Gly
50 55 60

Gln Tyr Thr Cys His Lys Gly Gly Glu Val Leu Ser His Ser Leu Leu
65 70 75 80

Leu Leu His Lys Lys Glu Asp Gly Ile Trp Ser Thr Asp Ile Leu Lys
85 90 95

Asp Gln Lys Glu Pro Lys Asn Lys Thr Phe Leu Arg Cys Glu Ala Lys

```
            100                 105                 110

Asn Tyr Ser Gly Arg Phe Thr Cys Trp Trp Leu Thr Thr Ile Ser Thr
        115                 120                 125

Asp Leu Thr Phe Ser Val Lys Ser Ser Arg Gly Ser Ser Asp Pro Gln
    130                 135                 140

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

Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu Cys Gln Glu Asp Ser Ala
                165                 170                 175

Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile Glu Val Met Val Asp Ala
            180                 185                 190

Val His Lys Leu Lys Tyr Glu Asn Tyr Thr Ser Ser Phe Phe Ile Arg
        195                 200                 205

Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Leu Lys Pro Leu
    210                 215                 220

Lys Asn Ser Arg Gln Val Glu Val Ser Trp Glu Tyr Pro Asp Thr Trp
225                 230                 235                 240

Ser Thr Pro His Ser Tyr Phe Ser Leu Thr Phe Cys Val Gln Val Gln
                245                 250                 255

Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg Val Phe Thr Asp Lys Thr
            260                 265                 270

Ser Ala Thr Val Ile Cys Arg Lys Asn Ala Ser Ile Ser Val Arg Ala
        275                 280                 285

Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser Glu Trp Ala Ser Val Pro
    290                 295                 300
```

Cys Ser
305

<210> 3
<211> 197
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Wild Type IL12A without signal peptide Amino acids

<400> 3

Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe Pro Cys Leu
1 5 10 15

His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met Leu Gln Lys
20 25 30

Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu Glu Ile Asp
35 40 45

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

Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser Arg Glu Thr
65 70 75 80

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

Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu Lys Met Tyr
100 105 110

Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met Asp Pro Lys
115 120 125

Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile Asp Glu Leu
130 135 140

```
Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln Lys Ser Ser
145                 150                 155                 160


Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu Cys Ile Leu
                165                 170                 175


Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg Val Met Ser
            180                 185                 190


Tyr Leu Asn Ala Ser
        195
```

<210> 4
<211> 175
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-15Ra

<400> 4

```
Ile Thr Cys Pro Pro Pro Met Ser Val Glu His Ala Asp Ile Trp Val
1               5                   10                  15


Lys Ser Tyr Ser Leu Tyr Ser Arg Glu Arg Tyr Ile Cys Asn Ser Gly
            20                  25                  30


Phe Lys Arg Lys Ala Gly Thr Ser Ser Leu Thr Glu Cys Val Leu Asn
        35                  40                  45


Lys Ala Thr Asn Val Ala His Trp Thr Thr Pro Ser Leu Lys Cys Ile
    50                  55                  60


Arg Asp Pro Ala Leu Val His Gln Arg Pro Ala Pro Pro Ser Thr Val
65                  70                  75                  80


Thr Thr Ala Gly Val Thr Pro Gln Pro Glu Ser Leu Ser Pro Ser Gly
                85                  90                  95
```

```
Lys Glu Pro Ala Ala Ser Ser Pro Ser Ser Asn Asn Thr Ala Ala Thr
            100                 105                 110

Thr Ala Ala Ile Val Pro Gly Ser Gln Leu Met Pro Ser Lys Ser Pro
        115                 120                 125

Ser Thr Gly Thr Thr Glu Ile Ser Ser His Glu Ser Ser His Gly Thr
    130                 135                 140

Pro Ser Gln Thr Thr Ala Lys Asn Trp Glu Leu Thr Ala Ser Ala Ser
145                 150                 155                 160

His Gln Pro Pro Gly Val Tyr Pro Gln Gly His Ser Asp Thr Thr
                165                 170                 175
```

<210> 5
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-15

<400> 5

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

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

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

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

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

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

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

Thr Ser

<210> 6
<211> 157
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: TNF-alpha

<400> 6

Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val
1 5 10 15

Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp Leu Asn Arg Arg
20 25 30

Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg Asp Asn Gln Leu
35 40 45

Val Val Pro Ser Glu Gly Leu Tyr Leu Ile Tyr Ser Gln Val Leu Phe
50 55 60

Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu Thr His Thr Ile
65 70 75 80

Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn Leu Leu Ser Ala
85 90 95

Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly Ala Glu Ala Lys
100 105 110

Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe Gln Leu Glu Lys
        115   120   125

Gly Asp Arg Leu Ser Ala Glu Ile Asn Arg Pro Asp Tyr Leu Asp Phe
    130   135   140

Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala Leu
145   150   155

<210> 7
<211> 138
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFN-gamma

<400> 7

Gln Asp Pro Tyr Val Lys Glu Ala Glu Asn Leu Lys Lys Tyr Phe Asn
1   5   10   15

Ala Gly His Ser Asp Val Ala Asp Asn Gly Thr Leu Phe Leu Gly Ile
            20   25   30

Leu Lys Asn Trp Lys Glu Glu Ser Asp Arg Lys Ile Met Gln Ser Gln
        35   40   45

Ile Val Ser Phe Tyr Phe Lys Leu Phe Lys Asn Phe Lys Asp Asp Gln
    50   55   60

Ser Ile Gln Lys Ser Val Glu Thr Ile Lys Glu Asp Met Asn Val Lys
65   70   75   80

Phe Phe Asn Ser Asn Lys Lys Lys Arg Asp Asp Phe Glu Lys Leu Thr
                85   90   95

Asn Tyr Ser Val Thr Asp Leu Asn Val Gln Arg Lys Ala Ile His Glu
            100   105   110

Leu Ile Gln Val Met Ala Glu Leu Ser Pro Ala Ala Lys Thr Gly Lys
        115   120   125

Arg Lys Arg Ser Gln Met Leu Phe Arg Gly
    130   135

<210> 8
<211> 165
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFN-alpha

<400> 8

Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
1   5   10   15

Leu Leu Ala Gln Met Arg Lys Ile Ser Leu Phe Ser Cys Leu Lys Asp
            20   25   30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
        35   40   45

Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
    50   55   60

Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
65   70   75   80

Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
                85   90   95

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

Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
        115   120   125

```
Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
    130                 135                 140


Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
145                 150                 155                 160


Leu Arg Ser Lys Glu
                165


<210>  9
<211>  133
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL-21

<400>  9

Gln Gly Gln Asp Arg His Met Ile Arg Met Arg Gln Leu Ile Asp Ile
1               5                   10                  15


Val Asp Gln Leu Lys Asn Tyr Val Asn Asp Leu Val Pro Glu Phe Leu
            20                  25                  30


Pro Ala Pro Glu Asp Val Glu Thr Asn Cys Glu Trp Ser Ala Phe Ser
        35                  40                  45


Cys Phe Gln Lys Ala Gln Leu Lys Ser Ala Asn Thr Gly Asn Asn Glu
    50                  55                  60


Arg Ile Ile Asn Val Ser Ile Lys Lys Leu Lys Arg Lys Pro Pro Ser
65                  70                  75                  80


Thr Asn Ala Gly Arg Arg Gln Lys His Arg Leu Thr Cys Pro Ser Cys
                85                  90                  95


Asp Ser Tyr Glu Lys Lys Pro Pro Lys Glu Phe Leu Glu Arg Phe Lys
            100                 105                 110
```

Ser Leu Leu Gln Lys Met Ile His Gln His Leu Ser Ser Arg Thr His
        115   120   125

Gly Ser Glu Asp Ser
    130

<210> 10
<211> 449
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-6

<400> 10

Leu Ala Pro Arg Arg Cys Pro Ala Gln Glu Val Ala Arg Gly Val Leu
1   5   10   15

Thr Ser Leu Pro Gly Asp Ser Val Thr Leu Thr Cys Pro Gly Val Glu
            20   25   30

Pro Glu Asp Asn Ala Thr Val His Trp Val Leu Arg Lys Pro Ala Ala
        35   40   45

Gly Ser His Pro Ser Arg Trp Ala Gly Met Gly Arg Arg Leu Leu Leu
    50   55   60

Arg Ser Val Gln Leu His Asp Ser Gly Asn Tyr Ser Cys Tyr Arg Ala
65   70   75   80

Gly Arg Pro Ala Gly Thr Val His Leu Leu Val Asp Val Pro Pro Glu
                85   90   95

Glu Pro Gln Leu Ser Cys Phe Arg Lys Ser Pro Leu Ser Asn Val Val
            100   105   110

Cys Glu Trp Gly Pro Arg Ser Thr Pro Ser Leu Thr Thr Lys Ala Val
        115   120   125

```
Leu Leu Val Arg Lys Phe Gln Asn Ser Pro Ala Glu Asp Phe Gln Glu
    130                 135                 140

Pro Cys Gln Tyr Ser Gln Glu Ser Gln Lys Phe Ser Cys Gln Leu Ala
145                 150                 155                 160

Val Pro Glu Gly Asp Ser Ser Phe Tyr Ile Val Ser Met Cys Val Ala
                165                 170                 175

Ser Ser Val Gly Ser Lys Phe Ser Lys Thr Gln Thr Phe Gln Gly Cys
            180                 185                 190

Gly Ile Leu Gln Pro Asp Pro Pro Ala Asn Ile Thr Val Thr Ala Val
        195                 200                 205

Ala Arg Asn Pro Arg Trp Leu Ser Val Thr Trp Gln Asp Pro His Ser
    210                 215                 220

Trp Asn Ser Ser Phe Tyr Arg Leu Arg Phe Glu Leu Arg Tyr Arg Ala
225                 230                 235                 240

Glu Arg Ser Lys Thr Phe Thr Thr Trp Met Val Lys Asp Leu Gln His
                245                 250                 255

His Cys Val Ile His Asp Ala Trp Ser Gly Leu Arg His Val Val Gln
            260                 265                 270

Leu Arg Ala Gln Glu Glu Phe Gly Gln Gly Glu Trp Ser Glu Trp Ser
        275                 280                 285

Pro Glu Ala Met Gly Thr Pro Trp Thr Glu Ser Arg Ser Pro Pro Ala
    290                 295                 300

Glu Asn Glu Val Ser Thr Pro Met Gln Ala Leu Thr Thr Asn Lys Asp
305                 310                 315                 320

Asp Asp Asn Ile Leu Phe Arg Asp Ser Ala Asn Ala Thr Ser Leu Pro
```

```
                325                 330                 335

Val Gln Asp Ser Ser Ser Val Pro Leu Pro Thr Phe Leu Val Ala Gly
            340                 345                 350

Gly Ser Leu Ala Phe Gly Thr Leu Leu Cys Ile Ala Ile Val Leu Arg
        355                 360                 365

Phe Lys Lys Thr Trp Lys Leu Arg Ala Leu Lys Glu Gly Lys Thr Ser
    370                 375                 380

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

Pro Thr Pro Val Leu Val Pro Leu Ile Ser Pro Pro Val Ser Pro Ser
                405                 410                 415

Ser Leu Gly Ser Asp Asn Thr Ser Ser His Asn Arg Pro Asp Ala Arg
            420                 425                 430

Asp Pro Arg Ser Pro Tyr Asp Ile Ser Asn Thr Asp Tyr Phe Phe Pro
        435                 440                 445

Arg
```

<210> 11
<211> 400
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-5

<400> 11

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

Thr Ile Lys Val Thr Gly Leu Ala Gln Val Leu Leu Gln Trp Lys Pro
```

```
            20                  25                  30

Asn Pro Asp Gln Glu Gln Arg Asn Val Asn Leu Glu Tyr Gln Val Lys
        35                  40                  45

Ile Asn Ala Pro Lys Glu Asp Asp Tyr Glu Thr Arg Ile Thr Glu Ser
    50                  55                  60

Lys Cys Val Thr Ile Leu His Lys Gly Phe Ser Ala Ser Val Arg Thr
65                  70                  75                  80

Ile Leu Gln Asn Asp His Ser Leu Leu Ala Ser Ser Trp Ala Ser Ala
                85                  90                  95

Glu Leu His Ala Pro Pro Gly Ser Pro Gly Thr Ser Ile Val Asn Leu
            100                 105                 110

Thr Cys Thr Thr Asn Thr Thr Glu Asp Asn Tyr Ser Arg Leu Arg Ser
        115                 120                 125

Tyr Gln Val Ser Leu His Cys Thr Trp Leu Val Gly Thr Asp Ala Pro
    130                 135                 140

Glu Asp Thr Gln Tyr Phe Leu Tyr Tyr Arg Tyr Gly Ser Trp Thr Glu
145                 150                 155                 160

Glu Cys Gln Glu Tyr Ser Lys Asp Thr Leu Gly Arg Asn Ile Ala Cys
                165                 170                 175

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

Val Leu Val Asn Gly Ser Ser Lys His Ser Ala Ile Arg Pro Phe Asp
        195                 200                 205

Gln Leu Phe Ala Leu His Ala Ile Asp Gln Ile Asn Pro Pro Leu Asn
    210                 215                 220
```

```
Val Thr Ala Glu Ile Glu Gly Thr Arg Leu Ser Ile Gln Trp Glu Lys
225                 230                 235                 240


Pro Val Ser Ala Phe Pro Ile His Cys Phe Asp Tyr Glu Val Lys Ile
                245                 250                 255


His Asn Thr Arg Asn Gly Tyr Leu Gln Ile Glu Lys Leu Met Thr Asn
            260                 265                 270


Ala Phe Ile Ser Ile Ile Asp Asp Leu Ser Lys Tyr Asp Val Gln Val
        275                 280                 285


Arg Ala Ala Val Ser Ser Met Cys Arg Glu Ala Gly Leu Trp Ser Glu
    290                 295                 300


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


Glu Trp Phe Val Ile Val Ile Met Ala Thr Ile Cys Phe Ile Leu Leu
                325                 330                 335


Ile Leu Ser Leu Ile Cys Lys Ile Cys His Leu Trp Ile Lys Leu Phe
            340                 345                 350


Pro Pro Ile Pro Ala Pro Lys Ser Asn Ile Lys Asp Leu Phe Val Thr
        355                 360                 365


Thr Asn Tyr Glu Lys Ala Gly Ser Ser Glu Thr Glu Ile Glu Val Ile
    370                 375                 380


Cys Tyr Ile Glu Lys Pro Gly Val Glu Thr Leu Glu Asp Ser Val Phe
385                 390                 395                 400


<210>  12
<211>  77
<212>  PRT
<213>  Artificial Sequence
```

<220>
<223> Synthetic: IL-8

<400> 12

Ala Val Leu Pro Arg Ser Ala Lys Glu Leu Arg Cys Gln Cys Ile Lys
1   5   10   15

Thr Tyr Ser Lys Pro Phe His Pro Lys Phe Ile Lys Glu Leu Arg Val
            20   25   30

Ile Glu Ser Gly Pro His Cys Ala Asn Thr Glu Ile Ile Val Lys Leu
        35   40   45

Ser Asp Gly Arg Glu Leu Cys Leu Asp Pro Lys Glu Asn Trp Val Gln
    50   55   60

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

<210> 13
<211> 152
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-7

<400> 13

Asp Cys Asp Ile Glu Gly Lys Asp Gly Lys Gln Tyr Glu Ser Val Leu
1   5   10   15

Met Val Ser Ile Asp Gln Leu Leu Asp Ser Met Lys Glu Ile Gly Ser
            20   25   30

Asn Cys Leu Asn Asn Glu Phe Asn Phe Phe Lys Arg His Ile Cys Asp
        35   40   45

Ala Asn Lys Glu Gly Met Phe Leu Phe Arg Ala Ala Arg Lys Leu Arg
    50   55   60

```
Gln Phe Leu Lys Met Asn Ser Thr Gly Asp Phe Asp Leu His Leu Leu
65                  70                  75                  80


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


Lys Gly Arg Lys Pro Ala Ala Leu Gly Glu Ala Gln Pro Thr Lys Ser
            100                 105                 110


Leu Glu Glu Asn Lys Ser Leu Lys Glu Gln Lys Lys Leu Asn Asp Leu
        115                 120                 125


Cys Phe Leu Lys Arg Leu Leu Gln Glu Ile Lys Thr Cys Trp Asn Lys
    130                 135                 140


Ile Leu Met Gly Thr Lys Glu His
145                 150


<210>  14
<211>  132
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL-17A

<400>  14

Gly Ile Thr Ile Pro Arg Asn Pro Gly Cys Pro Asn Ser Glu Asp Lys
1               5                   10                  15


Asn Phe Pro Arg Thr Val Met Val Asn Leu Asn Ile His Asn Arg Asn
            20                  25                  30


Thr Asn Thr Asn Pro Lys Arg Ser Ser Asp Tyr Tyr Asn Arg Ser Thr
        35                  40                  45


Ser Pro Trp Asn Leu His Arg Asn Glu Asp Pro Glu Arg Tyr Pro Ser
    50                  55                  60
```

```
Val Ile Trp Glu Ala Lys Cys Arg His Leu Gly Cys Ile Asn Ala Asp
65                  70                  75                  80


Gly Asn Val Asp Tyr His Met Asn Ser Val Pro Ile Gln Gln Glu Ile
                85                  90                  95


Leu Val Leu Arg Arg Glu Pro Pro His Cys Pro Asn Ser Phe Arg Leu
            100                 105                 110


Glu Lys Ile Leu Val Ser Val Gly Cys Thr Cys Val Thr Pro Ile Val
        115                 120                 125


His His Val Ala
    130
```

<210> 15
<211> 170
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-23alpha

<400> 15

```
Arg Ala Val Pro Gly Gly Ser Ser Pro Ala Trp Thr Gln Cys Gln Gln
1               5                   10                  15


Leu Ser Gln Lys Leu Cys Thr Leu Ala Trp Ser Ala His Pro Leu Val
            20                  25                  30


Gly His Met Asp Leu Arg Glu Glu Gly Asp Glu Glu Thr Thr Asn Asp
        35                  40                  45


Val Pro His Ile Gln Cys Gly Asp Gly Cys Asp Pro Gln Gly Leu Arg
    50                  55                  60


Asp Asn Ser Gln Phe Cys Leu Gln Arg Ile His Gln Gly Leu Ile Phe
65                  70                  75                  80
```

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

Leu Pro Asp Ser Pro Val Gly Gln Leu His Ala Ser Leu Leu Gly Leu
100 105 110

Ser Gln Leu Leu Gln Pro Glu Gly His His Trp Glu Thr Gln Gln Ile
115 120 125

Pro Ser Leu Ser Pro Ser Gln Pro Trp Gln Arg Leu Leu Leu Arg Phe
130 135 140

Lys Ile Leu Arg Ser Leu Gln Ala Phe Val Ala Val Ala Ala Arg Val
145 150 155 160

Phe Ala His Gly Ala Ala Thr Leu Ser Pro
165 170

<210> 16
<211> 157
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-18

<400> 16

Tyr Phe Gly Lys Leu Glu Ser Lys Leu Ser Val Ile Arg Asn Leu Asn
1 5 10 15

Asp Gln Val Leu Phe Ile Asp Gln Gly Asn Arg Pro Leu Phe Glu Asp
20 25 30

Met Thr Asp Ser Asp Cys Arg Asp Asn Ala Pro Arg Thr Ile Phe Ile
35 40 45

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

```
Ser Val Lys Cys Glu Lys Ile Ser Thr Leu Ser Cys Glu Asn Lys Ile
65                  70                  75                  80


Ile Ser Phe Lys Glu Met Asn Pro Pro Asp Asn Ile Lys Asp Thr Lys
                85                  90                  95


Ser Asp Ile Ile Phe Phe Gln Arg Ser Val Pro Gly His Asp Asn Lys
            100                 105                 110


Met Gln Phe Glu Ser Ser Ser Tyr Glu Gly Tyr Phe Leu Ala Cys Glu
        115                 120                 125


Lys Glu Arg Asp Leu Phe Lys Leu Ile Leu Lys Lys Glu Asp Glu Leu
    130                 135                 140


Gly Asp Arg Ser Ile Met Phe Thr Val Gln Asn Glu Asp
145                 150                 155


<210>  17
<211>  159
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL-1alpha

<400>  17

Ser Ala Pro Phe Ser Phe Leu Ser Asn Val Lys Tyr Asn Phe Met Arg
1               5                   10                  15


Ile Ile Lys Tyr Glu Phe Ile Leu Asn Asp Ala Leu Asn Gln Ser Ile
            20                  25                  30


Ile Arg Ala Asn Asp Gln Tyr Leu Thr Ala Ala Ala Leu His Asn Leu
        35                  40                  45


Asp Glu Ala Val Lys Phe Asp Met Gly Ala Tyr Lys Ser Ser Lys Asp
    50                  55                  60
```

```
Asp Ala Lys Ile Thr Val Ile Leu Arg Ile Ser Lys Thr Gln Leu Tyr
65                  70                  75                  80


Val Thr Ala Gln Asp Glu Asp Gln Pro Val Leu Leu Lys Glu Met Pro
                85                  90                  95


Glu Ile Pro Lys Thr Ile Thr Gly Ser Glu Thr Asn Leu Leu Phe Phe
            100                 105                 110


Trp Glu Thr His Gly Thr Lys Asn Tyr Phe Thr Ser Val Ala His Pro
        115                 120                 125


Asn Leu Phe Ile Ala Thr Lys Gln Asp Tyr Trp Val Cys Leu Ala Gly
    130                 135                 140


Gly Pro Pro Ser Ile Thr Asp Phe Gln Ile Leu Glu Asn Gln Ala
145                 150                 155


<210>  18
<211>  153
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL-1beta

<400>  18

Ala Pro Val Arg Ser Leu Asn Cys Thr Leu Arg Asp Ser Gln Gln Lys
1               5                   10                  15


Ser Leu Val Met Ser Gly Pro Tyr Glu Leu Lys Ala Leu His Leu Gln
            20                  25                  30


Gly Gln Asp Met Glu Gln Gln Val Val Phe Ser Met Ser Phe Val Gln
        35                  40                  45


Gly Glu Glu Ser Asn Asp Lys Ile Pro Val Ala Leu Gly Leu Lys Glu
    50                  55                  60
```

```
Lys Asn Leu Tyr Leu Ser Cys Val Leu Lys Asp Asp Lys Pro Thr Leu
65                  70                  75                  80


Gln Leu Glu Ser Val Asp Pro Lys Asn Tyr Pro Lys Lys Lys Met Glu
                85                  90                  95


Lys Arg Phe Val Phe Asn Lys Ile Glu Ile Asn Asn Lys Leu Glu Phe
            100                 105                 110


Glu Ser Ala Gln Phe Pro Asn Trp Tyr Ile Ser Thr Ser Gln Ala Glu
        115                 120                 125


Asn Met Pro Val Phe Leu Gly Gly Thr Lys Gly Gly Gln Asp Ile Thr
    130                 135                 140


Asp Phe Thr Met Gln Phe Val Ser Ser
145                 150


<210>  19
<211>  129
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL-4

<400>  19

His Lys Cys Asp Ile Thr Leu Gln Glu Ile Ile Lys Thr Leu Asn Ser
1               5                   10                  15


Leu Thr Glu Gln Lys Thr Leu Cys Thr Glu Leu Thr Val Thr Asp Ile
            20                  25                  30


Phe Ala Ala Ser Lys Asn Thr Thr Glu Lys Glu Thr Phe Cys Arg Ala
        35                  40                  45


Ala Thr Val Leu Arg Gln Phe Tyr Ser His His Glu Lys Asp Thr Arg
    50                  55                  60
```

```
Cys Leu Gly Ala Thr Ala Gln Gln Phe His Arg His Lys Gln Leu Ile
65                  70                  75                  80


Arg Phe Leu Lys Arg Leu Asp Arg Asn Leu Trp Gly Leu Ala Gly Leu
                85                  90                  95


Asn Ser Cys Pro Val Lys Glu Ala Asn Gln Ser Thr Leu Glu Asn Phe
            100                 105                 110


Leu Glu Arg Leu Lys Thr Ile Met Arg Glu Lys Tyr Ser Lys Cys Ser
        115                 120                 125


Ser
```

<210> 20
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-3

<400> 20

```
Ala Pro Met Thr Gln Thr Thr Pro Leu Lys Thr Ser Trp Val Asn Cys
1               5                   10                  15


Ser Asn Met Ile Asp Glu Ile Ile Thr His Leu Lys Gln Pro Pro Leu
            20                  25                  30


Pro Leu Leu Asp Phe Asn Asn Leu Asn Gly Glu Asp Gln Asp Ile Leu
        35                  40                  45


Met Glu Asn Asn Leu Arg Arg Pro Asn Leu Glu Ala Phe Asn Arg Ala
    50                  55                  60


Val Lys Ser Leu Gln Asn Ala Ser Ala Ile Glu Ser Ile Leu Lys Asn
65                  70                  75                  80
```

```
Leu Leu Pro Cys Leu Pro Leu Ala Thr Ala Ala Pro Thr Arg His Pro
                85                  90                  95


Ile His Ile Lys Asp Gly Asp Trp Asn Glu Phe Arg Arg Lys Leu Thr
            100                 105                 110


Phe Tyr Leu Lys Thr Leu Glu Asn Ala Gln Ala Gln Gln Thr Thr Leu
        115                 120                 125


Ser Leu Ala Ile Phe
    130
```

<210> 21
<211> 160
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-10

<400> 21

```
Ser Pro Gly Gln Gly Thr Gln Ser Glu Asn Ser Cys Thr His Phe Pro
1               5                   10                  15


Gly Asn Leu Pro Asn Met Leu Arg Asp Leu Arg Asp Ala Phe Ser Arg
            20                  25                  30


Val Lys Thr Phe Phe Gln Met Lys Asp Gln Leu Asp Asn Leu Leu Leu
        35                  40                  45


Lys Glu Ser Leu Leu Glu Asp Phe Lys Gly Tyr Leu Gly Cys Gln Ala
    50                  55                  60


Leu Ser Glu Met Ile Gln Phe Tyr Leu Glu Glu Val Met Pro Gln Ala
65                  70                  75                  80


Glu Asn Gln Asp Pro Asp Ile Lys Ala His Val Asn Ser Leu Gly Glu
                85                  90                  95
```

```
Asn Leu Lys Thr Leu Arg Leu Arg Leu Arg Arg Cys His Arg Phe Leu
            100                 105                 110


Pro Cys Glu Asn Lys Ser Lys Ala Val Glu Gln Val Lys Asn Ala Phe
        115                 120                 125


Asn Lys Leu Gln Glu Lys Gly Ile Tyr Lys Ala Met Ser Glu Phe Asp
    130                 135                 140


Ile Phe Ile Asn Tyr Ile Glu Ala Tyr Met Thr Met Lys Ile Arg Asn
145                 150                 155                 160


<210>  22
<211>  111
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL-13

<400>  22

Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu Val
1               5                   10                  15


Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val
            20                  25                  30


Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser
        35                  40                  45


Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg Met
    50                  55                  60


Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser
65                  70                  75                  80


Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys Asp
                85                  90                  95
```

Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn
100 105 110

<210> 23
<211> 132
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-17a

<400> 23

Gly Ile Thr Ile Pro Arg Asn Pro Gly Cys Pro Asn Ser Glu Asp Lys
1 5 10 15

Asn Phe Pro Arg Thr Val Met Val Asn Leu Asn Ile His Asn Arg Asn
20 25 30

Thr Asn Thr Asn Pro Lys Arg Ser Ser Asp Tyr Tyr Asn Arg Ser Thr
35 40 45

Ser Pro Trp Asn Leu His Arg Asn Glu Asp Pro Glu Arg Tyr Pro Ser
50 55 60

Val Ile Trp Glu Ala Lys Cys Arg His Leu Gly Cys Ile Asn Ala Asp
65 70 75 80

Gly Asn Val Asp Tyr His Met Asn Ser Val Pro Ile Gln Gln Glu Ile
85 90 95

Leu Val Leu Arg Arg Glu Pro Pro His Cys Pro Asn Ser Phe Arg Leu
100 105 110

Glu Lys Ile Leu Val Ser Val Gly Cys Thr Cys Val Thr Pro Ile Val
115 120 125

His His Val Ala
130

<210> 24
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL-9

<400> 24

```
Gln Gly Cys Pro Thr Leu Ala Gly Ile Leu Asp Ile Asn Phe Leu Ile
1               5                   10                  15


Asn Lys Met Gln Glu Asp Pro Ala Ser Lys Cys His Cys Ser Ala Asn
            20                  25                  30


Val Thr Ser Cys Leu Cys Leu Gly Ile Pro Ser Asp Asn Cys Thr Arg
        35                  40                  45


Pro Cys Phe Ser Glu Arg Leu Ser Gln Met Thr Asn Thr Thr Met Gln
    50                  55                  60


Thr Arg Tyr Pro Leu Ile Phe Ser Arg Val Lys Lys Ser Val Glu Val
65                  70                  75                  80


Leu Lys Asn Asn Lys Cys Pro Tyr Phe Ser Cys Glu Gln Pro Cys Asn
                85                  90                  95


Gln Thr Thr Ala Gly Asn Ala Leu Thr Phe Leu Lys Ser Leu Leu Glu
            100                 105                 110


Ile Phe Gln Lys Glu Lys Met Arg Gly Met Arg Gly Lys Ile
        115                 120                 125
```

<210> 25
<211> 138
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFN-gamma

<400> 25

```
Gln Asp Pro Tyr Val Lys Glu Ala Glu Asn Leu Lys Lys Tyr Phe Asn
1               5                   10                  15


Ala Gly His Ser Asp Val Ala Asp Asn Gly Thr Leu Phe Leu Gly Ile
            20                  25                  30


Leu Lys Asn Trp Lys Glu Glu Ser Asp Arg Lys Ile Met Gln Ser Gln
        35                  40                  45


Ile Val Ser Phe Tyr Phe Lys Leu Phe Lys Asn Phe Lys Asp Asp Gln
    50                  55                  60


Ser Ile Gln Lys Ser Val Glu Thr Ile Lys Glu Asp Met Asn Val Lys
65                  70                  75                  80


Phe Phe Asn Ser Asn Lys Lys Lys Arg Asp Asp Phe Glu Lys Leu Thr
                85                  90                  95


Asn Tyr Ser Val Thr Asp Leu Asn Val Gln Arg Lys Ala Ile His Glu
            100                 105                 110


Leu Ile Gln Val Met Ala Glu Leu Ser Pro Ala Ala Lys Thr Gly Lys
        115                 120                 125


Arg Lys Arg Ser Gln Met Leu Phe Arg Gly
    130                 135
```

<210> 26
<211> 165
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFN-alpha

<400> 26

```
Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
```

```
1               5                   10                  15

Leu Leu Ala Gln Met Arg Lys Ile Ser Leu Phe Ser Cys Leu Lys Asp
            20                  25                  30

Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
        35                  40                  45

Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
    50                  55                  60

Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
65                  70                  75                  80

Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
                85                  90                  95

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

Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
        115                 120                 125

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

Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
145                 150                 155                 160

Leu Arg Ser Lys Glu
                165
```

<210> 27
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: GM-CSF

<400> 27

Ala Pro Ala Arg Ser Pro Ser Pro Ser Thr Gln Pro Trp Glu His Val
1 5 10 15

Asn Ala Ile Gln Glu Ala Arg Arg Leu Leu Asn Leu Ser Arg Asp Thr
20 25 30

Ala Ala Glu Met Asn Glu Thr Val Glu Val Ile Ser Glu Met Phe Asp
35 40 45

Leu Gln Glu Pro Thr Cys Leu Gln Thr Arg Leu Glu Leu Tyr Lys Gln
50 55 60

Gly Leu Arg Gly Ser Leu Thr Lys Leu Lys Gly Pro Leu Thr Met Met
65 70 75 80

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

Ala Thr Gln Ile Ile Thr Phe Glu Ser Phe Lys Glu Asn Leu Lys Asp
100 105 110

Phe Leu Leu Val Ile Pro Phe Asp Cys Trp Glu Pro Val Gln Glu
115 120 125

<210> 28
<211> 209
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: FLT3L

<400> 28

Thr Gln Asp Cys Ser Phe Gln His Ser Pro Ile Ser Ser Asp Phe Ala
1 5 10 15

Val Lys Ile Arg Glu Leu Ser Asp Tyr Leu Leu Gln Asp Tyr Pro Val

```
            20                  25                  30

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

Arg Leu Val Leu Ala Gln Arg Trp Met Glu Arg Leu Lys Thr Val Ala
    50                  55                  60

Gly Ser Lys Met Gln Gly Leu Leu Glu Arg Val Asn Thr Glu Ile His
65                  70                  75                  80

Phe Val Thr Lys Cys Ala Phe Gln Pro Pro Pro Ser Cys Leu Arg Phe
                85                  90                  95

Val Gln Thr Asn Ile Ser Arg Leu Leu Gln Glu Thr Ser Glu Gln Leu
            100                 105                 110

Val Ala Leu Lys Pro Trp Ile Thr Arg Gln Asn Phe Ser Arg Cys Leu
        115                 120                 125

Glu Leu Gln Cys Gln Pro Asp Ser Ser Thr Leu Pro Pro Pro Trp Ser
    130                 135                 140

Pro Arg Pro Leu Glu Ala Thr Ala Pro Thr Ala Pro Gln Pro Pro Leu
145                 150                 155                 160

Leu Leu Leu Leu Leu Leu Pro Val Gly Leu Leu Leu Leu Ala Ala Ala
                165                 170                 175

Trp Cys Leu His Trp Gln Arg Thr Arg Arg Arg Thr Pro Arg Pro Gly
            180                 185                 190

Glu Gln Val Pro Pro Val Pro Ser Pro Gln Asp Leu Leu Leu Val Glu
        195                 200                 205

His
```

<210> 29
<211> 178
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: G-CSF

<400> 29

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


Lys Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu
            20                  25                  30


Gln Glu Lys Leu Val Ser Glu Cys Ala Thr Tyr Lys Leu Cys His Pro
        35                  40                  45


Glu Glu Leu Val Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro
    50                  55                  60


Leu Ser Ser Cys Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser
65                  70                  75                  80


Gln Leu His Ser Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu
                85                  90                  95


Glu Gly Ile Ser Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu
            100                 105                 110


Asp Val Ala Asp Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu
        115                 120                 125


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


Ala Ser Ala Phe Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His
145                 150                 155                 160
```

Leu Gln Ser Phe Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala
165 170 175

Gln Pro

<210> 30
<211> 180
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LIF

<400> 30

Ser Pro Leu Pro Ile Thr Pro Val Asn Ala Thr Cys Ala Ile Arg His
1 5 10 15

Pro Cys His Asn Asn Leu Met Asn Gln Ile Arg Ser Gln Leu Ala Gln
20 25 30

Leu Asn Gly Ser Ala Asn Ala Leu Phe Ile Leu Tyr Tyr Thr Ala Gln
35 40 45

Gly Glu Pro Phe Pro Asn Asn Leu Asp Lys Leu Cys Gly Pro Asn Val
50 55 60

Thr Asp Phe Pro Pro Phe His Ala Asn Gly Thr Glu Lys Ala Lys Leu
65 70 75 80

Val Glu Leu Tyr Arg Ile Val Val Tyr Leu Gly Thr Ser Leu Gly Asn
85 90 95

Ile Thr Arg Asp Gln Lys Ile Leu Asn Pro Ser Ala Leu Ser Leu His
100 105 110

Ser Lys Leu Asn Ala Thr Ala Asp Ile Leu Arg Gly Leu Leu Ser Asn
115 120 125

Val Leu Cys Arg Leu Cys Ser Lys Tyr His Val Gly His Val Asp Val
130 135 140

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

Leu Gly Cys Gln Leu Leu Gly Lys Tyr Lys Gln Ile Ile Ala Val Leu
165 170 175

Ala Gln Ala Phe
180

<210> 31
<211> 522
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: M-CSF

<400> 31

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu
1 5 10 15

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
20 25 30

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys
35 40 45

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr
50 55 60

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
65 70 75 80

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

```
Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln
            100                 105                 110

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu
        115                 120                 125

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala
    130                 135                 140

Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
145                 150                 155                 160

Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His
                165                 170                 175

Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu
            180                 185                 190

Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro
        195                 200                 205

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

Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser
225                 230                 235                 240

Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn
                245                 250                 255

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val
            260                 265                 270

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly
        275                 280                 285

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu
```

```
    290                 295                 300

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala
305                 310                 315                 320

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly Thr Ala Leu Pro
                325                 330                 335

Arg Val Gly Pro Val Arg Pro Thr Gly Gln Asp Trp Asn His Thr Pro
            340                 345                 350

Gln Lys Thr Asp His Pro Ser Ala Leu Leu Arg Asp Pro Pro Glu Pro
        355                 360                 365

Gly Ser Pro Arg Ile Ser Ser Leu Arg Pro Gln Gly Leu Ser Asn Pro
    370                 375                 380

Ser Thr Leu Ser Ala Gln Pro Gln Leu Ser Arg Ser His Ser Ser Gly
385                 390                 395                 400

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp
                405                 410                 415

Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala
            420                 425                 430

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

His Glu Arg Gln Ser Glu Gly Ser Phe Ser Pro Gln Leu Gln Glu Ser
    450                 455                 460

Val Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val
465                 470                 475                 480

Gly Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro
                485                 490                 495
```

Gln Arg Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr
500 505 510

Gln Asp Asp Arg Gln Val Glu Leu Pro Val
515 520

<210> 32
<211> 73
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MIP-2

<400> 32

Ala Pro Leu Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr Leu Gln
1 5 10 15

Gly Ile His Leu Lys Asn Ile Gln Ser Val Lys Val Lys Ser Pro Gly
20 25 30

Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn Gly Gln
35 40 45

Lys Ala Cys Leu Asn Pro Ala Ser Pro Met Val Lys Lys Ile Ile Glu
50 55 60

Lys Met Leu Lys Asn Gly Lys Ser Asn
65 70

<210> 33
<211> 69
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MIP-1beta

<400> 33

Ala Pro Met Gly Ser Asp Pro Pro Thr Ala Cys Cys Phe Ser Tyr Thr

1 5 10 15

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

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

Gln Val Cys Ala Asp Pro Ser Glu Ser Trp Val Gln Glu Tyr Val Tyr
50 55 60

Asp Leu Glu Leu Asn
65

<210> 34
<211> 73
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: KP (aka CXCL1)

<400> 34

Ala Ser Val Ala Thr Glu Leu Arg Cys Gln Cys Leu Gln Thr Leu Gln
1 5 10 15

Gly Ile His Pro Lys Asn Ile Gln Ser Val Asn Val Lys Ser Pro Gly
20 25 30

Pro His Cys Ala Gln Thr Glu Val Ile Ala Thr Leu Lys Asn Gly Arg
35 40 45

Lys Ala Cys Leu Asn Pro Ala Ser Pro Ile Val Lys Lys Ile Ile Glu
50 55 60

Lys Met Leu Asn Ser Asp Lys Ser Asn
65 70

<210> 35

<211> 103
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MIG (aka CXCL9)

<400> 35

Thr Pro Val Val Arg Lys Gly Arg Cys Ser Cys Ile Ser Thr Asn Gln
1 5 10 15

Gly Thr Ile His Leu Gln Ser Leu Lys Asp Leu Lys Gln Phe Ala Pro
20 25 30

Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile Ala Thr Leu Lys Asn Gly
35 40 45

Val Gln Thr Cys Leu Asn Pro Asp Ser Ala Asp Val Lys Glu Leu Ile
50 55 60

Lys Lys Trp Glu Lys Gln Val Ser Gln Lys Lys Lys Gln Lys Asn Gly
65 70 75 80

Lys Lys His Gln Lys Lys Lys Val Leu Lys Val Arg Lys Ser Gln Arg
85 90 95

Ser Arg Gln Lys Lys Thr Thr
100

<210> 36
<211> 77
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IP-10 (CXCL10)

<400> 36

Val Pro Leu Ser Arg Thr Val Arg Cys Thr Cys Ile Ser Ile Ser Asn
1 5 10 15

Gln Pro Val Asn Pro Arg Ser Leu Glu Lys Leu Glu Ile Ile Pro Ala
            20   25   30

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

Gly Glu Lys Arg Cys Leu Asn Pro Glu Ser Lys Ala Ile Lys Asn Leu
    50   55   60

Leu Lys Ala Val Ser Lys Glu Arg Ser Lys Arg Ser Pro
65   70   75

<210> 37
<211> 76
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MCP-1

<400> 37

Gln Pro Asp Ala Ile Asn Ala Pro Val Thr Cys Cys Tyr Asn Phe Thr
1   5   10   15

Asn Arg Lys Ile Ser Val Gln Arg Leu Ala Ser Tyr Arg Arg Ile Thr
            20   25   30

Ser Ser Lys Cys Pro Lys Glu Ala Val Ile Phe Lys Thr Ile Val Ala
        35   40   45

Lys Glu Ile Cys Ala Asp Pro Lys Gln Lys Trp Val Gln Asp Ser Met
    50   55   60

Asp His Leu Asp Lys Gln Thr Gln Thr Pro Lys Thr
65   70   75

<210> 38
<211> 74
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: Eotaxin

<400> 38

Gly Pro Ala Ser Val Pro Thr Thr Cys Cys Phe Asn Leu Ala Asn Arg
1   5   10   15

Lys Ile Pro Leu Gln Arg Leu Glu Ser Tyr Arg Arg Ile Thr Ser Gly
            20   25   30

Lys Cys Pro Gln Lys Ala Val Ile Phe Lys Thr Lys Leu Ala Lys Asp
        35   40   45

Ile Cys Ala Asp Pro Lys Lys Lys Trp Val Gln Asp Ser Met Lys Tyr
    50   55   60

Leu Asp Gln Lys Ser Pro Thr Pro Lys Pro
65   70

<210> 39
<211> 68
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: RANTES

<400> 39

Ser Pro Tyr Ser Ser Asp Thr Thr Pro Cys Cys Phe Ala Tyr Ile Ala
1   5   10   15

Arg Pro Leu Pro Arg Ala His Ile Lys Glu Tyr Phe Tyr Thr Ser Gly
            20   25   30

Lys Cys Ser Asn Pro Ala Val Val Phe Val Thr Arg Lys Asn Arg Gln
        35   40   45

Val Cys Ala Asn Pro Glu Lys Lys Trp Val Arg Glu Tyr Ile Asn Ser

50 55 60

Leu Glu Met Ser
65

<210> 40
<211> 78
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LIX

<400> 40

Ala Gly Pro Ala Ala Ala Val Leu Arg Glu Leu Arg Cys Val Cys Leu
1 5 10 15

Gln Thr Thr Gln Gly Val His Pro Lys Met Ile Ser Asn Leu Gln Val
20 25 30

Phe Ala Ile Gly Pro Gln Cys Ser Lys Val Glu Val Val Ala Ser Leu
35 40 45

Lys Asn Gly Lys Glu Ile Cys Leu Asp Pro Glu Ala Pro Phe Leu Lys
50 55 60

Lys Val Ile Gln Lys Ile Leu Asp Gly Gly Asn Lys Glu Asn
65 70 75

<210> 41
<211> 69
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MIP-1alpha

<400> 41

Ser Leu Ala Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Thr Ser
1 5 10 15

```
Arg Gln Ile Pro Gln Asn Phe Ile Ala Asp Tyr Phe Glu Thr Ser Ser
            20                  25                  30

Gln Cys Ser Lys Pro Gly Val Ile Phe Leu Thr Lys Arg Ser Arg Gln
        35                  40                  45

Val Cys Ala Asp Pro Ser Glu Glu Trp Val Gln Lys Tyr Val Ser Asp
    50                  55                  60

Leu Glu Leu Ser Ala
65
```

<210> 42
<211> 749
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(749)
<223> Human serum albumin (amino acid sequence)

<400> 42

```
Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp
1               5                   10                  15

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

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

Ala Phe Ala Gln Tyr Leu Gln Gln Cys Pro Phe Glu Asp His Val Lys
    50                  55                  60

Leu Val Asn Glu Val Thr Glu Phe Ala Lys Thr Cys Val Ala Asp Glu
65                  70                  75                  80
```

```
Ser Ala Glu Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys
                85                  90                  95

Leu Cys Thr Val Ala Thr Leu Arg Glu Thr Tyr Gly Glu Met Ala Asp
            100                 105                 110

Cys Cys Ala Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His
        115                 120                 125

Lys Asp Asp Asn Pro Asn Leu Pro Arg Leu Val Arg Pro Glu Val Asp
    130                 135                 140

Val Met Cys Thr Ala Phe His Asp Asn Glu Glu Thr Phe Leu Lys Lys
145                 150                 155                 160

Tyr Leu Tyr Glu Ile Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu
                165                 170                 175

Leu Leu Phe Phe Ala Lys Arg Tyr Lys Ala Ala Phe Thr Glu Cys Cys
            180                 185                 190

Gln Ala Ala Asp Lys Ala Ala Cys Leu Leu Pro Lys Leu Asp Glu Leu
        195                 200                 205

Arg Asp Glu Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala
    210                 215                 220

Ser Leu Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala
225                 230                 235                 240

Arg Leu Ser Gln Arg Phe Pro Lys Ala Glu Phe Ala Glu Val Ser Lys
                245                 250                 255

Leu Val Thr Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp
            260                 265                 270

Leu Leu Glu Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys
        275                 280                 285
```

```
Glu Asn Gln Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys
    290                 295                 300

Pro Leu Leu Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu
305                 310                 315                 320

Met Pro Ala Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys
                325                 330                 335

Asp Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met
            340                 345                 350

Phe Leu Tyr Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu
        355                 360                 365

Leu Leu Arg Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys
    370                 375                 380

Ala Ala Ala Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe
385                 390                 395                 400

Lys Pro Leu Val Glu Glu Pro Gln Asn Leu Ile Lys Gln Asn Cys Glu
                405                 410                 415

Leu Phe Glu Gln Leu Gly Glu Tyr Lys Phe Gln Asn Ala Leu Leu Val
            420                 425                 430

Arg Tyr Thr Lys Lys Val Pro Gln Val Ser Thr Pro Thr Leu Val Glu
        435                 440                 445

Val Ser Arg Asn Leu Gly Lys Val Gly Ser Lys Cys Cys Lys His Pro
    450                 455                 460

Glu Ala Lys Arg Met Pro Cys Ala Glu Asp Tyr Leu Ser Val Val Leu
465                 470                 475                 480
```

```
Asn Gln Leu Cys Val Leu His Glu Lys Thr Pro Val Ser Asp Arg Val
                485                 490                 495

Thr Lys Cys Cys Thr Glu Ser Leu Val Asn Arg Arg Pro Cys Phe Ser
            500                 505                 510

Ala Leu Glu Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Asn Ala Glu
        515                 520                 525

Thr Phe Thr Phe His Ala Asp Ile Cys Thr Leu Ser Glu Lys Glu Arg
    530                 535                 540

Gln Ile Lys Lys Gln Thr Ala Leu Val Glu Leu Val Lys His Lys Pro
545                 550                 555                 560

Lys Ala Thr Lys Glu Gln Leu Lys Ala Val Met Asp Asp Phe Ala Ala
                565                 570                 575

Phe Val Glu Lys Cys Cys Lys Ala Asp Asp Lys Glu Thr Cys Phe Ala
            580                 585                 590

Glu Glu Gly Lys Lys Leu Val Ala Ala Ser Gln Ala Ala Leu Gly Leu
        595                 600                 605

Gly Gly Gly Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
    610                 615                 620

Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
625                 630                 635                 640

Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
                645                 650                 655

Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
            660                 665                 670

Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
        675                 680                 685
```

```
Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile
    690                 695                 700

Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala
705                 710                 715                 720

Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
                725                 730                 735

Cys Gln Ser Ile Ile Ser Thr Leu Thr Gly Gly Gly Ser
            740                 745
```

<210> 43
<211> 726
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(726)
<223> Mature HSA (amino acid sequence)

<400> 43

```
Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1               5                   10                  15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20                  25                  30

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35                  40                  45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50                  55                  60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65                  70                  75                  80
```

```
Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100                 105                 110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115                 120                 125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130                 135                 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145                 150                 155                 160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
    210                 215                 220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
225                 230                 235                 240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
            260                 265                 270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
```

```
        275                 280                 285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
    290                 295                 300

Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr
            340                 345                 350

Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu
        355                 360                 365

Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480
```

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

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu Gly Gly Gly Ser Ala Pro Thr
            580                 585                 590

Ser Ser Ser Thr Lys Lys Thr Gln Leu Gln Leu Glu His Leu Leu Leu
        595                 600                 605

Asp Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys
    610                 615                 620

Leu Thr Arg Met Leu Thr Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr
625                 630                 635                 640

Glu Leu Lys His Leu Gln Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu
                645                 650                 655

Glu Val Leu Asn Leu Ala Gln Ser Lys Asn Phe His Leu Arg Pro Arg
            660                 665                 670

Asp Leu Ile Ser Asn Ile Asn Val Ile Val Leu Glu Leu Lys Gly Ser
```

675 680 685

Glu Thr Thr Phe Met Cys Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val
690 695 700

Glu Phe Leu Asn Arg Trp Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr
705 710 715 720

Leu Thr Gly Gly Gly Ser
725

<210> 44
<211> 287
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: PD-1

<400> 44

Met Gln Ile Pro Gln Ala Pro Trp Pro Val Val Trp Ala Val Leu Gln
1 5 10 15

Leu Gly Trp Arg Pro Gly Trp Phe Leu Asp Ser Pro Asp Pro Trp Asn
20 25 30

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

Ala Thr Phe Thr Cys Ser Phe Ser Asn Thr Ser Glu Ser Phe Val Leu
50 55 60

Asn Trp Tyr Arg Met Ser Pro Ser Asn Gln Thr Asp Lys Leu Ala Ala
65 70 75 80

Phe Pro Glu Asp Arg Ser Gln Pro Gly Gln Asp Cys Arg Phe Arg Val
85 90 95

Thr Gln Leu Pro Asn Gly Arg Asp Phe His Met Ser Val Val Arg Ala

```
            100                 105                 110

Arg Arg Asn Asp Ser Gly Thr Tyr Leu Cys Gly Ala Ile Ser Leu Ala
        115                 120                 125

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

Glu Arg Arg Ala Glu Val Pro Thr Ala His Pro Ser Pro Ser Pro Arg
145                 150                 155                 160

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

Leu Gly Ser Leu Val Leu Leu Val Trp Val Leu Ala Val Ile Cys Ser
            180                 185                 190

Arg Ala Ala Arg Gly Thr Ile Gly Ala Arg Arg Thr Gly Gln Pro Leu
        195                 200                 205

Lys Glu Asp Pro Ser Ala Val Pro Val Phe Ser Val Asp Tyr Gly Glu
    210                 215                 220

Leu Asp Phe Gln Trp Arg Glu Lys Thr Pro Glu Pro Pro Val Pro Cys
225                 230                 235                 240

Val Pro Glu Gln Thr Glu Tyr Ala Thr Ile Val Phe Pro Ser Gly Met
                245                 250                 255

Gly Thr Ser Ser Pro Ala Arg Arg Gly Ser Ala Asp Gly Pro Arg Ser
            260                 265                 270

Ala Gln Pro Leu Arg Pro Glu Asp Gly His Cys Ser Trp Pro Leu
        275                 280                 285
```

<210> 45
<211> 290
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: PD-L-1

<400> 45

Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu
1 5 10 15

Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr
20 25 30

Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu
35 40 45

Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile
50 55 60

Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser
65 70 75 80

Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn
85 90 95

Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr
100 105 110

Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val
115 120 125

Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val
130 135 140

Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr
145 150 155 160

Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser
165 170 175

```
Gly Lys Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn
            180                 185                 190

Val Thr Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr
        195                 200                 205

Cys Thr Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu
    210                 215                 220

Val Ile Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr His
225                 230                 235                 240

Leu Val Ile Leu Gly Ala Ile Leu Leu Cys Leu Gly Val Ala Leu Thr
                245                 250                 255

Phe Ile Phe Arg Leu Arg Lys Gly Arg Met Met Asp Val Lys Lys Cys
            260                 265                 270

Gly Ile Gln Asp Thr Asn Ser Lys Lys Gln Ser Asp Thr His Leu Glu
        275                 280                 285

Glu Thr
    290
```

<210> 46
<211> 223
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CTLA-4

<400> 46

```
Met Ala Cys Leu Gly Phe Gln Arg His Lys Ala Gln Leu Asn Leu Ala
1               5                   10                  15

Thr Arg Thr Trp Pro Cys Thr Leu Leu Phe Phe Leu Leu Phe Ile Pro
            20                  25                  30
```

```
Val Phe Cys Lys Ala Met His Val Ala Gln Pro Ala Val Val Leu Ala
        35                  40                  45

Ser Ser Arg Gly Ile Ala Ser Phe Val Cys Glu Tyr Ala Ser Pro Gly
    50                  55                  60

Lys Ala Thr Glu Val Arg Val Thr Val Leu Arg Gln Ala Asp Ser Gln
65                  70                  75                  80

Val Thr Glu Val Cys Ala Ala Thr Tyr Met Met Gly Asn Glu Leu Thr
                85                  90                  95

Phe Leu Asp Asp Ser Ile Cys Thr Gly Thr Ser Ser Gly Asn Gln Val
            100                 105                 110

Asn Leu Thr Ile Gln Gly Leu Arg Ala Met Asp Thr Gly Leu Tyr Ile
        115                 120                 125

Cys Lys Val Glu Leu Met Tyr Pro Pro Pro Tyr Tyr Leu Gly Ile Gly
    130                 135                 140

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

Asp Phe Leu Leu Trp Ile Leu Ala Ala Val Ser Ser Gly Leu Phe Phe
                165                 170                 175

Tyr Ser Phe Leu Leu Thr Ala Val Ser Leu Ser Lys Met Leu Lys Lys
            180                 185                 190

Arg Ser Pro Leu Thr Thr Gly Val Tyr Val Lys Met Pro Pro Thr Glu
        195                 200                 205

Pro Glu Cys Glu Lys Gln Phe Gln Pro Tyr Phe Ile Pro Ile Asn
    210                 215                 220
```

<210> 47

<211> 525
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAG3

<400> 47

```
Met Trp Glu Ala Gln Phe Leu Gly Leu Leu Phe Leu Gln Pro Leu Trp
1               5                  10                  15


Val Ala Pro Val Lys Pro Leu Gln Pro Gly Ala Glu Val Pro Val Val
            20                  25                  30


Trp Ala Gln Glu Gly Ala Pro Ala Gln Leu Pro Cys Ser Pro Thr Ile
        35                  40                  45


Pro Leu Gln Asp Leu Ser Leu Leu Arg Arg Ala Gly Val Thr Trp Gln
    50                  55                  60


His Gln Pro Asp Ser Gly Pro Pro Ala Ala Ala Pro Gly His Pro Leu
65                  70                  75                  80


Ala Pro Gly Pro His Pro Ala Ala Pro Ser Ser Trp Gly Pro Arg Pro
                85                  90                  95


Arg Arg Tyr Thr Val Leu Ser Val Gly Pro Gly Gly Leu Arg Ser Gly
            100                 105                 110


Arg Leu Pro Leu Gln Pro Arg Val Gln Leu Asp Glu Arg Gly Arg Gln
        115                 120                 125


Arg Gly Asp Phe Ser Leu Trp Leu Arg Pro Ala Arg Arg Ala Asp Ala
    130                 135                 140


Gly Glu Tyr Arg Ala Ala Val His Leu Arg Asp Arg Ala Leu Ser Cys
145                 150                 155                 160


Arg Leu Arg Leu Arg Leu Gly Gln Ala Ser Met Thr Ala Ser Pro Pro
```

```
                165                 170                 175

Gly Ser Leu Arg Ala Ser Asp Trp Val Ile Leu Asn Cys Ser Phe Ser
            180                 185                 190

Arg Pro Asp Arg Pro Ala Ser Val His Trp Phe Arg Asn Arg Gly Gln
        195                 200                 205

Gly Arg Val Pro Val Arg Glu Ser Pro His His His Leu Ala Glu Ser
    210                 215                 220

Phe Leu Phe Leu Pro Gln Val Ser Pro Met Asp Ser Gly Pro Trp Gly
225                 230                 235                 240

Cys Ile Leu Thr Tyr Arg Asp Gly Phe Asn Val Ser Ile Met Tyr Asn
                245                 250                 255

Leu Thr Val Leu Gly Leu Glu Pro Pro Thr Pro Leu Thr Val Tyr Ala
            260                 265                 270

Gly Ala Gly Ser Arg Val Gly Leu Pro Cys Arg Leu Pro Ala Gly Val
        275                 280                 285

Gly Thr Arg Ser Phe Leu Thr Ala Lys Trp Thr Pro Pro Gly Gly Gly
    290                 295                 300

Pro Asp Leu Leu Val Thr Gly Asp Asn Gly Asp Phe Thr Leu Arg Leu
305                 310                 315                 320

Glu Asp Val Ser Gln Ala Gln Ala Gly Thr Tyr Thr Cys His Ile His
                325                 330                 335

Leu Gln Glu Gln Gln Leu Asn Ala Thr Val Thr Leu Ala Ile Ile Thr
            340                 345                 350

Val Thr Pro Lys Ser Phe Gly Ser Pro Gly Ser Leu Gly Lys Leu Leu
        355                 360                 365
```

```
Cys Glu Val Thr Pro Val Ser Gly Gln Glu Arg Phe Val Trp Ser Ser
    370                 375                 380

Leu Asp Thr Pro Ser Gln Arg Ser Phe Ser Gly Pro Trp Leu Glu Ala
385                 390                 395                 400

Gln Glu Ala Gln Leu Leu Ser Gln Pro Trp Gln Cys Gln Leu Tyr Gln
                405                 410                 415

Gly Glu Arg Leu Leu Gly Ala Ala Val Tyr Phe Thr Glu Leu Ser Ser
            420                 425                 430

Pro Gly Ala Gln Arg Ser Gly Arg Ala Pro Gly Ala Leu Pro Ala Gly
        435                 440                 445

His Leu Leu Leu Phe Leu Ile Leu Gly Val Leu Ser Leu Leu Leu Leu
    450                 455                 460

Val Thr Gly Ala Phe Gly Phe His Leu Trp Arg Arg Gln Trp Arg Pro
465                 470                 475                 480

Arg Arg Phe Ser Ala Leu Glu Gln Gly Ile His Pro Pro Gln Ala Gln
                485                 490                 495

Ser Lys Ile Glu Glu Leu Glu Gln Glu Pro Glu Pro Glu Pro Glu Pro
            500                 505                 510

Glu Pro Glu Pro Glu Pro Glu Pro Glu Pro Glu Gln Leu
        515                 520                 525
```

<210> 48
<211> 300
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: TIM3

<400> 48

```
Met Phe Ser His Leu Pro Phe Asp Cys Val Leu Leu Leu Leu Leu Leu
1               5                  10                  15

Leu Leu Thr Arg Ser Ser Glu Val Glu Tyr Arg Ala Glu Val Gly Gln
            20                  25                  30

Asn Ala Tyr Leu Pro Cys Phe Tyr Thr Pro Ala Ala Pro Gly Asn Leu
        35                  40                  45

Val Pro Val Cys Trp Gly Lys Gly Ala Cys Pro Val Phe Glu Cys Gly
    50                  55                  60

Asn Val Val Leu Arg Thr Asp Glu Arg Asp Val Asn Tyr Trp Thr Ser
65                  70                  75                  80

Arg Tyr Trp Leu Asn Gly Asp Phe Arg Lys Gly Asp Val Ser Leu Thr
                85                  90                  95

Ile Glu Asn Val Thr Leu Ala Asp Ser Gly Ile Tyr Cys Cys Arg Ile
            100                 105                 110

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

Ile Lys Pro Ala Lys Val Thr Pro Ala Pro Thr Arg Gln Arg Asp Phe
    130                 135                 140

Thr Ala Ala Phe Pro Arg Met Leu Thr Thr Arg Gly His Gly Pro Ala
145                 150                 155                 160

Glu Thr Gln Thr Leu Gly Ser Leu Pro Asp Ile Asn Leu Thr Gln Ile
                165                 170                 175

Ser Thr Leu Ala Asn Glu Leu Arg Asp Ser Arg Leu Ala Asn Asp Leu
            180                 185                 190

Arg Asp Ser Gly Ala Thr Ile Arg Gly Ile Tyr Ile Gly Ala Gly Ile
```

```
        195                 200                 205

Cys Ala Gly Leu Ala Leu Ala Leu Ile Phe Gly Ala Leu Ile Phe Lys
    210                 215                 220

Trp Tyr Ser His Ser Lys Glu Lys Ile Gln Asn Leu Ser Leu Ile Ser
225                 230                 235                 240

Leu Ala Asn Leu Pro Pro Ser Gly Leu Ala Asn Ala Val Ala Glu Gly
                245                 250                 255

Ile Arg Ser Glu Glu Asn Ile Tyr Thr Ile Glu Glu Asn Val Tyr Glu
            260                 265                 270

Val Glu Glu Pro Asn Glu Tyr Tyr Cys Tyr Val Ser Ser Arg Gln Gln
        275                 280                 285

Pro Ser Gln Pro Leu Gly Cys Arg Phe Ala Met Pro
    290                 295                 300
```

<210> 49
<211> 532
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: B7-H3

<400> 49

```
Met Leu Arg Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly Ala
1               5                   10                  15

Ala Leu Gly Ala Leu Trp Phe Cys Leu Thr Gly Ala Leu Glu Val Gln
            20                  25                  30

Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala Thr Leu
        35                  40                  45

Cys Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Gln Leu Asn Leu
```

```
    50                  55                  60

Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser Phe Ala Glu
65                  70                  75                  80

Gly Gln Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala Leu Phe Pro
                85                  90                  95

Asp Leu Leu Ala Gln Gly Asn Ala Ser Leu Arg Leu Gln Arg Val Arg
            100                 105                 110

Val Ala Asp Glu Gly Ser Phe Cys Phe Val Ser Ile Arg Asp Phe Gly
        115                 120                 125

Ser Ala Ala Val Ser Leu Gln Val Ala Ala Pro Tyr Ser Lys Pro Ser
    130                 135                 140

Met Thr Leu Glu Pro Asn Lys Asp Leu Arg Pro Gly Asp Thr Val Thr
145                 150                 155                 160

Ile Thr Cys Ser Ser Tyr Gln Gly Tyr Pro Glu Ala Glu Val Phe Trp
                165                 170                 175

Gln Asp Gly Gln Gly Val Pro Leu Thr Gly Asn Val Thr Thr Ser Gln
            180                 185                 190

Met Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser Ile Leu Arg Val
        195                 200                 205

Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val Arg Asn Pro Val
    210                 215                 220

Leu Gln Gln Asp Ala His Ser Ser Val Thr Ile Thr Pro Gln Arg Ser
225                 230                 235                 240

Pro Thr Gly Ala Val Glu Val Gln Val Pro Glu Asp Pro Val Val Ala
                245                 250                 255
```

```
Leu Val Gly Thr Asp Ala Thr Leu Arg Cys Ser Phe Ser Pro Glu Pro
            260                 265                 270

Gly Phe Ser Leu Ala Gln Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr
        275                 280                 285

Lys Gln Leu Val His Ser Phe Thr Glu Gly Arg Asp Gln Gly Ser Ala
    290                 295                 300

Tyr Ala Asn Arg Thr Ala Leu Phe Pro Asp Leu Leu Ala Gln Gly Asn
305                 310                 315                 320

Ala Ser Leu Arg Leu Gln Arg Val Arg Val Ala Asp Glu Gly Ser Phe
                325                 330                 335

Thr Cys Phe Val Ser Ile Arg Asp Phe Gly Ser Ala Ala Val Ser Leu
            340                 345                 350

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

Lys Asp Leu Arg Pro Gly Asp Thr Val Thr Ile Thr Cys Ser Ser Tyr
    370                 375                 380

Arg Gly Tyr Pro Glu Ala Glu Val Phe Trp Gln Asp Gly Gln Gly Val
385                 390                 395                 400

Pro Leu Thr Gly Asn Val Thr Thr Ser Gln Met Ala Asn Glu Gln Gly
                405                 410                 415

Leu Phe Asp Val His Ser Val Leu Arg Val Val Leu Gly Ala Asn Gly
            420                 425                 430

Thr Tyr Ser Cys Leu Val Arg Asn Pro Val Leu Gln Gln Asp Ala His
        435                 440                 445

Gly Ser Val Thr Ile Thr Gly Gln Pro Met Thr Phe Pro Pro Glu Ala
```

```
    450                 455                 460

Leu Trp Val Thr Val Gly Leu Ser Val Cys Leu Ile Ala Leu Leu Val
465                 470                 475                 480

Ala Leu Ala Phe Val Cys Trp Arg Lys Ile Lys Gln Ser Cys Glu Glu
                485                 490                 495

Glu Asn Ala Gly Ala Glu Asp Gln Asp Gly Glu Gly Glu Gly Ser Lys
            500                 505                 510

Thr Ala Leu Gln Pro Leu Lys His Ser Asp Ser Lys Glu Asp Asp Gly
        515                 520                 525

Gln Glu Ile Ala
    530
```

<210> 50
<211> 166
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: B7-H4

<400> 50

```
Met Ala Ser Leu Gly Gln Ile Leu Phe Trp Ser Ile Ile Ser Ile Ile
1               5                   10                  15

Ile Ile Leu Ala Gly Ala Ile Ala Leu Ile Ile Gly Phe Gly Ile Ser
            20                  25                  30

Ala Phe Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu
        35                  40                  45

Thr Leu Arg Cys Glu Ala Pro Arg Trp Phe Pro Gln Pro Thr Val Val
    50                  55                  60

Trp Ala Ser Gln Val Asp Gln Gly Ala Asn Phe Ser Glu Val Ser Asn
```

65 70 75 80

Thr Ser Phe Glu Leu Asn Ser Glu Asn Val Thr Met Lys Val Val Ser
85 90 95

Val Leu Tyr Asn Val Thr Ile Asn Asn Thr Tyr Ser Cys Met Ile Glu
100 105 110

Asn Asp Ile Ala Lys Ala Thr Gly Asp Ile Lys Val Thr Glu Ser Glu
115 120 125

Ile Lys Arg Arg Ser His Leu Gln Leu Leu Asn Ser Lys Ala Ser Leu
130 135 140

Cys Val Ser Ser Phe Phe Ala Ile Ser Trp Ala Leu Leu Pro Leu Ser
145 150 155 160

Pro Tyr Leu Met Leu Lys
165

<210> 51
<211> 177
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: TNF-alpha extracellular domain

<400> 51

Gly Pro Gln Arg Glu Glu Phe Pro Arg Asp Leu Ser Leu Ile Ser Pro
1 5 10 15

Leu Ala Gln Ala Val Arg Ser Ser Ser Arg Thr Pro Ser Asp Lys Pro
20 25 30

Val Ala His Val Val Ala Asn Pro Gln Ala Glu Gly Gln Leu Gln Trp
35 40 45

Leu Asn Arg Arg Ala Asn Ala Leu Leu Ala Asn Gly Val Glu Leu Arg

```
    50                  55                  60

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

Gln Val Leu Phe Lys Gly Gln Gly Cys Pro Ser Thr His Val Leu Leu
                85                  90                  95

Thr His Thr Ile Ser Arg Ile Ala Val Ser Tyr Gln Thr Lys Val Asn
            100                 105                 110

Leu Leu Ser Ala Ile Lys Ser Pro Cys Gln Arg Glu Thr Pro Glu Gly
        115                 120                 125

Ala Glu Ala Lys Pro Trp Tyr Glu Pro Ile Tyr Leu Gly Gly Val Phe
    130                 135                 140

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

Tyr Leu Asp Phe Ala Glu Ser Gly Gln Val Tyr Phe Gly Ile Ile Ala
                165                 170                 175

Leu
```

<210> 52
<211> 182
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LIGHT extracellular domain

<400> 52

```
Leu Gln Leu His Trp Arg Leu Gly Glu Met Val Thr Arg Leu Pro Asp
1               5                   10                  15

Gly Pro Ala Gly Ser Trp Glu Gln Leu Ile Gln Glu Arg Arg Ser His
```

```
            20                  25                  30

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

Gly Ser Gly Gly Pro Leu Leu Trp Glu Thr Gln Leu Gly Leu Ala Phe
    50                  55                  60

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

Gly Tyr Tyr Tyr Ile Tyr Ser Lys Val Gln Leu Gly Gly Val Gly Cys
                85                  90                  95

Pro Leu Gly Leu Ala Ser Thr Ile Thr His Gly Leu Tyr Lys Arg Thr
            100                 105                 110

Pro Arg Tyr Pro Glu Glu Leu Glu Leu Leu Val Ser Gln Gln Ser Pro
        115                 120                 125

Cys Gly Arg Ala Thr Ser Ser Ser Arg Val Trp Trp Asp Ser Ser Phe
    130                 135                 140

Leu Gly Gly Val Val His Leu Glu Ala Gly Glu Lys Val Val Val Arg
145                 150                 155                 160

Val Leu Asp Glu Arg Leu Val Arg Leu Arg Asp Gly Thr Arg Ser Tyr
                165                 170                 175

Phe Gly Ala Phe Met Val
            180
```

<210> 53
<211> 171
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LT-alpha extracellular domain

<400> 53

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


His Pro Lys Met His Leu Ala His Ser Thr Leu Lys Pro Ala Ala His
            20                  25                  30


Leu Ile Gly Asp Pro Ser Lys Gln Asn Ser Leu Leu Trp Arg Ala Asn
        35                  40                  45


Thr Asp Arg Ala Phe Leu Gln Asp Gly Phe Ser Leu Ser Asn Asn Ser
    50                  55                  60


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


Phe Ser Gly Lys Ala Tyr Ser Pro Lys Ala Thr Ser Ser Pro Leu Tyr
                85                  90                  95


Leu Ala His Glu Val Gln Leu Phe Ser Ser Gln Tyr Pro Phe His Val
            100                 105                 110


Pro Leu Leu Ser Ser Gln Lys Met Val Tyr Pro Gly Leu Gln Glu Pro
        115                 120                 125


Trp Leu His Ser Met Tyr His Gly Ala Ala Phe Gln Leu Thr Gln Gly
    130                 135                 140


Asp Gln Leu Ser Thr His Thr Asp Gly Ile Pro His Leu Val Leu Ser
145                 150                 155                 160


Pro Ser Thr Val Phe Phe Gly Ala Phe Ala Leu
                165                 170
```

<210> 54
<211> 196
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: LT-beta extracellular domain

<400> 54

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


Ala Gln Gln Gly Leu Gly Phe Gln Lys Leu Pro Glu Glu Glu Pro Glu
            20                  25                  30


Thr Asp Leu Ser Pro Gly Leu Pro Ala Ala His Leu Ile Gly Ala Pro
        35                  40                  45


Leu Lys Gly Gln Gly Leu Gly Trp Glu Thr Thr Lys Glu Gln Ala Phe
    50                  55                  60


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


Gln Asp Gly Leu Tyr Tyr Leu Tyr Cys Leu Val Gly Tyr Arg Gly Arg
                85                  90                  95


Ala Pro Pro Gly Gly Gly Asp Pro Gln Gly Arg Ser Val Thr Leu Arg
            100                 105                 110


Ser Ser Leu Tyr Arg Ala Gly Gly Ala Tyr Gly Pro Gly Thr Pro Glu
        115                 120                 125


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


Arg Arg Gln Gly Tyr Gly Pro Leu Trp Tyr Thr Ser Val Gly Phe Gly
145                 150                 155                 160


Gly Leu Val Gln Leu Arg Arg Gly Glu Arg Val Tyr Val Asn Ile Ser
                165                 170                 175
```

His Pro Asp Met Val Asp Phe Ala Arg Gly Lys Thr Phe Phe Gly Ala
            180   185   190

Val Met Val Gly
        195

<210> 55
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: BTLA extracellular domain

<400> 55

Lys Glu Ser Cys Asp Val Gln Leu Tyr Ile Lys Arg Gln Ser Glu His
1   5   10   15

Ser Ile Leu Ala Gly Asp Pro Phe Glu Leu Glu Cys Pro Val Lys Tyr
            20   25   30

Cys Ala Asn Arg Pro His Val Thr Trp Cys Lys Leu Asn Gly Thr Thr
        35   40   45

Cys Val Lys Leu Glu Asp Arg Gln Thr Ser Trp Lys Glu Glu Lys Asn
    50   55   60

Ile Ser Phe Phe Ile Leu His Phe Glu Pro Val Leu Pro Asn Asp Asn
65   70   75   80

Gly Ser Tyr Arg Cys Ser Ala Asn Phe Gln Ser Asn Leu Ile Glu Ser
                85   90   95

His Ser Thr Thr Leu Tyr Val Thr Asp Val Lys Ser Ala Ser Glu Arg
            100   105   110

Pro Ser Lys Asp Glu Met Ala Ser Arg Pro Trp Leu Leu Tyr Arg
        115   120   125

<210> 56
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CD160 extracellular domain

<400> 56

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

Ile Cys Thr Val Trp His Lys Lys Glu Glu Ala Glu Gly Phe Val Val
20 25 30

Phe Leu Cys Lys Asp Arg Ser Gly Asp Cys Ser Pro Glu Thr Ser Leu
35 40 45

Lys Gln Leu Arg Leu Lys Arg Asp Pro Gly Ile Asp Gly Val Gly Glu
50 55 60

Ile Ser Ser Gln Leu Met Phe Thr Ile Ser Gln Val Thr Pro Leu His
65 70 75 80

Ser Gly Thr Tyr Gln Cys Cys Ala Arg Ser Gln Lys Ser Gly Ile Arg
85 90 95

Leu Gln Gly His Phe Phe Ser Ile Leu Phe Thr Glu Thr Gly Asn Tyr
100 105 110

Thr Val Thr Gly Leu Lys Gln Arg Gln His Leu Glu Phe Ser His Asn
115 120 125

Glu Gly Thr Leu Ser
130

<210> 57
<211> 149
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: CD40L extracellular domain

<400> 57

Met Gln Lys Gly Asp Gln Asn Pro Gln Ile Ala Ala His Val Ile Ser
1 5 10 15

Glu Ala Ser Ser Lys Thr Thr Ser Val Leu Gln Trp Ala Glu Lys Gly
20 25 30

Tyr Tyr Thr Met Ser Asn Asn Leu Val Thr Leu Glu Asn Gly Lys Gln
35 40 45

Leu Thr Val Lys Arg Gln Gly Leu Tyr Tyr Ile Tyr Ala Gln Val Thr
50 55 60

Phe Cys Ser Asn Arg Glu Ala Ser Ser Gln Ala Pro Phe Ile Ala Ser
65 70 75 80

Leu Cys Leu Lys Ser Pro Gly Arg Phe Glu Arg Ile Leu Leu Arg Ala
85 90 95

Ala Asn Thr His Ser Ser Ala Lys Pro Cys Gly Gln Gln Ser Ile His
100 105 110

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

Val Thr Asp Pro Ser Gln Val Ser His Gly Thr Gly Phe Thr Ser Phe
130 135 140

Gly Leu Leu Lys Leu
145

<210> 58
<211> 152
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: FasL extracellular domain

<400> 58

Gln Ile Gly His Pro Ser Pro Pro Pro Glu Lys Lys Glu Leu Arg Lys
1 5 10 15

Val Ala His Leu Thr Gly Lys Ser Asn Ser Arg Ser Met Pro Leu Glu
20 25 30

Trp Glu Asp Thr Tyr Gly Ile Val Leu Leu Ser Gly Val Lys Tyr Lys
35 40 45

Lys Gly Gly Leu Val Ile Asn Glu Thr Gly Leu Tyr Phe Val Tyr Ser
50 55 60

Lys Val Tyr Phe Arg Gly Gln Ser Cys Asn Asn Leu Pro Leu Ser His
65 70 75 80

Lys Val Tyr Met Arg Asn Ser Lys Tyr Pro Gln Asp Leu Val Met Met
85 90 95

Glu Gly Lys Met Met Ser Tyr Cys Thr Thr Gly Gln Met Trp Ala Arg
100 105 110

Ser Ser Tyr Leu Gly Ala Val Phe Asn Leu Thr Ser Ala Asp His Leu
115 120 125

Tyr Val Asn Val Ser Glu Leu Ser Leu Val Asn Phe Glu Glu Ser Gln
130 135 140

Thr Phe Phe Gly Leu Tyr Lys Leu
145 150

<210> 59
<211> 577
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: CD30L extracellular domain

<400> 59

```
Phe Pro Gln Asp Arg Pro Phe Glu Asp Thr Cys His Gly Asn Pro Ser
1               5                   10                  15


His Tyr Tyr Asp Lys Ala Val Arg Arg Cys Cys Tyr Arg Cys Pro Met
            20                  25                  30


Gly Leu Phe Pro Thr Gln Gln Cys Pro Gln Arg Pro Thr Asp Cys Arg
        35                  40                  45


Lys Gln Cys Glu Pro Asp Tyr Tyr Leu Asp Glu Ala Asp Arg Cys Thr
    50                  55                  60


Ala Cys Val Thr Cys Ser Arg Asp Asp Leu Val Glu Lys Thr Pro Cys
65                  70                  75                  80


Ala Trp Asn Ser Ser Arg Val Cys Glu Cys Arg Pro Gly Met Phe Cys
                85                  90                  95


Ser Thr Ser Ala Val Asn Ser Cys Ala Arg Cys Phe Phe His Ser Val
            100                 105                 110


Cys Pro Ala Gly Met Ile Val Lys Phe Pro Gly Thr Ala Gln Lys Asn
        115                 120                 125


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


Pro Glu Asn Cys Lys Glu Pro Ser Ser Gly Thr Ile Pro Gln Ala Lys
145                 150                 155                 160


Pro Thr Pro Val Ser Pro Ala Thr Ser Ser Ala Ser Thr Met Pro Val
                165                 170                 175
```

```
Arg Gly Gly Thr Arg Leu Ala Gln Glu Ala Ala Ser Lys Leu Thr Arg
            180                 185                 190

Ala Pro Asp Ser Pro Ser Ser Val Gly Arg Pro Ser Ser Asp Pro Gly
        195                 200                 205

Leu Ser Pro Thr Gln Pro Cys Pro Glu Gly Ser Gly Asp Cys Arg Lys
    210                 215                 220

Gln Cys Glu Pro Asp Tyr Tyr Leu Asp Glu Ala Gly Arg Cys Thr Ala
225                 230                 235                 240

Cys Val Ser Cys Ser Arg Asp Asp Leu Val Glu Lys Thr Pro Cys Ala
                245                 250                 255

Trp Asn Ser Ser Arg Thr Cys Glu Cys Arg Pro Gly Met Ile Cys Ala
            260                 265                 270

Thr Ser Ala Thr Asn Ser Cys Ala Arg Cys Val Pro Tyr Pro Ile Cys
        275                 280                 285

Ala Ala Glu Thr Val Thr Lys Pro Gln Asp Met Ala Glu Lys Asp Thr
    290                 295                 300

Thr Phe Glu Ala Pro Pro Leu Gly Thr Gln Pro Asp Cys Asn Pro Thr
305                 310                 315                 320

Pro Glu Asn Gly Glu Ala Pro Ala Ser Thr Ser Pro Thr Gln Ser Leu
                325                 330                 335

Leu Val Asp Ser Gln Ala Ser Lys Thr Leu Pro Ile Pro Thr Ser Ala
            340                 345                 350

Pro Val Ala Leu Ser Ser Thr Gly Lys Pro Val Leu Asp Ala Gly Pro
        355                 360                 365

Val Leu Phe Trp Val Ile Leu Val Leu Val Val Val Val Gly Ser Ser
```

```
    370                 375                 380

Ala Phe Leu Leu Cys His Arg Arg Ala Cys Arg Lys Arg Ile Arg Gln
385                 390                 395                 400

Lys Leu His Leu Cys Tyr Pro Val Gln Thr Ser Gln Pro Lys Leu Glu
                405                 410                 415

Leu Val Asp Ser Arg Pro Arg Arg Ser Ser Thr Gln Leu Arg Ser Gly
            420                 425                 430

Ala Ser Val Thr Glu Pro Val Ala Glu Glu Arg Gly Leu Met Ser Gln
        435                 440                 445

Pro Leu Met Glu Thr Cys His Ser Val Gly Ala Ala Tyr Leu Glu Ser
    450                 455                 460

Leu Pro Leu Gln Asp Ala Ser Pro Ala Gly Gly Pro Ser Ser Pro Arg
465                 470                 475                 480

Asp Leu Pro Glu Pro Arg Val Ser Thr Glu His Thr Asn Asn Lys Ile
                485                 490                 495

Glu Lys Ile Tyr Ile Met Lys Ala Asp Thr Val Ile Val Gly Thr Val
            500                 505                 510

Lys Ala Glu Leu Pro Glu Gly Arg Gly Leu Ala Gly Pro Ala Glu Pro
        515                 520                 525

Glu Leu Glu Glu Glu Leu Glu Ala Asp His Thr Pro His Tyr Pro Glu
    530                 535                 540

Gln Glu Thr Glu Pro Pro Leu Gly Ser Cys Ser Asp Val Met Leu Ser
545                 550                 555                 560

Val Glu Glu Glu Gly Lys Glu Asp Pro Leu Pro Thr Ala Ala Ser Gly
                565                 570                 575
```

Lys

<210> 60
<211> 205
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 4-1BBL extracellular domain

<400> 60

Ala Cys Pro Trp Ala Val Ser Gly Ala Arg Ala Ser Pro Gly Ser Ala
1 5 10 15

Ala Ser Pro Arg Leu Arg Glu Gly Pro Glu Leu Ser Pro Asp Asp Pro
20 25 30

Ala Gly Leu Leu Asp Leu Arg Gln Gly Met Phe Ala Gln Leu Val Ala
35 40 45

Gln Asn Val Leu Leu Ile Asp Gly Pro Leu Ser Trp Tyr Ser Asp Pro
50 55 60

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

Thr Lys Glu Leu Val Val Ala Lys Ala Gly Val Tyr Tyr Val Phe Phe
85 90 95

Gln Leu Glu Leu Arg Arg Val Val Ala Gly Glu Gly Ser Gly Ser Val
100 105 110

Ser Leu Ala Leu His Leu Gln Pro Leu Arg Ser Ala Ala Gly Ala Ala
115 120 125

Ala Leu Ala Leu Thr Val Asp Leu Pro Pro Ala Ser Ser Glu Ala Arg
130 135 140

```
Asn Ser Ala Phe Gly Phe Gln Gly Arg Leu Leu His Leu Ser Ala Gly
145                 150                 155                 160


Gln Arg Leu Gly Val His Leu His Thr Glu Ala Arg Ala Arg His Ala
                165                 170                 175


Trp Gln Leu Thr Gln Gly Ala Thr Val Leu Gly Leu Phe Arg Val Thr
            180                 185                 190


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

<210> 61
<211> 172
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CD27L extracellular domain

<400> 61

```
Ala Thr Pro Ala Pro Lys Ser Cys Pro Glu Arg His Tyr Trp Ala Gln
1               5                   10                  15


Gly Lys Leu Cys Cys Gln Met Cys Glu Pro Gly Thr Phe Leu Val Lys
            20                  25                  30


Asp Cys Asp Gln His Arg Lys Ala Ala Gln Cys Asp Pro Cys Ile Pro
        35                  40                  45


Gly Val Ser Phe Ser Pro Asp His His Thr Arg Pro His Cys Glu Ser
    50                  55                  60


Cys Arg His Cys Asn Ser Gly Leu Leu Val Arg Asn Cys Thr Ile Thr
65                  70                  75                  80


Ala Asn Ala Glu Cys Ala Cys Arg Asn Gly Trp Gln Cys Arg Asp Lys
                85                  90                  95
```

```
Glu Cys Thr Glu Cys Asp Pro Leu Pro Asn Pro Ser Leu Thr Ala Arg
            100                 105                 110

Ser Ser Gln Ala Leu Ser Pro His Pro Gln Pro Thr His Leu Pro Tyr
        115                 120                 125

Val Ser Glu Met Leu Glu Ala Arg Thr Ala Gly His Met Gln Thr Leu
    130                 135                 140

Ala Asp Phe Arg Gln Leu Pro Ala Arg Thr Leu Ser Thr His Trp Pro
145                 150                 155                 160

Pro Gln Arg Ser Leu Cys Ser Ser Asp Phe Ile Arg
                165                 170
```

<210> 62
<211> 186
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: OX40L extracellular domain

<400> 62

```
Leu His Cys Val Gly Asp Thr Tyr Pro Ser Asn Asp Arg Cys Cys His
1               5                   10                  15

Glu Cys Arg Pro Gly Asn Gly Met Val Ser Arg Cys Ser Arg Ser Gln
            20                  25                  30

Asn Thr Val Cys Arg Pro Cys Gly Pro Gly Phe Tyr Asn Asp Val Val
        35                  40                  45

Ser Ser Lys Pro Cys Lys Pro Cys Thr Trp Cys Asn Leu Arg Ser Gly
    50                  55                  60

Ser Glu Arg Lys Gln Leu Cys Thr Ala Thr Gln Asp Thr Val Cys Arg
65                  70                  75                  80
```

```
Cys Arg Ala Gly Thr Gln Pro Leu Asp Ser Tyr Lys Pro Gly Val Asp
                85                  90                  95


Cys Ala Pro Cys Pro Pro Gly His Phe Ser Pro Gly Asp Asn Gln Ala
            100                 105                 110


Cys Lys Pro Trp Thr Asn Cys Thr Leu Ala Gly Lys His Thr Leu Gln
        115                 120                 125


Pro Ala Ser Asn Ser Ser Asp Ala Ile Cys Glu Asp Arg Asp Pro Pro
    130                 135                 140


Ala Thr Gln Pro Gln Glu Thr Gln Gly Pro Pro Ala Arg Pro Ile Thr
145                 150                 155                 160


Val Gln Pro Thr Glu Ala Trp Pro Arg Thr Ser Gln Gly Pro Ser Thr
                165                 170                 175


Arg Pro Val Glu Val Pro Gly Gly Arg Ala
            180                 185


<210>  63
<211>  156
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: TWEAK extracellular domain

<400>  63

Ser Ala Pro Lys Gly Arg Lys Thr Arg Ala Arg Arg Ala Ile Ala Ala
1               5                   10                  15


His Tyr Glu Val His Pro Arg Pro Gly Gln Asp Gly Ala Gln Ala Gly
            20                  25                  30


Val Asp Gly Thr Val Ser Gly Trp Glu Glu Ala Arg Ile Asn Ser Ser
        35                  40                  45
```

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

Ala Gly Leu Tyr Tyr Leu Tyr Cys Gln Val His Phe Asp Glu Gly Lys
65                  70                  75                  80

Ala Val Tyr Leu Lys Leu Asp Leu Leu Val Asp Gly Val Leu Ala Leu
                85                  90                  95

Arg Cys Leu Glu Glu Phe Ser Ala Thr Ala Ala Ser Ser Leu Gly Pro
            100                 105                 110

Gln Leu Arg Leu Cys Gln Val Ser Gly Leu Leu Ala Leu Arg Pro Gly
        115                 120                 125

Ser Ser Leu Arg Ile Arg Thr Leu Pro Trp Ala His Leu Lys Ala Ala
    130                 135                 140

Pro Phe Leu Thr Tyr Phe Gly Leu Phe Gln Val His
145                 150                 155
```

<210> 64
<211> 146
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: APRIL extracellular domain

<400> 64

```
Ala Val Leu Thr Gln Lys Gln Lys Lys Gln His Ser Val Leu His Leu
1               5                   10                  15

Val Pro Ile Asn Ala Thr Ser Lys Asp Asp Ser Asp Val Thr Glu Val
            20                  25                  30

Met Trp Gln Pro Ala Leu Arg Arg Gly Arg Gly Leu Gln Ala Gln Gly
        35                  40                  45
```

```
Tyr Gly Val Arg Ile Gln Asp Ala Gly Val Tyr Leu Leu Tyr Ser Gln
    50                  55                  60

Val Leu Phe Gln Asp Val Thr Phe Thr Met Gly Gln Val Val Ser Arg
65                  70                  75                  80

Glu Gly Gln Gly Arg Gln Glu Thr Leu Phe Arg Cys Ile Arg Ser Met
                85                  90                  95

Pro Ser His Pro Asp Arg Ala Tyr Asn Ser Cys Tyr Ser Ala Gly Val
            100                 105                 110

Phe His Leu His Gln Gly Asp Ile Leu Ser Val Ile Ile Pro Arg Ala
        115                 120                 125

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

Lys Leu
145
```

<210> 65
<211> 152
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: BAFF extracellular domain

<400> 65

```
Ala Val Gln Gly Pro Glu Glu Thr Val Thr Gln Asp Cys Leu Gln Leu
1               5                   10                  15

Ile Ala Asp Ser Glu Thr Pro Thr Ile Gln Lys Gly Ser Tyr Thr Phe
            20                  25                  30

Val Pro Trp Leu Leu Ser Phe Lys Arg Gly Ser Ala Leu Glu Glu Lys
        35                  40                  45
```

```
Glu Asn Lys Ile Leu Val Lys Glu Thr Gly Tyr Phe Phe Ile Tyr Gly
    50                  55                  60

Gln Val Leu Tyr Thr Asp Lys Thr Tyr Ala Met Gly His Leu Ile Gln
65                  70                  75                  80

Arg Lys Lys Val His Val Phe Gly Asp Glu Leu Ser Leu Val Thr Leu
                85                  90                  95

Phe Arg Cys Ile Gln Asn Met Pro Glu Thr Leu Pro Asn Asn Ser Cys
            100                 105                 110

Tyr Ser Ala Gly Ile Ala Lys Leu Glu Glu Gly Asp Glu Leu Gln Leu
        115                 120                 125

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

Phe Phe Gly Ala Leu Lys Leu Leu
145                 150
```

<210> 66
<211> 249
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: RANKL extracellular domain

<400> 66

```
Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile Ser Glu Asp Gly Thr
1               5                   10                  15

His Cys Ile Tyr Arg Ile Leu Arg Leu His Glu Asn Ala Asp Phe Gln
            20                  25                  30

Asp Thr Thr Leu Glu Ser Gln Asp Thr Lys Leu Ile Pro Asp Ser Cys
        35                  40                  45
```

```
Arg Arg Ile Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln
    50                  55                  60

His Ile Val Gly Ser Gln His Ile Arg Ala Glu Lys Ala Met Val Asp
65                  70                  75                  80

Gly Ser Trp Leu Asp Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro
                85                  90                  95

Phe Ala His Leu Thr Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His
            100                 105                 110

Lys Val Ser Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile
        115                 120                 125

Ser Asn Met Thr Phe Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly
    130                 135                 140

Phe Tyr Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser
145                 150                 155                 160

Gly Asp Leu Ala Thr Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys
                165                 170                 175

Thr Ser Ile Lys Ile Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser
            180                 185                 190

Thr Lys Tyr Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn
        195                 200                 205

Val Gly Gly Phe Phe Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu
    210                 215                 220

Val Ser Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe
225                 230                 235                 240

Gly Ala Phe Lys Val Arg Asp Ile Asp
```

245

<210> 67
<211> 243
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: TRAIL extracellular domain

<400> 67

Thr Asn Glu Leu Lys Gln Met Gln Asp Lys Tyr Ser Lys Ser Gly Ile
1 5 10 15

Ala Cys Phe Leu Lys Glu Asp Asp Ser Tyr Trp Asp Pro Asn Asp Glu
20 25 30

Glu Ser Met Asn Ser Pro Cys Trp Gln Val Lys Trp Gln Leu Arg Gln
35 40 45

Leu Val Arg Lys Met Ile Leu Arg Thr Ser Glu Glu Thr Ile Ser Thr
50 55 60

Val Gln Glu Lys Gln Gln Asn Ile Ser Pro Leu Val Arg Glu Arg Gly
65 70 75 80

Pro Gln Arg Val Ala Ala His Ile Thr Gly Thr Arg Gly Arg Ser Asn
85 90 95

Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu Lys Ala Leu Gly Arg Lys
100 105 110

Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly His Ser Phe Leu Ser Asn
115 120 125

Leu His Leu Arg Asn Gly Glu Leu Val Ile His Glu Lys Gly Phe Tyr
130 135 140

Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe Gln Glu Glu Ile Lys Glu

145 150 155 160

Asn Thr Lys Asn Asp Lys Gln Met Val Gln Tyr Ile Tyr Lys Tyr Thr
165 170 175

Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys Ser Ala Arg Asn Ser Cys
180 185 190

Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr Ser Ile Tyr Gln Gly Gly
195 200 205

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

Glu His Leu Ile Asp Met Asp His Glu Ala Ser Phe Phe Gly Ala Phe
225 230 235 240

Leu Val Gly

<210> 68
<211> 329
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: EDA1 extracellular domain

<400> 68

Glu Leu Arg Ser Glu Leu Arg Arg Glu Arg Gly Ala Glu Ser Arg Leu
1 5 10 15

Gly Gly Ser Gly Thr Pro Gly Thr Ser Gly Thr Leu Ser Ser Leu Gly
20 25 30

Gly Leu Asp Pro Asp Ser Pro Ile Thr Ser His Leu Gly Gln Pro Ser
35 40 45

Pro Lys Gln Gln Pro Leu Glu Pro Gly Glu Ala Ala Leu His Ser Asp

```
    50                  55                  60

Ser Gln Asp Gly His Gln Met Ala Leu Leu Asn Phe Phe Phe Pro Asp
65                  70                  75                  80

Glu Lys Pro Tyr Ser Glu Glu Glu Ser Arg Arg Val Arg Arg Asn Lys
                85                  90                  95

Arg Ser Lys Ser Asn Glu Gly Ala Asp Gly Pro Val Lys Asn Lys Lys
            100                 105                 110

Lys Gly Lys Lys Ala Gly Pro Pro Gly Pro Asn Gly Pro Pro Gly Pro
        115                 120                 125

Pro Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly Ile Pro Gly Ile Pro
    130                 135                 140

Gly Ile Pro Gly Thr Thr Val Met Gly Pro Pro Gly Pro Pro Gly Pro
145                 150                 155                 160

Pro Gly Pro Gln Gly Pro Pro Gly Leu Gln Gly Pro Ser Gly Ala Ala
                165                 170                 175

Asp Lys Ala Gly Thr Arg Glu Asn Gln Pro Ala Val Val His Leu Gln
            180                 185                 190

Gly Gln Gly Ser Ala Ile Gln Val Lys Asn Asp Leu Ser Gly Gly Val
        195                 200                 205

Leu Asn Asp Trp Ser Arg Ile Thr Met Asn Pro Lys Val Phe Lys Leu
    210                 215                 220

His Pro Arg Ser Gly Glu Leu Glu Val Leu Val Asp Gly Thr Tyr Phe
225                 230                 235                 240

Ile Tyr Ser Gln Val Glu Val Tyr Tyr Ile Asn Phe Thr Asp Phe Ala
                245                 250                 255
```

Ser Tyr Glu Val Val Val Asp Glu Lys Pro Phe Leu Gln Cys Thr Arg
260 265 270

Ser Ile Glu Thr Gly Lys Thr Asn Tyr Asn Thr Cys Tyr Thr Ala Gly
275 280 285

Val Cys Leu Leu Lys Ala Arg Gln Lys Ile Ala Val Lys Met Val His
290 295 300

Ala Asp Ile Ser Ile Asn Met Ser Lys His Thr Thr Phe Phe Gly Ala
305 310 315 320

Ile Arg Leu Gly Glu Ala Pro Ala Ser
325

<210> 69
<211> 73
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: EDA2 extracellular domain

<400> 69

Glu Leu Arg Ser Glu Leu Arg Arg Glu Arg Gly Ala Glu Ser Arg Leu
1 5 10 15

Gly Gly Ser Gly Thr Pro Gly Thr Ser Gly Thr Leu Ser Ser Leu Gly
20 25 30

Gly Leu Asp Pro Asp Ser Pro Ile Thr Ser His Leu Gly Gln Pro Ser
35 40 45

Pro Lys Gln Gln Pro Leu Glu Pro Gly Glu Ala Ala Leu His Ser Asp
50 55 60

Ser Gln Asp Gly His Gln Gly His Gln
65 70

<210> 70
<211> 128
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: GITRL extracellular domain

<400> 70

Gln Leu Glu Thr Ala Lys Glu Pro Cys Met Ala Lys Phe Gly Pro Leu
1 5 10 15

Pro Ser Lys Trp Gln Met Ala Ser Ser Glu Pro Pro Cys Val Asn Lys
20 25 30

Val Ser Asp Trp Lys Leu Glu Ile Leu Gln Asn Gly Leu Tyr Leu Ile
35 40 45

Tyr Gly Gln Val Ala Pro Asn Ala Asn Tyr Asn Asp Val Ala Pro Phe
50 55 60

Glu Val Arg Leu Tyr Lys Asn Lys Asp Met Ile Gln Thr Leu Thr Asn
65 70 75 80

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

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

Asn Thr Tyr Trp Gly Ile Ile Leu Leu Ala Asn Pro Gln Phe Ile Ser
115 120 125

<210> 71
<211> 208
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CD80 (B7-1) extracellular domain

<400> 71

```
Val Ile His Val Thr Lys Glu Val Lys Glu Val Ala Thr Leu Ser Cys
1               5                   10                  15

Gly His Asn Val Ser Val Glu Glu Leu Ala Gln Thr Arg Ile Tyr Trp
            20                  25                  30

Gln Lys Glu Lys Lys Met Val Leu Thr Met Met Ser Gly Asp Met Asn
        35                  40                  45

Ile Trp Pro Glu Tyr Lys Asn Arg Thr Ile Phe Asp Ile Thr Asn Asn
    50                  55                  60

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

Glu Cys Val Val Leu Lys Tyr Glu Lys Asp Ala Phe Lys Arg Glu His
                85                  90                  95

Leu Ala Glu Val Thr Leu Ser Val Lys Ala Asp Phe Pro Thr Pro Ser
            100                 105                 110

Ile Ser Asp Phe Glu Ile Pro Thr Ser Asn Ile Arg Arg Ile Ile Cys
        115                 120                 125

Ser Thr Ser Gly Gly Phe Pro Glu Pro His Leu Ser Trp Leu Glu Asn
    130                 135                 140

Gly Glu Glu Leu Asn Ala Ile Asn Thr Thr Val Ser Gln Asp Pro Glu
145                 150                 155                 160

Thr Glu Leu Tyr Ala Val Ser Ser Lys Leu Asp Phe Asn Met Thr Thr
                165                 170                 175

Asn His Ser Phe Met Cys Leu Ile Lys Tyr Gly His Leu Arg Val Asn
            180                 185                 190
```

Gln Thr Phe Asn Trp Asn Thr Thr Lys Gln Glu His Phe Pro Asp Asn
        195   200   205

<210> 72
<211> 224
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CD86 (B7-2) extracellular domain

<400> 72

Ala Pro Leu Lys Ile Gln Ala Tyr Phe Asn Glu Thr Ala Asp Leu Pro
1   5   10   15

Cys Gln Phe Ala Asn Ser Gln Asn Gln Ser Leu Ser Glu Leu Val Val
            20   25   30

Phe Trp Gln Asp Gln Glu Asn Leu Val Leu Asn Glu Val Tyr Leu Gly
        35   40   45

Lys Glu Lys Phe Asp Ser Val His Ser Lys Tyr Met Gly Arg Thr Ser
    50   55   60

Phe Asp Ser Asp Ser Trp Thr Leu Arg Leu His Asn Leu Gln Ile Lys
65   70   75   80

Asp Lys Gly Leu Tyr Gln Cys Ile Ile His His Lys Lys Pro Thr Gly
                85   90   95

Met Ile Arg Ile His Gln Met Asn Ser Glu Leu Ser Val Leu Ala Asn
            100   105   110

Phe Ser Gln Pro Glu Ile Val Pro Ile Ser Asn Ile Thr Glu Asn Val
        115   120   125

Tyr Ile Asn Leu Thr Cys Ser Ser Ile His Gly Tyr Pro Glu Pro Lys
    130   135   140

```
Lys Met Ser Val Leu Leu Arg Thr Lys Asn Ser Thr Ile Glu Tyr Asp
145                 150                 155                 160


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


Ser Ile Ser Leu Ser Val Ser Phe Pro Asp Val Thr Ser Asn Met Thr
            180                 185                 190


Ile Phe Cys Ile Leu Glu Thr Asp Lys Thr Arg Leu Leu Ser Ser Pro
        195                 200                 205


Phe Ser Ile Glu Leu Glu Asp Pro Gln Pro Pro Pro Asp His Ile Pro
    210                 215                 220


<210>  73
<211>  238
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: ICOSLG extracellular domain

<400>  73

Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp Val Glu
1               5                   10                  15


Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn Asp Val
            20                  25                  30


Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr Tyr His
        35                  40                  45


Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr Arg Asn
    50                  55                  60


Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe Ser Leu
65                  70                  75                  80
```

```
Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His Cys Leu
                85                  90                  95

Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Val Glu Val
            100                 105                 110

Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser Ala Pro
        115                 120                 125

His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser Ile Asn
    130                 135                 140

Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp Asn Ser
145                 150                 155                 160

Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn Met Arg
                165                 170                 175

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

Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln Asn Leu
        195                 200                 205

Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp Lys Ile
    210                 215                 220

Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr
225                 230                 235
```

<210> 74
<211> 284
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MICA extracellular domain

<400> 74

```
Glu Pro His Ser Leu Arg Tyr Asn Leu Thr Val Leu Ser Trp Asp Gly
1               5                  10                  15

Ser Val Gln Ser Gly Phe Leu Thr Glu Val His Leu Asp Gly Gln Pro
            20                  25                  30

Phe Leu Arg Cys Asp Arg Gln Lys Cys Arg Ala Lys Pro Gln Gly Gln
        35                  40                  45

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

Asp Leu Thr Gly Asn Gly Lys Asp Leu Arg Met Thr Leu Ala His Ile
65                  70                  75                  80

Lys Asp Gln Lys Glu Gly Leu His Ser Leu Gln Glu Ile Arg Val Cys
                85                  90                  95

Glu Ile His Glu Asp Asn Ser Thr Arg Ser Ser Gln His Phe Tyr Tyr
            100                 105                 110

Asp Gly Glu Leu Phe Leu Ser Gln Asn Leu Glu Thr Lys Glu Trp Thr
        115                 120                 125

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

Phe Leu Lys Glu Asp Ala Met Lys Thr Lys Thr His Tyr His Ala Met
145                 150                 155                 160

His Ala Asp Cys Leu Gln Glu Leu Arg Arg Tyr Leu Lys Ser Gly Val
                165                 170                 175

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

Ala Ser Glu Gly Asn Ile Thr Val Thr Cys Arg Ala Ser Gly Phe Tyr
```

195 200 205

Pro Trp Asn Ile Thr Leu Ser Trp Arg Gln Asp Gly Val Ser Leu Ser
210 215 220

His Asp Thr Gln Gln Trp Gly Asp Val Leu Pro Asp Gly Asn Gly Thr
225 230 235 240

Tyr Gln Thr Trp Val Ala Thr Arg Ile Cys Gln Gly Glu Glu Gln Arg
245 250 255

Phe Thr Cys Tyr Met Glu His Ser Gly Asn His Ser Thr His Pro Val
260 265 270

Pro Ser Gly Lys Val Leu Val Leu Gln Ser His Trp
275 280

<210> 75
<211> 287
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MICB extracellular domain

<400> 75

Ala Glu Pro His Ser Leu Arg Tyr Asn Leu Met Val Leu Ser Gln Asp
1 5 10 15

Glu Ser Val Gln Ser Gly Phe Leu Ala Glu Gly His Leu Asp Gly Gln
20 25 30

Pro Phe Leu Arg Tyr Asp Arg Gln Lys Arg Arg Ala Lys Pro Gln Gly
35 40 45

Gln Trp Ala Glu Asp Val Leu Gly Ala Lys Thr Trp Asp Thr Glu Thr
50 55 60

Glu Asp Leu Thr Glu Asn Gly Gln Asp Leu Arg Arg Thr Leu Thr His

```
65                  70                  75                  80

Ile Lys Asp Gln Lys Gly Gly Leu His Ser Leu Gln Glu Ile Arg Val
                85                  90                  95

Cys Glu Ile His Glu Asp Ser Ser Thr Arg Gly Ser Arg His Phe Tyr
            100                 105                 110

Tyr Asp Gly Glu Leu Phe Leu Ser Gln Asn Leu Glu Thr Gln Glu Ser
        115                 120                 125

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

Asn Phe Trp Lys Glu Asp Ala Met Lys Thr Lys Thr His Tyr Arg Ala
145                 150                 155                 160

Met Gln Ala Asp Cys Leu Gln Lys Leu Gln Arg Tyr Leu Lys Ser Gly
                165                 170                 175

Val Ala Ile Arg Arg Thr Val Pro Pro Met Val Asn Val Thr Cys Ser
            180                 185                 190

Glu Val Ser Glu Gly Asn Ile Thr Val Thr Cys Arg Ala Ser Ser Phe
        195                 200                 205

Tyr Pro Arg Asn Ile Thr Leu Thr Trp Arg Gln Asp Gly Val Ser Leu
    210                 215                 220

Ser His Asn Thr Gln Gln Trp Gly Asp Val Leu Pro Asp Gly Asn Gly
225                 230                 235                 240

Thr Tyr Gln Thr Trp Val Ala Thr Arg Ile Arg Gln Gly Glu Glu Gln
                245                 250                 255

Arg Phe Thr Cys Tyr Met Glu His Ser Gly Asn His Gly Thr His Pro
            260                 265                 270
```

Val Pro Ser Gly Lys Val Leu Val Leu Gln Ser Gln Arg Thr Asp
        275   280   285

<210> 76
<211> 191
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ULBP1 extracellular domain

<400> 76

Gly Trp Val Asp Thr His Cys Leu Cys Tyr Asp Phe Ile Ile Thr Pro
1   5   10   15

Lys Ser Arg Pro Glu Pro Gln Trp Cys Glu Val Gln Gly Leu Val Asp
            20   25   30

Glu Arg Pro Phe Leu His Tyr Asp Cys Val Asn His Lys Ala Lys Ala
        35   40   45

Phe Ala Ser Leu Gly Lys Lys Val Asn Val Thr Lys Thr Trp Glu Glu
    50   55   60

Gln Thr Glu Thr Leu Arg Asp Val Val Asp Phe Leu Lys Gly Gln Leu
65   70   75   80

Leu Asp Ile Gln Val Glu Asn Leu Ile Pro Ile Glu Pro Leu Thr Leu
                85   90   95

Gln Ala Arg Met Ser Cys Glu His Glu Ala His Gly His Gly Arg Gly
            100   105   110

Ser Trp Gln Phe Leu Phe Asn Gly Gln Lys Phe Leu Leu Phe Asp Ser
        115   120   125

Asn Asn Arg Lys Trp Thr Ala Leu His Pro Gly Ala Lys Lys Met Thr
    130   135   140

```
Glu Lys Trp Glu Lys Asn Arg Asp Val Thr Met Phe Phe Gln Lys Ile
145                 150                 155                 160


Ser Leu Gly Asp Cys Lys Met Trp Leu Glu Glu Phe Leu Met Tyr Trp
                165                 170                 175


Glu Gln Met Leu Asp Pro Thr Lys Pro Pro Ser Leu Ala Pro Gly
            180                 185                 190


<210>  77
<211>  191
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: ULBP2 extracellular domain

<400>  77

Gly Arg Ala Asp Pro His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro
1               5                   10                  15


Lys Phe Arg Pro Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp
            20                  25                  30


Glu Lys Thr Phe Leu His Tyr Asp Cys Gly Asn Lys Thr Val Thr Pro
        35                  40                  45


Val Ser Pro Leu Gly Lys Lys Leu Asn Val Thr Thr Ala Trp Lys Ala
    50                  55                  60


Gln Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
65                  70                  75                  80


Arg Asp Ile Gln Leu Glu Asn Tyr Thr Pro Lys Glu Pro Leu Thr Leu
                85                  90                  95


Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Ser Ser Gly
            100                 105                 110
```

Ser Trp Gln Phe Ser Phe Asp Gly Gln Ile Phe Leu Leu Phe Asp Ser
        115   120   125

Glu Lys Arg Met Trp Thr Thr Val His Pro Gly Ala Arg Lys Met Lys
    130   135   140

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

Ser Met Gly Asp Cys Ile Gly Trp Leu Glu Asp Phe Leu Met Gly Met
                165   170   175

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

<210> 78
<211> 188
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ULBP3 extracellular domain

<400> 78

Asp Ala His Ser Leu Trp Tyr Asn Phe Thr Ile Ile His Leu Pro Arg
1   5   10   15

His Gly Gln Gln Trp Cys Glu Val Gln Ser Gln Val Asp Gln Lys Asn
            20   25   30

Phe Leu Ser Tyr Asp Cys Gly Ser Asp Lys Val Leu Ser Met Gly His
        35   40   45

Leu Glu Glu Gln Leu Tyr Ala Thr Asp Ala Trp Gly Lys Gln Leu Glu
    50   55   60

Met Leu Arg Glu Val Gly Gln Arg Leu Arg Leu Glu Leu Ala Asp Thr
65   70   75   80

```
Glu Leu Glu Asp Phe Thr Pro Ser Gly Pro Leu Thr Leu Gln Val Arg
                85                  90                  95


Met Ser Cys Glu Cys Glu Ala Asp Gly Tyr Ile Arg Gly Ser Trp Gln
            100                 105                 110


Phe Ser Phe Asp Gly Arg Lys Phe Leu Leu Phe Asp Ser Asn Asn Arg
        115                 120                 125


Lys Trp Thr Val Val His Ala Gly Ala Arg Arg Met Lys Glu Lys Trp
    130                 135                 140


Glu Lys Asp Ser Gly Leu Thr Thr Phe Phe Lys Met Val Ser Met Arg
145                 150                 155                 160


Asp Cys Lys Ser Trp Leu Arg Asp Phe Leu Met His Arg Lys Lys Arg
                165                 170                 175


Leu Glu Pro Thr Ala Pro Pro Thr Met Ala Pro Gly
            180                 185
```

<210> 79
<211> 195
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ULBP4 extracellular domain

<400> 79

```
His Ser Leu Cys Phe Asn Phe Thr Ile Lys Ser Leu Ser Arg Pro Gly
1               5                   10                  15


Gln Pro Trp Cys Glu Ala Gln Val Phe Leu Asn Lys Asn Leu Phe Leu
            20                  25                  30


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

```
Lys Lys Val Tyr Ala Thr Ser Thr Trp Gly Glu Leu Thr Gln Thr Leu
    50                  55                  60

Gly Glu Val Gly Arg Asp Leu Arg Met Leu Leu Cys Asp Ile Lys Pro
65                  70                  75                  80

Gln Ile Lys Thr Ser Asp Pro Ser Thr Leu Gln Val Glu Met Phe Cys
                85                  90                  95

Gln Arg Glu Ala Glu Arg Cys Thr Gly Ala Ser Trp Gln Phe Ala Thr
            100                 105                 110

Asn Gly Glu Lys Ser Leu Leu Phe Asp Ala Met Asn Met Thr Trp Thr
        115                 120                 125

Val Ile Asn His Glu Ala Ser Lys Ile Lys Glu Thr Trp Lys Lys Asp
    130                 135                 140

Arg Gly Leu Glu Lys Tyr Phe Arg Lys Leu Ser Lys Gly Asp Cys Asp
145                 150                 155                 160

His Trp Leu Arg Glu Phe Leu Gly His Trp Glu Ala Met Pro Glu Pro
                165                 170                 175

Thr Val Ser Pro Val Asn Ala Ser Asp Ile His Trp Ser Ser Ser Ser
            180                 185                 190

Leu Pro Asp
        195
```

<210> 80
<211> 193
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ULBP5, isoform 1 extracellular domain

<400> 80

```
Gly Leu Ala Asp Pro His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro
1               5                  10                  15

Lys Phe Arg Pro Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp
            20                  25                  30

Glu Lys Thr Phe Leu His Tyr Asp Cys Gly Ser Lys Thr Val Thr Pro
        35                  40                  45

Val Ser Pro Leu Gly Lys Lys Leu Asn Val Thr Thr Ala Trp Lys Ala
    50                  55                  60

Gln Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
65                  70                  75                  80

Leu Asp Ile Gln Leu Glu Asn Tyr Ile Pro Lys Glu Pro Leu Thr Leu
                85                  90                  95

Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Gly Ser Gly
            100                 105                 110

Ser Trp Gln Leu Ser Phe Asp Gly Gln Ile Phe Leu Leu Phe Asp Ser
        115                 120                 125

Glu Asn Arg Met Trp Thr Thr Val His Pro Gly Ala Arg Lys Met Lys
    130                 135                 140

Glu Lys Trp Glu Asn Asp Lys Asp Met Thr Met Ser Phe His Tyr Ile
145                 150                 155                 160

Ser Met Gly Asp Cys Thr Gly Trp Leu Glu Asp Phe Leu Met Gly Met
                165                 170                 175

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

Gly
```

<210> 81
<211> 188
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ULBP5, isoform 2 extracellular domain

<400> 81

```
Gly Leu Ala Asp Pro His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro
1               5                  10                  15


Lys Phe Arg Pro Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp
            20                  25                  30


Glu Lys Thr Phe Leu His Tyr Asp Cys Gly Ser Lys Thr Val Thr Pro
        35                  40                  45


Val Ser Pro Leu Gly Lys Lys Leu Asn Val Thr Thr Ala Trp Lys Ala
    50                  55                  60


Gln Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
65                  70                  75                  80


Leu Asp Ile Gln Leu Glu Asn Tyr Ile Pro Lys Glu Pro Leu Thr Leu
                85                  90                  95


Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Gly Ser Gly
            100                 105                 110


Ser Trp Gln Leu Ser Phe Asp Gly Gln Ile Phe Leu Leu Phe Asp Ser
        115                 120                 125


Glu Asn Arg Met Trp Thr Thr Val His Pro Gly Ala Arg Lys Met Lys
    130                 135                 140


Glu Lys Trp Glu Asn Asp Lys Asp Met Thr Met Ser Phe His Tyr Ile
```

145 150 155 160

Ser Met Gly Asp Cys Thr Gly Trp Leu Glu Asp Phe Leu Met Gly Met
165 170 175

Asp Ser Thr Leu Glu Pro Ser Ala Gly Gly Thr Val
180 185

<210> 82
<211> 193
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ULBP6 extracellular domain

<400> 82

Arg Arg Asp Asp Pro His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro
1 5 10 15

Lys Phe Arg Pro Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp
20 25 30

Glu Lys Thr Phe Leu His Tyr Asp Cys Gly Asn Lys Thr Val Thr Pro
35 40 45

Val Ser Pro Leu Gly Lys Lys Leu Asn Val Thr Met Ala Trp Lys Ala
50 55 60

Gln Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
65 70 75 80

Leu Asp Ile Gln Leu Glu Asn Tyr Thr Pro Lys Glu Pro Leu Thr Leu
85 90 95

Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Ser Ser Gly
100 105 110

Ser Trp Gln Phe Ser Ile Asp Gly Gln Thr Phe Leu Leu Phe Asp Ser

```
        115                 120                 125

Glu Lys Arg Met Trp Thr Thr Val His Pro Gly Ala Arg Lys Met Lys
    130                 135                 140

Glu Lys Trp Glu Asn Asp Lys Asp Val Ala Met Ser Phe His Tyr Ile
145                 150                 155                 160

Ser Met Gly Asp Cys Ile Gly Trp Leu Glu Asp Phe Leu Met Gly Met
                165                 170                 175

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

Gly
```

<210> 83
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: SLAMF1 extracellular domain

<400> 83

```
Ala Ser Tyr Gly Thr Gly Gly Arg Met Met Asn Cys Pro Lys Ile Leu
1               5                   10                  15

Arg Gln Leu Gly Ser Lys Val Leu Leu Pro Leu Thr Tyr Glu Arg Ile
            20                  25                  30

Asn Lys Ser Met Asn Lys Ser Ile His Ile Val Val Thr Met Ala Lys
        35                  40                  45

Ser Leu Glu Asn Ser Val Glu Asn Lys Ile Val Ser Leu Asp Pro Ser
    50                  55                  60

Glu Ala Gly Pro Pro Arg Tyr Leu Gly Asp Arg Tyr Lys Phe Tyr Leu
```

65 70 75 80

Glu Asn Leu Thr Leu Gly Ile Arg Glu Ser Arg Lys Glu Asp Glu Gly
85 90 95

Trp Tyr Leu Met Thr Leu Glu Lys Asn Val Ser Val Gln Arg Phe Cys
100 105 110

Leu Gln Leu Arg Leu Tyr Glu Gln Val Ser Thr Pro Glu Ile Lys Val
115 120 125

Leu Asn Lys Thr Gln Glu Asn Gly Thr Cys Thr Leu Ile Leu Gly Cys
130 135 140

Thr Val Glu Lys Gly Asp His Val Ala Tyr Ser Trp Ser Glu Lys Ala
145 150 155 160

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

Thr Leu Gly Pro Gln His Ala Asp Asn Ile Tyr Ile Cys Thr Val Ser
180 185 190

Asn Pro Ile Ser Asn Asn Ser Gln Thr Phe Ser Pro Trp Pro Gly Cys
195 200 205

Arg Thr Asp Pro Ser Glu Thr Lys Pro
210 215

<210> 84
<211> 194
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: SLAMF2 extracellular domain

<400> 84

Gln Gly His Leu Val His Met Thr Val Val Ser Gly Ser Asn Val Thr

```
1               5                   10                  15

Leu Asn Ile Ser Glu Ser Leu Pro Glu Asn Tyr Lys Gln Leu Thr Trp
            20                  25                  30

Phe Tyr Thr Phe Asp Gln Lys Ile Val Glu Trp Asp Ser Arg Lys Ser
        35                  40                  45

Lys Tyr Phe Glu Ser Lys Phe Lys Gly Arg Val Arg Leu Asp Pro Gln
    50                  55                  60

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

Tyr Ile Met Arg Val Leu Lys Lys Thr Gly Asn Glu Gln Glu Trp Lys
                85                  90                  95

Ile Lys Leu Gln Val Leu Asp Pro Val Pro Lys Pro Val Ile Lys Ile
            100                 105                 110

Glu Lys Ile Glu Asp Met Asp Asp Asn Cys Tyr Leu Lys Leu Ser Cys
        115                 120                 125

Val Ile Pro Gly Glu Ser Val Asn Tyr Thr Trp Tyr Gly Asp Lys Arg
    130                 135                 140

Pro Phe Pro Lys Glu Leu Gln Asn Ser Val Leu Glu Thr Thr Leu Met
145                 150                 155                 160

Pro His Asn Tyr Ser Arg Cys Tyr Thr Cys Gln Val Ser Asn Ser Val
                165                 170                 175

Ser Ser Lys Asn Gly Thr Val Cys Leu Ser Pro Pro Cys Thr Leu Ala
            180                 185                 190

Arg Ser
```

<210> 85
<211> 407
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: SLAMF3 extracellular domain

<400> 85

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

Thr Leu Pro Leu Asn Ile Ser Val Asp Thr Glu Ile Glu Asn Val Ile
            20   25   30

Trp Ile Gly Pro Lys Asn Ala Leu Ala Phe Ala Arg Pro Lys Glu Asn
        35   40   45

Val Thr Ile Met Val Lys Ser Tyr Leu Gly Arg Leu Asp Ile Thr Lys
    50   55   60

Trp Ser Tyr Ser Leu Cys Ile Ser Asn Leu Thr Leu Asn Asp Ala Gly
65   70   75   80

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

Glu Glu Phe Thr Leu Phe Val Tyr Glu Gln Leu Gln Glu Pro Gln Val
            100   105   110

Thr Met Lys Ser Val Lys Val Ser Glu Asn Phe Ser Cys Asn Ile Thr
        115   120   125

Leu Met Cys Ser Val Lys Gly Ala Glu Lys Ser Val Leu Tyr Ser Trp
    130   135   140

Thr Pro Arg Glu Pro His Ala Ser Glu Ser Asn Gly Gly Ser Ile Leu
145   150   155   160

```
Thr Val Ser Arg Thr Pro Cys Asp Pro Asp Leu Pro Tyr Ile Cys Thr
                165                 170                 175

Ala Gln Asn Pro Val Ser Gln Arg Ser Ser Leu Pro Val His Val Gly
            180                 185                 190

Gln Phe Cys Thr Asp Pro Gly Ala Ser Arg Gly Gly Thr Thr Gly Glu
        195                 200                 205

Thr Val Val Gly Val Leu Gly Glu Pro Val Thr Leu Pro Leu Ala Leu
    210                 215                 220

Pro Ala Cys Arg Asp Thr Glu Lys Val Val Trp Leu Phe Asn Thr Ser
225                 230                 235                 240

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

Lys Ser Arg Asp Pro Tyr Lys Asn Arg Val Trp Val Ser Ser Gln Asp
            260                 265                 270

Cys Ser Leu Lys Ile Ser Gln Leu Lys Ile Glu Asp Ala Gly Pro Tyr
        275                 280                 285

His Ala Tyr Val Cys Ser Glu Ala Ser Ser Val Thr Ser Met Thr His
    290                 295                 300

Val Thr Leu Leu Ile Tyr Arg Arg Leu Arg Lys Pro Lys Ile Thr Trp
305                 310                 315                 320

Ser Leu Arg His Ser Glu Asp Gly Ile Cys Arg Ile Ser Leu Thr Cys
                325                 330                 335

Ser Val Glu Asp Gly Gly Asn Thr Val Met Tyr Thr Trp Thr Pro Leu
            340                 345                 350

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

```
        355                 360                 365

Trp Arg Ser Ser Glu Asn His Pro Asn Leu Thr Cys Thr Ala Ser Asn
    370                 375                 380

Pro Val Ser Arg Ser Ser His Gln Phe Leu Ser Glu Asn Ile Cys Ser
385                 390                 395                 400

Gly Pro Glu Arg Asn Thr Lys
                405
```

<210> 86
<211> 208
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: SLAMF4 extracellular domain

<400> 86

```
Cys Gln Gly Ser Ala Asp His Val Val Ser Ile Ser Gly Val Pro Leu
1               5                   10                  15

Gln Leu Gln Pro Asn Ser Ile Gln Thr Lys Val Asp Ser Ile Ala Trp
            20                  25                  30

Lys Lys Leu Leu Pro Ser Gln Asn Gly Phe His His Ile Leu Lys Trp
        35                  40                  45

Glu Asn Gly Ser Leu Pro Ser Asn Thr Ser Asn Asp Arg Phe Ser Phe
    50                  55                  60

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

Ser Gly Leu Tyr Cys Leu Glu Val Thr Ser Ile Ser Gly Lys Val Gln
                85                  90                  95

Thr Ala Thr Phe Gln Val Phe Val Phe Glu Ser Leu Leu Pro Asp Lys
```

100 105 110

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

Arg Cys Gln Val Ala Leu Ser Cys Leu Val Ser Arg Asp Gly Asn Val
130 135 140

Ser Tyr Ala Trp Tyr Arg Gly Ser Lys Leu Ile Gln Thr Ala Gly Asn
145 150 155 160

Leu Thr Tyr Leu Asp Glu Glu Val Asp Ile Asn Gly Thr His Thr Tyr
165 170 175

Thr Cys Asn Val Ser Asn Pro Val Ser Trp Glu Ser His Thr Leu Asn
180 185 190

Leu Thr Gln Asp Cys Gln Asn Ala His Gln Glu Phe Arg Phe Trp Pro
195 200 205

<210> 87
<211> 204
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: SLAMF5 extracellular domain

<400> 87

Lys Asp Ser Glu Ile Phe Thr Val Asn Gly Ile Leu Gly Glu Ser Val
1 5 10 15

Thr Phe Pro Val Asn Ile Gln Glu Pro Arg Gln Val Lys Ile Ile Ala
20 25 30

Trp Thr Ser Lys Thr Ser Val Ala Tyr Val Thr Pro Gly Asp Ser Glu
35 40 45

Thr Ala Pro Val Val Thr Val Thr His Arg Asn Tyr Tyr Glu Arg Ile

```
    50                  55                  60

His Ala Leu Gly Pro Asn Tyr Asn Leu Val Ile Ser Asp Leu Arg Met
65                  70                  75                  80

Glu Asp Ala Gly Asp Tyr Lys Ala Asp Ile Asn Thr Gln Ala Asp Pro
                85                  90                  95

Tyr Thr Thr Thr Lys Arg Tyr Asn Leu Gln Ile Tyr Arg Arg Leu Gly
            100                 105                 110

Lys Pro Lys Ile Thr Gln Ser Leu Met Ala Ser Val Asn Ser Thr Cys
        115                 120                 125

Asn Val Thr Leu Thr Cys Ser Val Glu Lys Glu Glu Lys Asn Val Thr
    130                 135                 140

Tyr Asn Trp Ser Pro Leu Gly Glu Glu Gly Asn Val Leu Gln Ile Phe
145                 150                 155                 160

Gln Thr Pro Glu Asp Gln Glu Leu Thr Tyr Thr Cys Thr Ala Gln Asn
                165                 170                 175

Pro Val Ser Asn Asn Ser Asp Ser Ile Ser Ala Arg Gln Leu Cys Ala
            180                 185                 190

Asp Ile Ala Met Gly Phe Arg Thr His His Thr Gly
        195                 200


<210>  88
<211>  205
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: SLAMF6 extracellular domain

<400>  88

Gln Ser Ser Leu Thr Pro Leu Met Val Asn Gly Ile Leu Gly Glu Ser
```

```
1               5                   10                  15

Val Thr Leu Pro Leu Glu Phe Pro Ala Gly Glu Lys Val Asn Phe Ile
            20                  25                  30

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

Thr Lys Ser Pro Glu Ile His Val Thr Asn Pro Lys Gln Gly Lys Arg
    50                  55                  60

Leu Asn Phe Thr Gln Ser Tyr Ser Leu Gln Leu Ser Asn Leu Lys Met
65                  70                  75                  80

Glu Asp Thr Gly Ser Tyr Arg Ala Gln Ile Ser Thr Lys Thr Ser Ala
                85                  90                  95

Lys Leu Ser Ser Tyr Thr Leu Arg Ile Leu Arg Gln Leu Arg Asn Ile
            100                 105                 110

Gln Val Thr Asn His Ser Gln Leu Phe Gln Asn Met Thr Cys Glu Leu
        115                 120                 125

His Leu Thr Cys Ser Val Glu Asp Ala Asp Asp Asn Val Ser Phe Arg
    130                 135                 140

Trp Glu Ala Leu Gly Asn Thr Leu Ser Ser Gln Pro Asn Leu Thr Val
145                 150                 155                 160

Ser Trp Asp Pro Arg Ile Ser Ser Glu Gln Asp Tyr Thr Cys Ile Ala
                165                 170                 175

Glu Asn Ala Val Ser Asn Leu Ser Phe Ser Val Ser Ala Gln Lys Leu
            180                 185                 190

Cys Glu Asp Val Lys Ile Gln Tyr Thr Asp Thr Lys Met
        195                 200                 205
```

<210> 89
<211> 204
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: SLAMF7 extracellular domain

<400> 89

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


Phe Pro Leu Lys Ser Lys Val Lys Gln Val Asp Ser Ile Val Trp Thr
            20                  25                  30


Phe Asn Thr Thr Pro Leu Val Thr Ile Gln Pro Glu Gly Gly Thr Ile
        35                  40                  45


Ile Val Thr Gln Asn Arg Asn Arg Glu Arg Val Asp Phe Pro Asp Gly
    50                  55                  60


Gly Tyr Ser Leu Lys Leu Ser Lys Leu Lys Lys Asn Asp Ser Gly Ile
65                  70                  75                  80


Tyr Tyr Val Gly Ile Tyr Ser Ser Ser Leu Gln Gln Pro Ser Thr Gln
                85                  90                  95


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


Met Gly Leu Gln Ser Asn Lys Asn Gly Thr Cys Val Thr Asn Leu Thr
        115                 120                 125


Cys Cys Met Glu His Gly Glu Glu Asp Val Ile Tyr Thr Trp Lys Ala
    130                 135                 140


Leu Gly Gln Ala Ala Asn Glu Ser His Asn Gly Ser Ile Leu Pro Ile
145                 150                 155                 160
```

Ser Trp Arg Trp Gly Glu Ser Asp Met Thr Phe Ile Cys Val Ala Arg
165 170 175

Asn Pro Val Ser Arg Asn Phe Ser Ser Pro Ile Leu Ala Arg Lys Leu
180 185 190

Cys Glu Gly Ala Ala Asp Asp Pro Asp Ser Ser Met
195 200

<210> 90
<211> 1464
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(1464)
<223> human alpha1 chain precursor of type I collagen

<400> 90

Met Phe Ser Phe Val Asp Leu Arg Leu Leu Leu Leu Leu Ala Ala Thr
1 5 10 15

Ala Leu Leu Thr His Gly Gln Glu Glu Gly Gln Val Glu Gly Gln Asp
20 25 30

Glu Asp Ile Pro Pro Ile Thr Cys Val Gln Asn Gly Leu Arg Tyr His
35 40 45

Asp Arg Asp Val Trp Lys Pro Glu Pro Cys Arg Ile Cys Val Cys Asp
50 55 60

Asn Gly Lys Val Leu Cys Asp Asp Val Ile Cys Asp Glu Thr Lys Asn
65 70 75 80

Cys Pro Gly Ala Glu Val Pro Glu Gly Glu Cys Cys Pro Val Cys Pro
85 90 95

```
Asp Gly Ser Glu Ser Pro Thr Asp Gln Glu Thr Thr Gly Val Glu Gly
            100                 105                 110

Pro Lys Gly Asp Thr Gly Pro Arg Gly Pro Arg Gly Pro Ala Gly Pro
        115                 120                 125

Pro Gly Arg Asp Gly Ile Pro Gly Gln Pro Gly Leu Pro Gly Pro Pro
    130                 135                 140

Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala
145                 150                 155                 160

Pro Gln Leu Ser Tyr Gly Tyr Asp Glu Lys Ser Thr Gly Gly Ile Ser
                165                 170                 175

Val Pro Gly Pro Met Gly Pro Ser Gly Pro Arg Gly Leu Pro Gly Pro
            180                 185                 190

Pro Gly Ala Pro Gly Pro Gln Gly Phe Gln Gly Pro Pro Gly Glu Pro
        195                 200                 205

Gly Glu Pro Gly Ala Ser Gly Pro Met Gly Pro Arg Gly Pro Pro Gly
    210                 215                 220

Pro Pro Gly Lys Asn Gly Asp Asp Gly Glu Ala Gly Lys Pro Gly Arg
225                 230                 235                 240

Pro Gly Glu Arg Gly Pro Pro Gly Pro Gln Gly Ala Arg Gly Leu Pro
                245                 250                 255

Gly Thr Ala Gly Leu Pro Gly Met Lys Gly His Arg Gly Phe Ser Gly
            260                 265                 270

Leu Asp Gly Ala Lys Gly Asp Ala Gly Pro Ala Gly Pro Lys Gly Glu
        275                 280                 285

Pro Gly Ser Pro Gly Glu Asn Gly Ala Pro Gly Gln Met Gly Pro Arg
    290                 295                 300
```

```
Gly Leu Pro Gly Glu Arg Gly Arg Pro Gly Ala Pro Gly Pro Ala Gly
305                 310                 315                 320

Ala Arg Gly Asn Asp Gly Ala Thr Gly Ala Ala Gly Pro Pro Gly Pro
                325                 330                 335

Thr Gly Pro Ala Gly Pro Pro Gly Phe Pro Gly Ala Val Gly Ala Lys
            340                 345                 350

Gly Glu Ala Gly Pro Gln Gly Pro Arg Gly Ser Glu Gly Pro Gln Gly
        355                 360                 365

Val Arg Gly Glu Pro Gly Pro Pro Gly Pro Ala Gly Ala Ala Gly Pro
    370                 375                 380

Ala Gly Asn Pro Gly Ala Asp Gly Gln Pro Gly Ala Lys Gly Ala Asn
385                 390                 395                 400

Gly Ala Pro Gly Ile Ala Gly Ala Pro Gly Phe Pro Gly Ala Arg Gly
                405                 410                 415

Pro Ser Gly Pro Gln Gly Pro Gly Gly Pro Pro Gly Pro Lys Gly Asn
            420                 425                 430

Ser Gly Glu Pro Gly Ala Pro Gly Ser Lys Gly Asp Thr Gly Ala Lys
        435                 440                 445

Gly Glu Pro Gly Pro Val Gly Val Gln Gly Pro Pro Gly Pro Ala Gly
    450                 455                 460

Glu Glu Gly Lys Arg Gly Ala Arg Gly Glu Pro Gly Pro Thr Gly Leu
465                 470                 475                 480

Pro Gly Pro Pro Gly Glu Arg Gly Gly Pro Gly Ser Arg Gly Phe Pro
                485                 490                 495
```

```
Gly Ala Asp Gly Val Ala Gly Pro Lys Gly Pro Ala Gly Glu Arg Gly
            500                 505                 510

Ser Pro Gly Pro Ala Gly Pro Lys Gly Ser Pro Gly Glu Ala Gly Arg
        515                 520                 525

Pro Gly Glu Ala Gly Leu Pro Gly Ala Lys Gly Leu Thr Gly Ser Pro
    530                 535                 540

Gly Ser Pro Gly Pro Asp Gly Lys Thr Gly Pro Pro Gly Pro Ala Gly
545                 550                 555                 560

Gln Asp Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Ala Arg Gly Gln
                565                 570                 575

Ala Gly Val Met Gly Phe Pro Gly Pro Lys Gly Ala Ala Gly Glu Pro
            580                 585                 590

Gly Lys Ala Gly Glu Arg Gly Val Pro Gly Pro Pro Gly Ala Val Gly
        595                 600                 605

Pro Ala Gly Lys Asp Gly Glu Ala Gly Ala Gln Gly Pro Pro Gly Pro
    610                 615                 620

Ala Gly Pro Ala Gly Glu Arg Gly Glu Gln Gly Pro Ala Gly Ser Pro
625                 630                 635                 640

Gly Phe Gln Gly Leu Pro Gly Pro Ala Gly Pro Pro Gly Glu Ala Gly
                645                 650                 655

Lys Pro Gly Glu Gln Gly Val Pro Gly Asp Leu Gly Ala Pro Gly Pro
            660                 665                 670

Ser Gly Ala Arg Gly Glu Arg Gly Phe Pro Gly Glu Arg Gly Val Gln
        675                 680                 685

Gly Pro Pro Gly Pro Ala Gly Pro Arg Gly Ala Asn Gly Ala Pro Gly
    690                 695                 700
```

```
Asn Asp Gly Ala Lys Gly Asp Ala Gly Ala Pro Gly Ala Pro Gly Ser
705                 710                 715                 720


Gln Gly Ala Pro Gly Leu Gln Gly Met Pro Gly Glu Arg Gly Ala Ala
                725                 730                 735


Gly Leu Pro Gly Pro Lys Gly Asp Arg Gly Asp Ala Gly Pro Lys Gly
            740                 745                 750


Ala Asp Gly Ser Pro Gly Lys Asp Gly Val Arg Gly Leu Thr Gly Pro
        755                 760                 765


Ile Gly Pro Pro Gly Pro Ala Gly Ala Pro Gly Asp Lys Gly Glu Ser
    770                 775                 780


Gly Pro Ser Gly Pro Ala Gly Pro Thr Gly Ala Arg Gly Ala Pro Gly
785                 790                 795                 800


Asp Arg Gly Glu Pro Gly Pro Pro Gly Pro Ala Gly Phe Ala Gly Pro
                805                 810                 815


Pro Gly Ala Asp Gly Gln Pro Gly Ala Lys Gly Glu Pro Gly Asp Ala
            820                 825                 830


Gly Ala Lys Gly Asp Ala Gly Pro Pro Gly Pro Ala Gly Pro Ala Gly
        835                 840                 845


Pro Pro Gly Pro Ile Gly Asn Val Gly Ala Pro Gly Ala Lys Gly Ala
    850                 855                 860


Arg Gly Ser Ala Gly Pro Pro Gly Ala Thr Gly Phe Pro Gly Ala Ala
865                 870                 875                 880


Gly Arg Val Gly Pro Pro Gly Pro Ser Gly Asn Ala Gly Pro Pro Gly
                885                 890                 895
```

```
Pro Pro Gly Pro Ala Gly Lys Glu Gly Gly Lys Gly Pro Arg Gly Glu
            900                 905                 910

Thr Gly Pro Ala Gly Arg Pro Gly Glu Val Gly Pro Pro Gly Pro Pro
        915                 920                 925

Gly Pro Ala Gly Glu Lys Gly Ser Pro Gly Ala Asp Gly Pro Ala Gly
    930                 935                 940

Ala Pro Gly Thr Pro Gly Pro Gln Gly Ile Ala Gly Gln Arg Gly Val
945                 950                 955                 960

Val Gly Leu Pro Gly Gln Arg Gly Glu Arg Gly Phe Pro Gly Leu Pro
                965                 970                 975

Gly Pro Ser Gly Glu Pro Gly Lys Gln Gly Pro Ser Gly Ala Ser Gly
            980                 985                 990

Glu Arg Gly Pro Pro Gly Pro Met  Gly Pro Pro Gly Leu  Ala Gly Pro
        995                 1000                1005

Pro Gly  Glu Ser Gly Arg Glu  Gly Ala Pro Gly Ala  Glu Gly Ser
    1010                1015                1020

Pro Gly  Arg Asp Gly Ser Pro  Gly Ala Lys Gly Asp  Arg Gly Glu
    1025                1030                1035

Thr Gly  Pro Ala Gly Pro Pro  Gly Ala Pro Gly Ala  Pro Gly Ala
    1040                1045                1050

Pro Gly  Pro Val Gly Pro Ala  Gly Lys Ser Gly Asp  Arg Gly Glu
    1055                1060                1065

Thr Gly  Pro Ala Gly Pro Ala  Gly Pro Val Gly Pro  Val Gly Ala
    1070                1075                1080

Arg Gly  Pro Ala Gly Pro Gln  Gly Pro Arg Gly Asp  Lys Gly Glu
    1085                1090                1095
```

```
Thr Gly  Glu Gln Gly Asp Arg  Gly Ile Lys Gly His  Arg Gly Phe
    1100                1105                1110

Ser Gly  Leu Gln Gly Pro Pro  Gly Pro Pro Gly Ser  Pro Gly Glu
    1115                1120                1125

Gln Gly  Pro Ser Gly Ala Ser  Gly Pro Ala Gly Pro  Arg Gly Pro
    1130                1135                1140

Pro Gly  Ser Ala Gly Ala Pro  Gly Lys Asp Gly Leu  Asn Gly Leu
    1145                1150                1155

Pro Gly  Pro Ile Gly Pro Pro  Gly Pro Arg Gly Arg  Thr Gly Asp
    1160                1165                1170

Ala Gly  Pro Val Gly Pro Pro  Gly Pro Pro Gly Pro  Pro Gly Pro
    1175                1180                1185

Pro Gly  Pro Pro Ser Ala Gly  Phe Asp Phe Ser Phe  Leu Pro Gln
    1190                1195                1200

Pro Pro  Gln Glu Lys Ala His  Asp Gly Gly Arg Tyr  Tyr Arg Ala
    1205                1210                1215

Asp Asp  Ala Asn Val Val Arg  Asp Arg Asp Leu Glu  Val Asp Thr
    1220                1225                1230

Thr Leu  Lys Ser Leu Ser Gln  Gln Ile Glu Asn Ile  Arg Ser Pro
    1235                1240                1245

Glu Gly  Ser Arg Lys Asn Pro  Ala Arg Thr Cys Arg  Asp Leu Lys
    1250                1255                1260

Met Cys  His Ser Asp Trp Lys  Ser Gly Glu Tyr Trp  Ile Asp Pro
    1265                1270                1275
```

```
Asn Gln  Gly Cys Asn Leu Asp  Ala Ile Lys Val Phe  Cys Asn Met
    1280                1285                1290

Glu Thr  Gly Glu Thr Cys Val  Tyr Pro Thr Gln Pro  Ser Val Ala
    1295                1300                1305

Gln Lys  Asn Trp Tyr Ile Ser  Lys Asn Pro Lys Asp  Lys Arg His
    1310                1315                1320

Val Trp  Phe Gly Glu Ser Met  Thr Asp Gly Phe Gln  Phe Glu Tyr
    1325                1330                1335

Gly Gly  Gln Gly Ser Asp Pro  Ala Asp Val Ala Ile  Gln Leu Thr
    1340                1345                1350

Phe Leu  Arg Leu Met Ser Thr  Glu Ala Ser Gln Asn  Ile Thr Tyr
    1355                1360                1365

His Cys  Lys Asn Ser Val Ala  Tyr Met Asp Gln Gln  Thr Gly Asn
    1370                1375                1380

Leu Lys  Lys Ala Leu Leu Leu  Gln Gly Ser Asn Glu  Ile Glu Ile
    1385                1390                1395

Arg Ala  Glu Gly Asn Ser Arg  Phe Thr Tyr Ser Val  Thr Val Asp
    1400                1405                1410

Gly Cys  Thr Ser His Thr Gly  Ala Trp Gly Lys Thr  Val Ile Glu
    1415                1420                1425

Tyr Lys  Thr Thr Lys Thr Ser  Arg Leu Pro Ile Ile  Asp Val Ala
    1430                1435                1440

Pro Leu  Asp Val Gly Ala Pro  Asp Gln Glu Phe Gly  Phe Asp Val
    1445                1450                1455

Gly Pro  Val Cys Phe Leu
    1460
```

<210> 91
<211> 1366
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(1366)
<223> human alpha2 chain precursor of type I collagen

<400> 91

Met Leu Ser Phe Val Asp Thr Arg Thr Leu Leu Leu Leu Ala Val Thr
1   5   10   15

Leu Cys Leu Ala Thr Cys Gln Ser Leu Gln Glu Glu Thr Val Arg Lys
            20   25   30

Gly Pro Ala Gly Asp Arg Gly Pro Arg Gly Glu Arg Gly Pro Pro Gly
        35   40   45

Pro Pro Gly Arg Asp Gly Glu Asp Gly Pro Thr Gly Pro Pro Gly Pro
    50   55   60

Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala Ala Gln
65   70   75   80

Tyr Asp Gly Lys Gly Val Gly Leu Gly Pro Gly Pro Met Gly Leu Met
                85   90   95

Gly Pro Arg Gly Pro Pro Gly Ala Ala Gly Ala Pro Gly Pro Gln Gly
            100   105   110

Phe Gln Gly Pro Ala Gly Glu Pro Gly Glu Pro Gly Gln Thr Gly Pro
        115   120   125

Ala Gly Ala Arg Gly Pro Ala Gly Pro Pro Gly Lys Ala Gly Glu Asp
    130   135   140

```
Gly His Pro Gly Lys Pro Gly Arg Pro Gly Glu Arg Gly Val Val Gly
145                 150                 155                 160

Pro Gln Gly Ala Arg Gly Phe Pro Gly Thr Pro Gly Leu Pro Gly Phe
                165                 170                 175

Lys Gly Ile Arg Gly His Asn Gly Leu Asp Gly Leu Lys Gly Gln Pro
            180                 185                 190

Gly Ala Pro Gly Val Lys Gly Glu Pro Gly Ala Pro Gly Glu Asn Gly
        195                 200                 205

Thr Pro Gly Gln Thr Gly Ala Arg Gly Leu Pro Gly Glu Arg Gly Arg
    210                 215                 220

Val Gly Ala Pro Gly Pro Ala Gly Ala Arg Gly Ser Asp Gly Ser Val
225                 230                 235                 240

Gly Pro Val Gly Pro Ala Gly Pro Ile Gly Ser Ala Gly Pro Pro Gly
                245                 250                 255

Phe Pro Gly Ala Pro Gly Pro Lys Gly Glu Ile Gly Ala Val Gly Asn
            260                 265                 270

Ala Gly Pro Ala Gly Pro Ala Gly Pro Arg Gly Glu Val Gly Leu Pro
        275                 280                 285

Gly Leu Ser Gly Pro Val Gly Pro Pro Gly Asn Pro Gly Ala Asn Gly
    290                 295                 300

Leu Thr Gly Ala Lys Gly Ala Ala Gly Leu Pro Gly Val Ala Gly Ala
305                 310                 315                 320

Pro Gly Leu Pro Gly Pro Arg Gly Ile Pro Gly Pro Val Gly Ala Ala
                325                 330                 335

Gly Ala Thr Gly Ala Arg Gly Leu Val Gly Glu Pro Gly Pro Ala Gly
```

```
            340                 345                 350

Ser Lys Gly Glu Ser Gly Asn Lys Gly Glu Pro Gly Ser Ala Gly Pro
        355                 360                 365

Gln Gly Pro Pro Gly Pro Ser Gly Glu Glu Gly Lys Arg Gly Pro Asn
    370                 375                 380

Gly Glu Ala Gly Ser Ala Gly Pro Pro Gly Pro Pro Gly Leu Arg Gly
385                 390                 395                 400

Ser Pro Gly Ser Arg Gly Leu Pro Gly Ala Asp Gly Arg Ala Gly Val
                405                 410                 415

Met Gly Pro Pro Gly Ser Arg Gly Ala Ser Gly Pro Ala Gly Val Arg
            420                 425                 430

Gly Pro Asn Gly Asp Ala Gly Arg Pro Gly Glu Pro Gly Leu Met Gly
        435                 440                 445

Pro Arg Gly Leu Pro Gly Ser Pro Gly Asn Ile Gly Pro Ala Gly Lys
    450                 455                 460

Glu Gly Pro Val Gly Leu Pro Gly Ile Asp Gly Arg Pro Gly Pro Ile
465                 470                 475                 480

Gly Pro Ala Gly Ala Arg Gly Glu Pro Gly Asn Ile Gly Phe Pro Gly
                485                 490                 495

Pro Lys Gly Pro Thr Gly Asp Pro Gly Lys Asn Gly Asp Lys Gly His
            500                 505                 510

Ala Gly Leu Ala Gly Ala Arg Gly Ala Pro Gly Pro Asp Gly Asn Asn
        515                 520                 525

Gly Ala Gln Gly Pro Pro Gly Pro Gln Gly Val Gln Gly Gly Lys Gly
    530                 535                 540
```

```
Glu Gln Gly Pro Pro Gly Pro Pro Gly Phe Gln Gly Leu Pro Gly Pro
545                 550                 555                 560


Ser Gly Pro Ala Gly Glu Val Gly Lys Pro Gly Glu Arg Gly Leu His
                565                 570                 575


Gly Glu Phe Gly Leu Pro Gly Pro Ala Gly Pro Arg Gly Glu Arg Gly
            580                 585                 590


Pro Pro Gly Glu Ser Gly Ala Ala Gly Pro Thr Gly Pro Ile Gly Ser
        595                 600                 605


Arg Gly Pro Ser Gly Pro Pro Gly Pro Asp Gly Asn Lys Gly Glu Pro
    610                 615                 620


Gly Val Val Gly Ala Val Gly Thr Ala Gly Pro Ser Gly Pro Ser Gly
625                 630                 635                 640


Leu Pro Gly Glu Arg Gly Ala Ala Gly Ile Pro Gly Gly Lys Gly Glu
                645                 650                 655


Lys Gly Glu Pro Gly Leu Arg Gly Glu Ile Gly Asn Pro Gly Arg Asp
            660                 665                 670


Gly Ala Arg Gly Ala Pro Gly Ala Val Gly Ala Pro Gly Pro Ala Gly
        675                 680                 685


Ala Thr Gly Asp Arg Gly Glu Ala Gly Ala Ala Gly Pro Ala Gly Pro
    690                 695                 700


Ala Gly Pro Arg Gly Ser Pro Gly Glu Arg Gly Glu Val Gly Pro Ala
705                 710                 715                 720


Gly Pro Asn Gly Phe Ala Gly Pro Ala Gly Ala Ala Gly Gln Pro Gly
                725                 730                 735


Ala Lys Gly Glu Arg Gly Ala Lys Gly Pro Lys Gly Glu Asn Gly Val
```

```
            740                 745                 750

Val Gly Pro Thr Gly Pro Val Gly Ala Ala Gly Pro Ala Gly Pro Asn
        755                 760                 765

Gly Pro Pro Gly Pro Ala Gly Ser Arg Gly Asp Gly Gly Pro Pro Gly
    770                 775                 780

Met Thr Gly Phe Pro Gly Ala Ala Gly Arg Thr Gly Pro Pro Gly Pro
785                 790                 795                 800

Ser Gly Ile Ser Gly Pro Pro Gly Pro Pro Gly Pro Ala Gly Lys Glu
                805                 810                 815

Gly Leu Arg Gly Pro Arg Gly Asp Gln Gly Pro Val Gly Arg Thr Gly
            820                 825                 830

Glu Val Gly Ala Val Gly Pro Pro Gly Phe Ala Gly Glu Lys Gly Pro
        835                 840                 845

Ser Gly Glu Ala Gly Thr Ala Gly Pro Pro Gly Thr Pro Gly Pro Gln
    850                 855                 860

Gly Leu Leu Gly Ala Pro Gly Ile Leu Gly Leu Pro Gly Ser Arg Gly
865                 870                 875                 880

Glu Arg Gly Leu Pro Gly Val Ala Gly Ala Val Gly Glu Pro Gly Pro
                885                 890                 895

Leu Gly Ile Ala Gly Pro Pro Gly Ala Arg Gly Pro Pro Gly Ala Val
            900                 905                 910

Gly Ser Pro Gly Val Asn Gly Ala Pro Gly Glu Ala Gly Arg Asp Gly
        915                 920                 925

Asn Pro Gly Asn Asp Gly Pro Pro Gly Arg Asp Gly Gln Pro Gly His
    930                 935                 940
```

```
Lys Gly Glu Arg Gly Tyr Pro Gly Asn Ile Gly Pro Val Gly Ala Ala
945                 950                 955                 960


Gly Ala Pro Gly Pro His Gly Pro Val Gly Pro Ala Gly Lys His Gly
                965                 970                 975


Asn Arg Gly Glu Thr Gly Pro Ser Gly Pro Val Gly Pro Ala Gly Ala
            980                 985                 990


Val Gly Pro Arg Gly Pro Ser Gly  Pro Gln Gly Ile Arg  Gly Asp Lys
        995                 1000                1005


Gly Glu  Pro Gly Glu Lys Gly  Pro Arg Gly Leu Pro  Gly Leu Lys
    1010                1015                1020


Gly His  Asn Gly Leu Gln Gly  Leu Pro Gly Ile Ala  Gly His His
    1025                1030                1035


Gly Asp  Gln Gly Ala Pro Gly  Ser Val Gly Pro Ala  Gly Pro Arg
    1040                1045                1050


Gly Pro  Ala Gly Pro Ser Gly  Pro Ala Gly Lys Asp  Gly Arg Thr
    1055                1060                1065


Gly His  Pro Gly Thr Val Gly  Pro Ala Gly Ile Arg  Gly Pro Gln
    1070                1075                1080


Gly His  Gln Gly Pro Ala Gly  Pro Pro Gly Pro Pro  Gly Pro Pro
    1085                1090                1095


Gly Pro  Pro Gly Val Ser Gly  Gly Gly Tyr Asp Phe  Gly Tyr Asp
    1100                1105                1110


Gly Asp  Phe Tyr Arg Ala Asp  Gln Pro Arg Ser Ala  Pro Ser Leu
    1115                1120                1125


Arg Pro  Lys Asp Tyr Glu Val  Asp Ala Thr Leu Lys  Ser Leu Asn
```

```
    1130                1135                1140

Asn Gln  Ile Glu Thr Leu Leu  Thr Pro Glu Gly Ser  Arg Lys Asn
    1145                1150                1155

Pro Ala  Arg Thr Cys Arg Asp  Leu Arg Leu Ser His  Pro Glu Trp
    1160                1165                1170

Ser Ser  Gly Tyr Tyr Trp Ile  Asp Pro Asn Gln Gly  Cys Thr Met
    1175                1180                1185

Asp Ala  Ile Lys Val Tyr Cys  Asp Phe Ser Thr Gly  Glu Thr Cys
    1190                1195                1200

Ile Arg  Ala Gln Pro Glu Asn  Ile Pro Ala Lys Asn  Trp Tyr Arg
    1205                1210                1215

Ser Ser  Lys Asp Lys Lys His  Val Trp Leu Gly Glu  Thr Ile Asn
    1220                1225                1230

Ala Gly  Ser Gln Phe Glu Tyr  Asn Val Glu Gly Val  Thr Ser Lys
    1235                1240                1245

Glu Met  Ala Thr Gln Leu Ala  Phe Met Arg Leu Leu  Ala Asn Tyr
    1250                1255                1260

Ala Ser  Gln Asn Ile Thr Tyr  His Cys Lys Asn Ser  Ile Ala Tyr
    1265                1270                1275

Met Asp  Glu Glu Thr Gly Asn  Leu Lys Lys Ala Val  Ile Leu Gln
    1280                1285                1290

Gly Ser  Asn Asp Val Glu Leu  Val Ala Glu Gly Asn  Ser Arg Phe
    1295                1300                1305

Thr Tyr  Thr Val Leu Val Asp  Gly Cys Ser Lys Lys  Thr Asn Glu
    1310                1315                1320
```

Trp Gly Lys Thr Ile Ile Glu Tyr Lys Thr Asn Lys Pro Ser Arg
    1325   1330   1335

Leu Pro Phe Leu Asp Ile Ala Pro Leu Asp Ile Gly Gly Ala Asp
    1340   1345   1350

Gln Glu Phe Phe Val Asp Ile Gly Pro Val Cys Phe Lys
    1355   1360   1365

<210> 92
<211> 1605
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(1605)
<223> human alpha1 chain of type IV collagen

<400> 92

Met Gln Gly Pro Glu Gly Pro Gln Gly Pro Pro Gly Gln Lys Gly Asp
1   5   10   15

Thr Gly Glu Pro Gly Leu Pro Gly Thr Lys Gly Thr Arg Gly Pro Pro
            20   25   30

Gly Ala Ser Gly Tyr Pro Gly Asn Pro Gly Leu Pro Gly Ile Pro Gly
        35   40   45

Gln Asp Gly Pro Pro Gly Pro Pro Gly Ile Pro Gly Cys Asn Gly Thr
    50   55   60

Lys Gly Glu Arg Gly Pro Leu Gly Pro Pro Gly Leu Pro Gly Phe Ala
65   70   75   80

Gly Asn Pro Gly Pro Pro Gly Leu Pro Gly Met Lys Gly Asp Pro Gly
                85   90   95

```
Glu Ile Leu Gly His Val Pro Gly Met Leu Leu Lys Gly Glu Arg Gly
            100                 105                 110

Phe Pro Gly Ile Pro Gly Thr Pro Gly Pro Pro Gly Leu Pro Gly Leu
        115                 120                 125

Gln Gly Pro Val Gly Pro Pro Gly Phe Thr Gly Pro Pro Gly Pro Pro
    130                 135                 140

Gly Pro Pro Gly Pro Pro Gly Glu Lys Gly Gln Met Gly Leu Ser Phe
145                 150                 155                 160

Gln Gly Pro Lys Gly Asp Lys Gly Asp Gln Gly Val Ser Gly Pro Pro
                165                 170                 175

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

Lys Gly Glu Lys Gly Gln Lys Gly Glu Pro Gly Phe Gln Gly Met Pro
        195                 200                 205

Gly Val Gly Glu Lys Gly Glu Pro Gly Lys Pro Gly Pro Arg Gly Lys
    210                 215                 220

Pro Gly Lys Asp Gly Asp Lys Gly Glu Lys Gly Ser Pro Gly Phe Pro
225                 230                 235                 240

Gly Glu Pro Gly Tyr Pro Gly Leu Ile Gly Arg Gln Gly Pro Gln Gly
                245                 250                 255

Glu Lys Gly Glu Ala Gly Pro Pro Gly Pro Pro Gly Ile Val Ile Gly
            260                 265                 270

Thr Gly Pro Leu Gly Glu Lys Gly Glu Arg Gly Tyr Pro Gly Thr Pro
        275                 280                 285

Gly Pro Arg Gly Glu Pro Gly Pro Lys Gly Phe Pro Gly Leu Pro Gly
    290                 295                 300
```

```
Gln Pro Gly Pro Pro Gly Leu Pro Val Pro Gly Gln Ala Gly Ala Pro
305                 310                 315                 320

Gly Phe Pro Gly Glu Arg Gly Glu Lys Gly Asp Arg Gly Phe Pro Gly
                325                 330                 335

Thr Ser Leu Pro Gly Pro Ser Gly Arg Asp Gly Leu Pro Gly Pro Pro
            340                 345                 350

Gly Ser Pro Gly Pro Pro Gly Gln Pro Gly Tyr Thr Asn Gly Ile Val
        355                 360                 365

Glu Cys Gln Pro Gly Pro Pro Gly Asp Gln Gly Pro Pro Gly Ile Pro
    370                 375                 380

Gly Gln Pro Gly Phe Ile Gly Glu Ile Gly Glu Lys Gly Gln Lys Gly
385                 390                 395                 400

Glu Ser Cys Leu Ile Cys Asp Ile Asp Gly Tyr Arg Gly Pro Pro Gly
                405                 410                 415

Pro Gln Gly Pro Pro Gly Glu Ile Gly Phe Pro Gly Gln Pro Gly Ala
            420                 425                 430

Lys Gly Asp Arg Gly Leu Pro Gly Arg Asp Gly Val Ala Gly Val Pro
        435                 440                 445

Gly Pro Gln Gly Thr Pro Gly Leu Ile Gly Gln Pro Gly Ala Lys Gly
    450                 455                 460

Glu Pro Gly Glu Phe Tyr Phe Asp Leu Arg Leu Lys Gly Asp Lys Gly
465                 470                 475                 480

Asp Pro Gly Phe Pro Gly Gln Pro Gly Met Pro Gly Arg Ala Gly Ser
                485                 490                 495
```

```
Pro Gly Arg Asp Gly His Pro Gly Leu Pro Gly Pro Lys Gly Ser Pro
            500                 505                 510

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

Phe Pro Gly Ser Arg Gly Asp Thr Gly Pro Pro Gly Pro Pro Gly Tyr
    530                 535                 540

Gly Pro Ala Gly Pro Ile Gly Asp Lys Gly Gln Ala Gly Phe Pro Gly
545                 550                 555                 560

Gly Pro Gly Ser Pro Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Lys
                565                 570                 575

Ile Val Pro Leu Pro Gly Pro Pro Gly Ala Glu Gly Leu Pro Gly Ser
            580                 585                 590

Pro Gly Phe Pro Gly Pro Gln Gly Asp Arg Gly Phe Pro Gly Thr Pro
        595                 600                 605

Gly Arg Pro Gly Leu Pro Gly Glu Lys Gly Ala Val Gly Gln Pro Gly
    610                 615                 620

Ile Gly Phe Pro Gly Pro Pro Gly Pro Lys Gly Val Asp Gly Leu Pro
625                 630                 635                 640

Gly Asp Met Gly Pro Pro Gly Thr Pro Gly Arg Pro Gly Phe Asn Gly
                645                 650                 655

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

Gly Leu Pro Gly Leu Lys Gly Leu Pro Gly Leu Pro Gly Ile Pro Gly
        675                 680                 685

Thr Pro Gly Glu Lys Gly Ser Ile Gly Val Pro Gly Val Pro Gly Glu
    690                 695                 700
```

```
His Gly Ala Ile Gly Pro Pro Gly Leu Gln Gly Ile Arg Gly Glu Pro
705                 710                 715                 720

Gly Pro Pro Gly Leu Pro Gly Ser Val Gly Ser Pro Gly Val Pro Gly
                725                 730                 735

Ile Gly Pro Pro Gly Ala Arg Gly Pro Pro Gly Gly Gln Gly Pro Pro
            740                 745                 750

Gly Leu Ser Gly Pro Pro Gly Ile Lys Gly Glu Lys Gly Phe Pro Gly
        755                 760                 765

Phe Pro Gly Leu Asp Met Pro Gly Pro Lys Gly Asp Lys Gly Ala Gln
    770                 775                 780

Gly Leu Pro Gly Ile Thr Gly Gln Ser Gly Leu Pro Gly Leu Pro Gly
785                 790                 795                 800

Gln Gln Gly Ala Pro Gly Ile Pro Gly Phe Pro Gly Ser Lys Gly Glu
                805                 810                 815

Met Gly Val Met Gly Thr Pro Gly Gln Pro Gly Ser Pro Gly Pro Val
            820                 825                 830

Gly Ala Pro Gly Leu Pro Gly Glu Lys Gly Asp His Gly Phe Pro Gly
        835                 840                 845

Ser Ser Gly Pro Arg Gly Asp Pro Gly Leu Lys Gly Asp Lys Gly Asp
    850                 855                 860

Val Gly Leu Pro Gly Lys Pro Gly Ser Met Asp Lys Val Asp Met Gly
865                 870                 875                 880

Ser Met Lys Gly Gln Lys Gly Asp Gln Gly Glu Lys Gly Gln Ile Gly
                885                 890                 895
```

```
Pro Ile Gly Glu Lys Gly Ser Arg Gly Asp Pro Gly Thr Pro Gly Val
            900                 905                 910


Pro Gly Lys Asp Gly Gln Ala Gly Gln Pro Gly Gln Pro Gly Pro Lys
        915                 920                 925


Gly Asp Pro Gly Ile Ser Gly Thr Pro Gly Ala Pro Gly Leu Pro Gly
    930                 935                 940


Pro Lys Gly Ser Val Gly Gly Met Gly Leu Pro Gly Thr Pro Gly Glu
945                 950                 955                 960


Lys Gly Val Pro Gly Ile Pro Gly Pro Gln Gly Ser Pro Gly Leu Pro
                965                 970                 975


Gly Asp Lys Gly Ala Lys Gly Glu Lys Gly Gln Ala Gly Pro Pro Gly
            980                 985                 990


Ile Gly Ile Pro Gly Leu Arg Gly  Glu Lys Gly Asp Gln  Gly Ile Ala
        995                 1000                1005


Gly Phe  Pro Gly Ser Pro Gly  Glu Lys Gly Glu Lys  Gly Ser Ile
    1010                1015                1020


Gly Ile  Pro Gly Met Pro Gly  Ser Pro Gly Leu Lys  Gly Ser Pro
    1025                1030                1035


Gly Ser  Val Gly Tyr Pro Gly  Ser Pro Gly Leu Pro  Gly Glu Lys
    1040                1045                1050


Gly Asp  Lys Gly Leu Pro Gly  Leu Asp Gly Ile Pro  Gly Val Lys
    1055                1060                1065


Gly Glu  Ala Gly Leu Pro Gly  Thr Pro Gly Pro Thr  Gly Pro Ala
    1070                1075                1080


Gly Gln  Lys Gly Glu Pro Gly  Ser Asp Gly Ile Pro  Gly Ser Ala
    1085                1090                1095
```

```
Gly Glu  Lys Gly Glu Pro Gly  Leu Pro Gly Arg Gly  Phe Pro Gly
    1100                1105                1110

Phe Pro  Gly Ala Lys Gly Asp  Lys Gly Ser Lys Gly  Glu Val Gly
    1115                1120                1125

Phe Pro  Gly Leu Ala Gly Ser  Pro Gly Ile Pro Gly  Ser Lys Gly
    1130                1135                1140

Glu Gln  Gly Phe Met Gly Pro  Pro Gly Pro Gln Gly  Gln Pro Gly
    1145                1150                1155

Leu Pro  Gly Ser Pro Gly His  Ala Thr Glu Gly Pro  Lys Gly Asp
    1160                1165                1170

Arg Gly  Pro Gln Gly Gln Pro  Gly Leu Pro Gly Leu  Pro Gly Pro
    1175                1180                1185

Met Gly  Pro Pro Gly Leu Pro  Gly Ile Asp Gly Val  Lys Gly Asp
    1190                1195                1200

Lys Gly  Asn Pro Gly Trp Pro  Gly Ala Pro Gly Val  Pro Gly Pro
    1205                1210                1215

Lys Gly  Asp Pro Gly Phe Gln  Gly Met Pro Gly Ile  Gly Gly Ser
    1220                1225                1230

Pro Gly  Ile Thr Gly Ser Lys  Gly Asp Met Gly Pro  Pro Gly Val
    1235                1240                1245

Pro Gly  Phe Gln Gly Pro Lys  Gly Leu Pro Gly Leu  Gln Gly Ile
    1250                1255                1260

Lys Gly  Asp Gln Gly Asp Gln  Gly Val Pro Gly Ala  Lys Gly Leu
    1265                1270                1275
```

```
Pro Gly  Pro Pro Gly Pro Pro  Gly Pro Tyr Asp Ile  Ile Lys Gly
    1280                1285                1290

Glu Pro  Gly Leu Pro Gly Pro  Glu Gly Pro Pro Gly  Leu Lys Gly
    1295                1300                1305

Leu Gln  Gly Leu Pro Gly Pro  Lys Gly Gln Gln Gly  Val Thr Gly
    1310                1315                1320

Leu Val  Gly Ile Pro Gly Pro  Pro Gly Ile Pro Gly  Phe Asp Gly
    1325                1330                1335

Ala Pro  Gly Gln Lys Gly Glu  Met Gly Pro Ala Gly  Pro Thr Gly
    1340                1345                1350

Pro Arg  Gly Phe Pro Gly Pro  Pro Gly Pro Asp Gly  Leu Pro Gly
    1355                1360                1365

Ser Met  Gly Pro Pro Gly Thr  Pro Ser Val Asp His  Gly Phe Leu
    1370                1375                1380

Val Thr  Arg His Ser Gln Thr  Ile Asp Asp Pro Gln  Cys Pro Ser
    1385                1390                1395

Gly Thr  Lys Ile Leu Tyr His  Gly Tyr Ser Leu Leu  Tyr Val Gln
    1400                1405                1410

Gly Asn  Glu Arg Ala His Gly  Gln Asp Leu Gly Thr  Ala Gly Ser
    1415                1420                1425

Cys Leu  Arg Lys Phe Ser Thr  Met Pro Phe Leu Phe  Cys Asn Ile
    1430                1435                1440

Asn Asn  Val Cys Asn Phe Ala  Ser Arg Asn Asp Tyr  Ser Tyr Trp
    1445                1450                1455

Leu Ser  Thr Pro Glu Pro Met  Pro Met Ser Met Ala  Pro Ile Thr
    1460                1465                1470
```

```
Gly Glu  Asn Ile Arg Pro Phe  Ile Ser Arg Cys Ala  Val Cys Glu
    1475                1480                1485

Ala Pro  Ala Met Val Met Ala  Val His Ser Gln Thr  Ile Gln Ile
    1490                1495                1500

Pro Pro  Cys Pro Ser Gly Trp  Ser Ser Leu Trp Ile  Gly Tyr Ser
    1505                1510                1515

Phe Val  Met His Thr Ser Ala  Gly Ala Glu Gly Ser  Gly Gln Ala
    1520                1525                1530

Leu Ala  Ser Pro Gly Ser Cys  Leu Glu Glu Phe Arg  Ser Ala Pro
    1535                1540                1545

Phe Ile  Glu Cys His Gly Arg  Gly Thr Cys Asn Tyr  Tyr Ala Asn
    1550                1555                1560

Ala Tyr  Ser Phe Trp Leu Ala  Thr Ile Glu Arg Ser  Glu Met Phe
    1565                1570                1575

Lys Lys  Pro Thr Pro Ser Thr  Leu Lys Ala Gly Glu  Leu Arg Thr
    1580                1585                1590

His Val  Ser Arg Cys Gln Val  Cys Met Arg Arg Thr
    1595                1600                1605
```

<210> 93
<211> 1712
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(1712)
<223> human alpha2 chain of type IV collagen

<400> 93

```
Met Gly Arg Asp Gln Arg Ala Val Ala Gly Pro Ala Leu Arg Arg Trp
1               5                  10                  15

Leu Leu Leu Gly Thr Val Thr Val Gly Phe Leu Ala Gln Ser Val Leu
            20                  25                  30

Ala Gly Val Lys Lys Phe Asp Val Pro Cys Gly Gly Arg Asp Cys Ser
        35                  40                  45

Gly Gly Cys Gln Cys Tyr Pro Glu Lys Gly Gly Arg Gly Gln Pro Gly
    50                  55                  60

Pro Val Gly Pro Gln Gly Tyr Asn Gly Pro Pro Gly Leu Gln Gly Phe
65                  70                  75                  80

Pro Gly Leu Gln Gly Arg Lys Gly Asp Lys Gly Glu Arg Gly Ala Pro
                85                  90                  95

Gly Val Thr Gly Pro Lys Gly Asp Val Gly Ala Arg Gly Val Ser Gly
            100                 105                 110

Phe Pro Gly Ala Asp Gly Ile Pro Gly His Pro Gly Gln Gly Gly Pro
        115                 120                 125

Arg Gly Arg Pro Gly Tyr Asp Gly Cys Asn Gly Thr Gln Gly Asp Ser
    130                 135                 140

Gly Pro Gln Gly Pro Pro Gly Ser Glu Gly Phe Thr Gly Pro Pro Gly
145                 150                 155                 160

Pro Gln Gly Pro Lys Gly Gln Lys Gly Glu Pro Tyr Ala Leu Pro Lys
                165                 170                 175

Glu Glu Arg Asp Arg Tyr Arg Gly Glu Pro Gly Glu Pro Gly Leu Val
            180                 185                 190

Gly Phe Gln Gly Pro Pro Gly Arg Pro Gly His Val Gly Gln Met Gly
```

```
        195                 200                 205

Pro Val Gly Ala Pro Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Pro
    210                 215                 220

Lys Gly Gln Gln Gly Asn Arg Gly Leu Gly Phe Tyr Gly Val Lys Gly
225                 230                 235                 240

Glu Lys Gly Asp Val Gly Gln Pro Gly Pro Asn Gly Ile Pro Ser Asp
                245                 250                 255

Thr Leu His Pro Ile Ile Ala Pro Thr Gly Val Thr Phe His Pro Asp
            260                 265                 270

Gln Tyr Lys Gly Glu Lys Gly Ser Glu Gly Glu Pro Gly Ile Arg Gly
        275                 280                 285

Ile Ser Leu Lys Gly Glu Glu Gly Ile Met Gly Phe Pro Gly Leu Arg
    290                 295                 300

Gly Tyr Pro Gly Leu Ser Gly Glu Lys Gly Ser Pro Gly Gln Lys Gly
305                 310                 315                 320

Ser Arg Gly Leu Asp Gly Tyr Gln Gly Pro Asp Gly Pro Arg Gly Pro
                325                 330                 335

Lys Gly Glu Ala Gly Asp Pro Gly Pro Pro Gly Leu Pro Ala Tyr Ser
            340                 345                 350

Pro His Pro Ser Leu Ala Lys Gly Ala Arg Gly Asp Pro Gly Phe Pro
        355                 360                 365

Gly Ala Gln Gly Glu Pro Gly Ser Gln Gly Glu Pro Gly Asp Pro Gly
    370                 375                 380

Leu Pro Gly Pro Pro Gly Leu Ser Ile Gly Asp Gly Asp Gln Arg Arg
385                 390                 395                 400
```

```
Gly Leu Pro Gly Glu Met Gly Pro Lys Gly Phe Ile Gly Asp Pro Gly
                405                 410                 415

Ile Pro Ala Leu Tyr Gly Gly Pro Pro Gly Pro Asp Gly Lys Arg Gly
            420                 425                 430

Pro Pro Gly Pro Pro Gly Leu Pro Gly Pro Pro Gly Pro Asp Gly Phe
        435                 440                 445

Leu Phe Gly Leu Lys Gly Ala Lys Gly Arg Ala Gly Phe Pro Gly Leu
    450                 455                 460

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

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

Gly Leu Pro Gly Pro Lys Gly Phe Ala Gly Ile Asn Gly Glu Pro Gly
            500                 505                 510

Arg Lys Gly Asp Arg Gly Asp Pro Gly Gln His Gly Leu Pro Gly Phe
        515                 520                 525

Pro Gly Leu Lys Gly Val Pro Gly Asn Ile Gly Ala Pro Gly Pro Lys
    530                 535                 540

Gly Ala Lys Gly Asp Ser Arg Thr Ile Thr Thr Lys Gly Glu Arg Gly
545                 550                 555                 560

Gln Pro Gly Val Pro Gly Val Pro Gly Met Lys Gly Asp Asp Gly Ser
                565                 570                 575

Pro Gly Arg Asp Gly Leu Asp Gly Phe Pro Gly Leu Pro Gly Pro Pro
            580                 585                 590

Gly Asp Gly Ile Lys Gly Pro Pro Gly Asp Pro Gly Tyr Pro Gly Ile
```

```
        595                 600                 605

Pro Gly Thr Lys Gly Thr Pro Gly Glu Met Gly Pro Pro Gly Leu Gly
    610                 615                 620

Leu Pro Gly Leu Lys Gly Gln Arg Gly Phe Pro Gly Asp Ala Gly Leu
625                 630                 635                 640

Pro Gly Pro Pro Gly Phe Leu Gly Pro Pro Gly Pro Ala Gly Thr Pro
                645                 650                 655

Gly Gln Ile Asp Cys Asp Thr Asp Val Lys Arg Ala Val Gly Gly Asp
            660                 665                 670

Arg Gln Glu Ala Ile Gln Pro Gly Cys Ile Gly Gly Pro Lys Gly Leu
        675                 680                 685

Pro Gly Leu Pro Gly Pro Pro Gly Pro Thr Gly Ala Lys Gly Leu Arg
    690                 695                 700

Gly Ile Pro Gly Phe Ala Gly Ala Asp Gly Gly Pro Gly Pro Arg Gly
705                 710                 715                 720

Leu Pro Gly Asp Ala Gly Arg Glu Gly Phe Pro Gly Pro Pro Gly Phe
                725                 730                 735

Ile Gly Pro Arg Gly Ser Lys Gly Ala Val Gly Leu Pro Gly Pro Asp
            740                 745                 750

Gly Ser Pro Gly Pro Ile Gly Leu Pro Gly Pro Asp Gly Pro Pro Gly
        755                 760                 765

Glu Arg Gly Leu Pro Gly Glu Val Leu Gly Ala Gln Pro Gly Pro Arg
    770                 775                 780

Gly Asp Ala Gly Val Pro Gly Gln Pro Gly Leu Lys Gly Leu Pro Gly
785                 790                 795                 800
```

```
Asp Arg Gly Pro Pro Gly Phe Arg Gly Ser Gln Gly Met Pro Gly Met
                805                 810                 815

Pro Gly Leu Lys Gly Gln Pro Gly Leu Pro Gly Pro Ser Gly Gln Pro
            820                 825                 830

Gly Leu Tyr Gly Pro Pro Gly Leu His Gly Phe Pro Gly Ala Pro Gly
        835                 840                 845

Gln Glu Gly Pro Leu Gly Leu Pro Gly Ile Pro Gly Arg Glu Gly Leu
    850                 855                 860

Pro Gly Asp Arg Gly Asp Pro Gly Asp Thr Gly Ala Pro Gly Pro Val
865                 870                 875                 880

Gly Met Lys Gly Leu Ser Gly Asp Arg Gly Asp Ala Gly Phe Thr Gly
                885                 890                 895

Glu Gln Gly His Pro Gly Ser Pro Gly Phe Lys Gly Ile Asp Gly Met
            900                 905                 910

Pro Gly Thr Pro Gly Leu Lys Gly Asp Arg Gly Ser Pro Gly Met Asp
        915                 920                 925

Gly Phe Gln Gly Met Pro Gly Leu Lys Gly Arg Pro Gly Phe Pro Gly
    930                 935                 940

Ser Lys Gly Glu Ala Gly Phe Phe Gly Ile Pro Gly Leu Lys Gly Leu
945                 950                 955                 960

Ala Gly Glu Pro Gly Phe Lys Gly Ser Arg Gly Asp Pro Gly Pro Pro
                965                 970                 975

Gly Pro Pro Pro Val Ile Leu Pro Gly Met Lys Asp Ile Lys Gly Glu
            980                 985                 990

Lys Gly Asp Glu Gly Pro Met Gly  Leu Lys Gly Tyr Leu  Gly Ala Lys
```

```
        995                 1000                1005

Gly Ile  Gln Gly Met Pro Gly  Ile Pro Gly Leu Ser  Gly Ile Pro
    1010                1015                1020

Gly Leu  Pro Gly Arg Pro Gly  His Ile Lys Gly Val  Lys Gly Asp
    1025                1030                1035

Ile Gly  Val Pro Gly Ile Pro  Gly Leu Pro Gly Phe  Pro Gly Val
    1040                1045                1050

Ala Gly  Pro Pro Gly Ile Thr  Gly Phe Pro Gly Phe  Ile Gly Ser
    1055                1060                1065

Arg Gly  Asp Lys Gly Ala Pro  Gly Arg Ala Gly Leu  Tyr Gly Glu
    1070                1075                1080

Ile Gly  Ala Thr Gly Asp Phe  Gly Asp Ile Gly Asp  Thr Ile Asn
    1085                1090                1095

Leu Pro  Gly Arg Pro Gly Leu  Lys Gly Glu Arg Gly  Thr Thr Gly
    1100                1105                1110

Ile Pro  Gly Leu Lys Gly Phe  Phe Gly Glu Lys Gly  Thr Glu Gly
    1115                1120                1125

Asp Ile  Gly Phe Pro Gly Ile  Thr Gly Val Thr Gly  Val Gln Gly
    1130                1135                1140

Pro Pro  Gly Leu Lys Gly Gln  Thr Gly Phe Pro Gly  Leu Thr Gly
    1145                1150                1155

Pro Pro  Gly Ser Gln Gly Glu  Leu Gly Arg Ile Gly  Leu Pro Gly
    1160                1165                1170

Gly Lys  Gly Asp Asp Gly Trp  Pro Gly Ala Pro Gly  Leu Pro Gly
    1175                1180                1185
```

```
Phe Pro  Gly Leu Arg Gly Ile  Arg Gly Leu His Gly  Leu Pro Gly
    1190                1195                1200

Thr Lys  Gly Phe Pro Gly Ser  Pro Gly Ser Asp Ile  His Gly Asp
    1205                1210                1215

Pro Gly  Phe Pro Gly Pro Pro  Gly Glu Arg Gly Asp  Pro Gly Glu
    1220                1225                1230

Ala Asn  Thr Leu Pro Gly Pro  Val Gly Val Pro Gly  Gln Lys Gly
    1235                1240                1245

Asp Gln  Gly Ala Pro Gly Glu  Arg Gly Pro Pro Gly  Ser Pro Gly
    1250                1255                1260

Leu Gln  Gly Phe Pro Gly Ile  Thr Pro Pro Ser Asn  Ile Ser Gly
    1265                1270                1275

Ala Pro  Gly Asp Lys Gly Ala  Pro Gly Ile Phe Gly  Leu Lys Gly
    1280                1285                1290

Tyr Arg  Gly Pro Pro Gly Pro  Pro Gly Ser Ala Ala  Leu Pro Gly
    1295                1300                1305

Ser Lys  Gly Asp Thr Gly Asn  Pro Gly Ala Pro Gly  Thr Pro Gly
    1310                1315                1320

Thr Lys  Gly Trp Ala Gly Asp  Ser Gly Pro Gln Gly  Arg Pro Gly
    1325                1330                1335

Val Phe  Gly Leu Pro Gly Glu  Lys Gly Pro Arg Gly  Glu Gln Gly
    1340                1345                1350

Phe Met  Gly Asn Thr Gly Pro  Thr Gly Ala Val Gly  Asp Arg Gly
    1355                1360                1365

Pro Lys  Gly Pro Lys Gly Asp  Pro Gly Phe Pro Gly  Ala Pro Gly
```

```
    1370                1375                1380

Thr Val  Gly Ala Pro Gly Ile  Ala Gly Ile Pro Gln  Lys Ile Ala
    1385                1390                1395

Val Gln  Pro Gly Thr Val Gly  Pro Gln Gly Arg Arg  Gly Pro Pro
    1400                1405                1410

Gly Ala  Pro Gly Glu Met Gly  Pro Gln Gly Pro Pro  Gly Glu Pro
    1415                1420                1425

Gly Phe  Arg Gly Ala Pro Gly  Lys Ala Gly Pro Gln  Gly Arg Gly
    1430                1435                1440

Gly Val  Ser Ala Val Pro Gly  Phe Arg Gly Asp Glu  Gly Pro Ile
    1445                1450                1455

Gly His  Gln Gly Pro Ile Gly  Gln Glu Gly Ala Pro  Gly Arg Pro
    1460                1465                1470

Gly Ser  Pro Gly Leu Pro Gly  Met Pro Gly Arg Ser  Val Ser Ile
    1475                1480                1485

Gly Tyr  Leu Leu Val Lys His  Ser Gln Thr Asp Gln  Glu Pro Met
    1490                1495                1500

Cys Pro  Val Gly Met Asn Lys  Leu Trp Ser Gly Tyr  Ser Leu Leu
    1505                1510                1515

Tyr Phe  Glu Gly Gln Glu Lys  Ala His Asn Gln Asp  Leu Gly Leu
    1520                1525                1530

Ala Gly  Ser Cys Leu Ala Arg  Phe Ser Thr Met Pro  Phe Leu Tyr
    1535                1540                1545

Cys Asn  Pro Gly Asp Val Cys  Tyr Tyr Ala Ser Arg  Asn Asp Lys
    1550                1555                1560
```

```
Ser Tyr  Trp Leu Ser Thr Thr  Ala Pro Leu Pro Met  Met Pro Val
    1565                1570                1575

Ala Glu  Asp Glu Ile Lys Pro  Tyr Ile Ser Arg Cys  Ser Val Cys
    1580                1585                1590

Glu Ala  Pro Ala Ile Ala Ile  Ala Val His Ser Gln  Asp Val Ser
    1595                1600                1605

Ile Pro  His Cys Pro Ala Gly  Trp Arg Ser Leu Trp  Ile Gly Tyr
    1610                1615                1620

Ser Phe  Leu Met His Thr Ala  Ala Gly Asp Glu Gly  Gly Gly Gln
    1625                1630                1635

Ser Leu  Val Ser Pro Gly Ser  Cys Leu Glu Asp Phe  Arg Ala Thr
    1640                1645                1650

Pro Phe  Ile Glu Cys Asn Gly  Gly Arg Gly Thr Cys  His Tyr Tyr
    1655                1660                1665

Ala Asn  Lys Tyr Ser Phe Trp  Leu Thr Thr Ile Pro  Glu Gln Ser
    1670                1675                1680

Phe Gln  Gly Ser Pro Ser Ala  Asp Thr Leu Lys Ala  Gly Leu Ile
    1685                1690                1695

Arg Thr  His Ile Ser Arg Cys  Gln Val Cys Met Lys  Asn Leu
    1700                1705                1710
```

<210> 94
<211> 1670
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(1670)

<223> human alpha3 chain of type IV collagen

<400> 94

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


Leu Leu Val Leu Leu Ala Ala Ala Pro Ala Ala Ser Lys Gly Cys Val
            20                  25                  30


Cys Lys Asp Lys Gly Gln Cys Phe Cys Asp Gly Ala Lys Gly Glu Lys
        35                  40                  45


Gly Glu Lys Gly Phe Pro Gly Pro Pro Gly Ser Pro Gly Gln Lys Gly
    50                  55                  60


Phe Thr Gly Pro Glu Gly Leu Pro Gly Pro Gln Gly Pro Lys Gly Phe
65                  70                  75                  80


Pro Gly Leu Pro Gly Leu Thr Gly Ser Lys Gly Val Arg Gly Ile Ser
                85                  90                  95


Gly Leu Pro Gly Phe Ser Gly Ser Pro Gly Leu Pro Gly Thr Pro Gly
            100                 105                 110


Asn Thr Gly Pro Tyr Gly Leu Val Gly Val Pro Gly Cys Ser Gly Ser
        115                 120                 125


Lys Gly Glu Gln Gly Phe Pro Gly Leu Pro Gly Thr Leu Gly Tyr Pro
    130                 135                 140


Gly Ile Pro Gly Ala Ala Gly Leu Lys Gly Gln Lys Gly Ala Pro Ala
145                 150                 155                 160


Lys Glu Glu Asp Ile Glu Leu Asp Ala Lys Gly Asp Pro Gly Leu Pro
                165                 170                 175


Gly Ala Pro Gly Pro Gln Gly Leu Pro Gly Pro Pro Gly Phe Pro Gly
            180                 185                 190
```

```
Pro Val Gly Pro Pro Gly Pro Pro Gly Phe Phe Gly Phe Pro Gly Ala
        195                 200                 205

Met Gly Pro Arg Gly Pro Lys Gly His Met Gly Glu Arg Val Ile Gly
    210                 215                 220

His Lys Gly Glu Arg Gly Val Lys Gly Leu Thr Gly Pro Pro Gly Pro
225                 230                 235                 240

Pro Gly Thr Val Ile Val Thr Leu Thr Gly Pro Asp Asn Arg Thr Asp
                245                 250                 255

Leu Lys Gly Glu Lys Gly Asp Lys Gly Ala Met Gly Glu Pro Gly Pro
            260                 265                 270

Pro Gly Pro Ser Gly Leu Pro Gly Glu Ser Tyr Gly Ser Glu Lys Gly
        275                 280                 285

Ala Pro Gly Asp Pro Gly Leu Gln Gly Lys Pro Gly Lys Asp Gly Val
    290                 295                 300

Pro Gly Phe Pro Gly Ser Glu Gly Val Lys Gly Asn Arg Gly Phe Pro
305                 310                 315                 320

Gly Leu Met Gly Glu Asp Gly Ile Lys Gly Gln Lys Gly Asp Ile Gly
                325                 330                 335

Pro Pro Gly Phe Arg Gly Pro Thr Glu Tyr Tyr Asp Thr Tyr Gln Glu
            340                 345                 350

Lys Gly Asp Glu Gly Thr Pro Gly Pro Pro Gly Pro Arg Gly Ala Arg
        355                 360                 365

Gly Pro Gln Gly Pro Ser Gly Pro Pro Gly Val Pro Gly Ser Pro Gly
    370                 375                 380
```

```
Ser Ser Arg Pro Gly Leu Arg Gly Ala Pro Gly Trp Pro Gly Leu Lys
385                 390                 395                 400

Gly Ser Lys Gly Glu Arg Gly Arg Pro Gly Lys Asp Ala Met Gly Thr
                405                 410                 415

Pro Gly Ser Pro Gly Cys Ala Gly Ser Pro Gly Leu Pro Gly Ser Pro
            420                 425                 430

Gly Pro Pro Gly Pro Pro Gly Asp Ile Val Phe Arg Lys Gly Pro Pro
        435                 440                 445

Gly Asp His Gly Leu Pro Gly Tyr Leu Gly Ser Pro Gly Ile Pro Gly
    450                 455                 460

Val Asp Gly Pro Lys Gly Glu Pro Gly Leu Leu Cys Thr Gln Cys Pro
465                 470                 475                 480

Tyr Ile Pro Gly Pro Pro Gly Leu Pro Gly Leu Pro Gly Leu His Gly
                485                 490                 495

Val Lys Gly Ile Pro Gly Arg Gln Gly Ala Ala Gly Leu Lys Gly Ser
            500                 505                 510

Pro Gly Ser Pro Gly Asn Thr Gly Leu Pro Gly Phe Pro Gly Phe Pro
        515                 520                 525

Gly Ala Gln Gly Asp Pro Gly Leu Lys Gly Glu Lys Gly Glu Thr Leu
    530                 535                 540

Gln Pro Glu Gly Gln Val Gly Val Pro Gly Asp Pro Gly Leu Arg Gly
545                 550                 555                 560

Gln Pro Gly Arg Lys Gly Leu Asp Gly Ile Pro Gly Thr Pro Gly Val
                565                 570                 575

Lys Gly Leu Pro Gly Pro Lys Gly Glu Leu Ala Leu Ser Gly Glu Lys
            580                 585                 590
```

```
Gly Asp Gln Gly Pro Pro Gly Asp Pro Gly Ser Pro Gly Ser Pro Gly
        595                 600                 605

Pro Ala Gly Pro Ala Gly Pro Pro Gly Tyr Gly Pro Gln Gly Glu Pro
    610                 615                 620

Gly Leu Gln Gly Thr Gln Gly Val Pro Gly Ala Pro Gly Pro Pro Gly
625                 630                 635                 640

Glu Ala Gly Pro Arg Gly Glu Leu Ser Val Ser Thr Pro Val Pro Gly
                645                 650                 655

Pro Pro Gly Pro Pro Gly Pro Pro Gly His Pro Gly Pro Gln Gly Pro
            660                 665                 670

Pro Gly Ile Pro Gly Ser Leu Gly Lys Cys Gly Asp Pro Gly Leu Pro
        675                 680                 685

Gly Pro Asp Gly Glu Pro Gly Ile Pro Gly Ile Gly Phe Pro Gly Pro
    690                 695                 700

Pro Gly Pro Lys Gly Asp Gln Gly Phe Pro Gly Thr Lys Gly Ser Leu
705                 710                 715                 720

Gly Cys Pro Gly Lys Met Gly Glu Pro Gly Leu Pro Gly Lys Pro Gly
                725                 730                 735

Leu Pro Gly Ala Lys Gly Glu Pro Ala Val Ala Met Pro Gly Gly Pro
            740                 745                 750

Gly Thr Pro Gly Phe Pro Gly Glu Arg Gly Asn Ser Gly Glu His Gly
        755                 760                 765

Glu Ile Gly Leu Pro Gly Leu Pro Gly Leu Pro Gly Thr Pro Gly Asn
    770                 775                 780
```

```
Glu Gly Leu Asp Gly Pro Arg Gly Asp Pro Gly Gln Pro Gly Pro Pro
785                 790                 795                 800


Gly Glu Gln Gly Pro Pro Gly Arg Cys Ile Glu Gly Pro Arg Gly Ala
                805                 810                 815


Gln Gly Leu Pro Gly Leu Asn Gly Leu Lys Gly Gln Gln Gly Arg Arg
            820                 825                 830


Gly Lys Thr Gly Pro Lys Gly Asp Pro Gly Ile Pro Gly Leu Asp Arg
        835                 840                 845


Ser Gly Phe Pro Gly Glu Thr Gly Ser Pro Gly Ile Pro Gly His Gln
    850                 855                 860


Gly Glu Met Gly Pro Leu Gly Gln Arg Gly Tyr Pro Gly Asn Pro Gly
865                 870                 875                 880


Ile Leu Gly Pro Pro Gly Glu Asp Gly Val Ile Gly Met Met Gly Phe
                885                 890                 895


Pro Gly Ala Ile Gly Pro Pro Gly Pro Pro Gly Asn Pro Gly Thr Pro
            900                 905                 910


Gly Gln Arg Gly Ser Pro Gly Ile Pro Gly Val Lys Gly Gln Arg Gly
        915                 920                 925


Thr Pro Gly Ala Lys Gly Glu Gln Gly Asp Lys Gly Asn Pro Gly Pro
    930                 935                 940


Ser Glu Ile Ser His Val Ile Gly Asp Lys Gly Glu Pro Gly Leu Lys
945                 950                 955                 960


Gly Phe Ala Gly Asn Pro Gly Glu Lys Gly Asn Arg Gly Val Pro Gly
                965                 970                 975


Met Pro Gly Leu Lys Gly Leu Lys Gly Leu Pro Gly Pro Ala Gly Pro
            980                 985                 990
```

```
Pro Gly Pro Arg Gly Asp Leu Gly  Ser Thr Gly Asn Pro  Gly Glu Pro
        995                 1000                1005


Gly Leu  Arg Gly Ile Pro Gly  Ser Met Gly Asn Met  Gly Met Pro
    1010                1015                1020


Gly Ser  Lys Gly Lys Arg Gly  Thr Leu Gly Phe Pro  Gly Arg Ala
    1025                1030                1035


Gly Arg  Pro Gly Leu Pro Gly  Ile His Gly Leu Gln  Gly Asp Lys
    1040                1045                1050


Gly Glu  Pro Gly Tyr Ser Glu  Gly Thr Arg Pro Gly  Pro Pro Gly
    1055                1060                1065


Pro Thr  Gly Asp Pro Gly Leu  Pro Gly Asp Met Gly  Lys Lys Gly
    1070                1075                1080


Glu Met  Gly Gln Pro Gly Pro  Pro Gly His Leu Gly  Pro Ala Gly
    1085                1090                1095


Pro Glu  Gly Ala Pro Gly Ser  Pro Gly Ser Pro Gly  Leu Pro Gly
    1100                1105                1110


Lys Pro  Gly Pro His Gly Asp  Leu Gly Phe Lys Gly  Ile Lys Gly
    1115                1120                1125


Leu Leu  Gly Pro Pro Gly Ile  Arg Gly Pro Pro Gly  Leu Pro Gly
    1130                1135                1140


Phe Pro  Gly Ser Pro Gly Pro  Met Gly Ile Arg Gly  Asp Gln Gly
    1145                1150                1155


Arg Asp  Gly Ile Pro Gly Pro  Ala Gly Glu Lys Gly  Glu Thr Gly
    1160                1165                1170
```

```
Leu Leu  Arg Ala Pro Pro Gly  Pro Arg Gly Asn Pro  Gly Ala Gln
    1175                1180                1185

Gly Ala  Lys Gly Asp Arg Gly  Ala Pro Gly Phe Pro  Gly Leu Pro
    1190                1195                1200

Gly Arg  Lys Gly Ala Met Gly  Asp Ala Gly Pro Arg  Gly Pro Thr
    1205                1210                1215

Gly Ile  Glu Gly Phe Pro Gly  Pro Pro Gly Leu Pro  Gly Ala Ile
    1220                1225                1230

Ile Pro  Gly Gln Thr Gly Asn  Arg Gly Pro Pro Gly  Ser Arg Gly
    1235                1240                1245

Ser Pro  Gly Ala Pro Gly Pro  Pro Gly Pro Pro Gly  Ser His Val
    1250                1255                1260

Ile Gly  Ile Lys Gly Asp Lys  Gly Ser Met Gly His  Pro Gly Pro
    1265                1270                1275

Lys Gly  Pro Pro Gly Thr Ala  Gly Asp Met Gly Pro  Pro Gly Arg
    1280                1285                1290

Leu Gly  Ala Pro Gly Thr Pro  Gly Leu Pro Gly Pro  Arg Gly Asp
    1295                1300                1305

Pro Gly  Phe Gln Gly Phe Pro  Gly Val Lys Gly Glu  Lys Gly Asn
    1310                1315                1320

Pro Gly  Phe Leu Gly Ser Ile  Gly Pro Pro Gly Pro  Ile Gly Pro
    1325                1330                1335

Lys Gly  Pro Pro Gly Val Arg  Gly Asp Pro Gly Thr  Leu Lys Ile
    1340                1345                1350

Ile Ser  Leu Pro Gly Ser Pro  Gly Pro Pro Gly Thr  Pro Gly Glu
    1355                1360                1365
```

```
Pro Gly  Met Gln Gly Glu Pro  Gly Pro Pro Gly Pro  Pro Gly Asn
    1370                1375                1380

Leu Gly  Pro Cys Gly Pro Arg  Gly Lys Pro Gly Lys  Asp Gly Lys
    1385                1390                1395

Pro Gly  Thr Pro Gly Pro Ala  Gly Glu Lys Gly Asn  Lys Gly Ser
    1400                1405                1410

Lys Gly  Glu Pro Gly Pro Ala  Gly Ser Asp Gly Leu  Pro Gly Leu
    1415                1420                1425

Lys Gly  Lys Arg Gly Asp Ser  Gly Ser Pro Ala Thr  Trp Thr Thr
    1430                1435                1440

Arg Gly  Phe Val Phe Thr Arg  His Ser Gln Thr Thr  Ala Ile Pro
    1445                1450                1455

Ser Cys  Pro Glu Gly Thr Val  Pro Leu Tyr Ser Gly  Phe Ser Phe
    1460                1465                1470

Leu Phe  Val Gln Gly Asn Gln  Arg Ala His Gly Gln  Asp Leu Gly
    1475                1480                1485

Thr Leu  Gly Ser Cys Leu Gln  Arg Phe Thr Thr Met  Pro Phe Leu
    1490                1495                1500

Phe Cys  Asn Val Asn Asp Val  Cys Asn Phe Ala Ser  Arg Asn Asp
    1505                1510                1515

Tyr Ser  Tyr Trp Leu Ser Thr  Pro Ala Leu Met Pro  Met Asn Met
    1520                1525                1530

Ala Pro  Ile Thr Gly Arg Ala  Leu Glu Pro Tyr Ile  Ser Arg Cys
    1535                1540                1545
```

```
Thr Val  Cys Glu Gly Pro Ala  Ile Ala Ile Ala Val  His Ser Gln
    1550                1555                1560

Thr Thr  Asp Ile Pro Pro Cys  Pro His Gly Trp Ile  Ser Leu Trp
    1565                1570                1575

Lys Gly  Phe Ser Phe Ile Met  Phe Thr Ser Ala Gly  Ser Glu Gly
    1580                1585                1590

Thr Gly  Gln Ala Leu Ala Ser  Pro Gly Ser Cys Leu  Glu Glu Phe
    1595                1600                1605

Arg Ala  Ser Pro Phe Leu Glu  Cys His Gly Arg Gly  Thr Cys Asn
    1610                1615                1620

Tyr Tyr  Ser Asn Ser Tyr Ser  Phe Trp Leu Ala Ser  Leu Asn Pro
    1625                1630                1635

Glu Arg  Met Phe Arg Lys Pro  Ile Pro Ser Thr Val  Lys Ala Gly
    1640                1645                1650

Glu Leu  Glu Lys Ile Ile Ser  Arg Cys Gln Val Cys  Met Lys Lys
    1655                1660                1665

Arg His
    1670
```

<210> 95
<211> 1690
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(1690)
<223> human alpha4 chain of type IV collagen

<400> 95

```
Met Trp Ser Leu His Ile Val Leu Met Arg Cys Ser Phe Arg Leu Thr
```

```
1               5                   10                  15

Lys Ser Leu Ala Thr Gly Pro Trp Ser Leu Ile Leu Ile Leu Phe Ser
            20                  25                  30

Val Gln Tyr Val Tyr Gly Ser Gly Lys Lys Tyr Ile Gly Pro Cys Gly
        35                  40                  45

Gly Arg Asp Cys Ser Val Cys His Cys Val Pro Glu Lys Gly Ser Arg
    50                  55                  60

Gly Pro Pro Gly Pro Pro Gly Pro Gln Gly Pro Ile Gly Pro Leu Gly
65                  70                  75                  80

Ala Pro Gly Pro Ile Gly Leu Ser Gly Glu Lys Gly Met Arg Gly Asp
                85                  90                  95

Arg Gly Pro Pro Gly Ala Ala Gly Asp Lys Gly Asp Lys Gly Pro Thr
            100                 105                 110

Gly Val Pro Gly Phe Pro Gly Leu Asp Gly Ile Pro Gly His Pro Gly
        115                 120                 125

Pro Pro Gly Pro Arg Gly Lys Pro Gly Met Ser Gly His Asn Gly Ser
    130                 135                 140

Arg Gly Asp Pro Gly Phe Pro Gly Gly Arg Gly Ala Leu Gly Pro Gly
145                 150                 155                 160

Gly Pro Leu Gly His Pro Gly Glu Lys Gly Glu Lys Gly Asn Ser Val
                165                 170                 175

Phe Ile Leu Gly Ala Val Lys Gly Ile Gln Gly Asp Arg Gly Asp Pro
            180                 185                 190

Gly Leu Pro Gly Leu Pro Gly Ser Trp Gly Ala Gly Gly Pro Ala Gly
        195                 200                 205
```

```
Pro Thr Gly Tyr Pro Gly Glu Pro Gly Leu Val Gly Pro Pro Gly Gln
    210                 215                 220

Pro Gly Arg Pro Gly Leu Lys Gly Asn Pro Gly Val Gly Val Lys Gly
225                 230                 235                 240

Gln Met Gly Asp Pro Gly Glu Val Gly Gln Gln Gly Ser Pro Gly Pro
                245                 250                 255

Thr Leu Leu Val Glu Pro Pro Asp Phe Cys Leu Tyr Lys Gly Glu Lys
            260                 265                 270

Gly Ile Lys Gly Ile Pro Gly Met Val Gly Leu Pro Gly Pro Pro Gly
        275                 280                 285

Arg Lys Gly Glu Ser Gly Ile Gly Ala Lys Gly Glu Lys Gly Ile Pro
    290                 295                 300

Gly Phe Pro Gly Pro Arg Gly Asp Pro Gly Ser Tyr Gly Ser Pro Gly
305                 310                 315                 320

Phe Pro Gly Leu Lys Gly Glu Leu Gly Leu Val Gly Asp Pro Gly Leu
                325                 330                 335

Phe Gly Leu Ile Gly Pro Lys Gly Asp Pro Gly Asn Arg Gly His Pro
            340                 345                 350

Gly Pro Pro Gly Val Leu Val Thr Pro Pro Leu Pro Leu Lys Gly Pro
        355                 360                 365

Pro Gly Asp Pro Gly Phe Pro Gly Arg Tyr Gly Glu Thr Gly Asp Val
    370                 375                 380

Gly Pro Pro Gly Pro Pro Gly Leu Leu Gly Arg Pro Gly Glu Ala Cys
385                 390                 395                 400

Ala Gly Met Ile Gly Pro Pro Gly Pro Gln Gly Phe Pro Gly Leu Pro
```

```
                405                 410                 415

Gly Leu Pro Gly Glu Ala Gly Ile Pro Gly Arg Pro Asp Ser Ala Pro
            420                 425                 430

Gly Lys Pro Gly Lys Pro Gly Ser Pro Gly Leu Pro Gly Ala Pro Gly
        435                 440                 445

Leu Gln Gly Leu Pro Gly Ser Ser Val Ile Tyr Cys Ser Val Gly Asn
    450                 455                 460

Pro Gly Pro Gln Gly Ile Lys Gly Lys Val Gly Pro Pro Gly Gly Arg
465                 470                 475                 480

Gly Pro Lys Gly Glu Lys Gly Asn Glu Gly Leu Cys Ala Cys Glu Pro
                485                 490                 495

Gly Pro Met Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly Arg Gln Gly
            500                 505                 510

Ser Lys Gly Asp Leu Gly Leu Pro Gly Trp Leu Gly Thr Lys Gly Asp
        515                 520                 525

Pro Gly Pro Pro Gly Ala Glu Gly Pro Pro Gly Leu Pro Gly Lys His
    530                 535                 540

Gly Ala Ser Gly Pro Pro Gly Asn Lys Gly Ala Lys Gly Asp Met Val
545                 550                 555                 560

Val Ser Arg Val Lys Gly His Lys Gly Glu Arg Gly Pro Asp Gly Pro
                565                 570                 575

Pro Gly Phe Pro Gly Gln Pro Gly Ser His Gly Arg Asp Gly His Ala
            580                 585                 590

Gly Glu Lys Gly Asp Pro Gly Pro Pro Gly Asp His Glu Asp Ala Thr
        595                 600                 605
```

```
Pro Gly Gly Lys Gly Phe Pro Gly Pro Leu Gly Pro Pro Gly Lys Ala
    610                 615                 620

Gly Pro Val Gly Pro Pro Gly Leu Gly Phe Pro Gly Pro Pro Gly Glu
625                 630                 635                 640

Arg Gly His Pro Gly Val Pro Gly His Pro Gly Val Arg Gly Pro Asp
                645                 650                 655

Gly Leu Lys Gly Gln Lys Gly Asp Thr Ile Ser Cys Asn Val Thr Tyr
            660                 665                 670

Pro Gly Arg His Gly Pro Pro Gly Phe Asp Gly Pro Pro Gly Pro Lys
        675                 680                 685

Gly Phe Pro Gly Pro Gln Gly Ala Pro Gly Leu Ser Gly Ser Asp Gly
    690                 695                 700

His Lys Gly Arg Pro Gly Thr Pro Gly Thr Ala Glu Ile Pro Gly Pro
705                 710                 715                 720

Pro Gly Phe Arg Gly Asp Met Gly Asp Pro Gly Phe Gly Gly Glu Lys
                725                 730                 735

Gly Ser Ser Pro Val Gly Pro Pro Gly Pro Pro Gly Ser Pro Gly Val
            740                 745                 750

Asn Gly Gln Lys Gly Ile Pro Gly Asp Pro Ala Phe Gly His Leu Gly
        755                 760                 765

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

Arg Gly Asp Pro Gly Cys Pro Gly Ala Glu Gly Pro Ala Gly Ile Pro
785                 790                 795                 800

Gly Phe Leu Gly Leu Lys Gly Pro Lys Gly Arg Glu Gly His Ala Gly
```

```
                805                 810                 815

Phe Pro Gly Val Pro Gly Pro Pro Gly His Ser Cys Glu Arg Gly Ala
            820                 825                 830

Pro Gly Ile Pro Gly Gln Pro Gly Leu Pro Gly Tyr Pro Gly Ser Pro
        835                 840                 845

Gly Ala Pro Gly Gly Lys Gly Gln Pro Gly Asp Val Gly Pro Pro Gly
    850                 855                 860

Pro Ala Gly Met Lys Gly Leu Pro Gly Leu Pro Gly Arg Pro Gly Ala
865                 870                 875                 880

His Gly Pro Pro Gly Leu Pro Gly Ile Pro Gly Pro Phe Gly Asp Asp
                885                 890                 895

Gly Leu Pro Gly Pro Pro Gly Pro Lys Gly Pro Arg Gly Leu Pro Gly
            900                 905                 910

Phe Pro Gly Phe Pro Gly Glu Arg Gly Lys Pro Gly Ala Glu Gly Cys
        915                 920                 925

Pro Gly Ala Lys Gly Glu Pro Gly Glu Lys Gly Met Ser Gly Leu Pro
    930                 935                 940

Gly Asp Arg Gly Leu Arg Gly Ala Lys Gly Ala Ile Gly Pro Pro Gly
945                 950                 955                 960

Asp Glu Gly Glu Met Ala Ile Ile Ser Gln Lys Gly Thr Pro Gly Glu
                965                 970                 975

Pro Gly Pro Pro Gly Asp Asp Gly Phe Pro Gly Glu Arg Gly Asp Lys
            980                 985                 990

Gly Thr Pro Gly Met Gln Gly Arg  Arg Gly Glu Pro Gly  Arg Tyr Gly
        995                 1000                1005
```

```
Pro Pro  Gly Phe His Arg Gly  Glu Pro Gly Glu Lys  Gly Gln Pro
    1010                1015                1020

Gly Pro  Pro Gly Pro Pro Gly  Pro Pro Gly Ser Thr  Gly Leu Arg
    1025                1030                1035

Gly Phe  Ile Gly Phe Pro Gly  Leu Pro Gly Asp Gln  Gly Glu Pro
    1040                1045                1050

Gly Ser  Pro Gly Pro Pro Gly  Phe Ser Gly Ile Asp  Gly Ala Arg
    1055                1060                1065

Gly Pro  Lys Gly Asn Lys Gly  Asp Pro Ala Ser His  Phe Gly Pro
    1070                1075                1080

Pro Gly  Pro Lys Gly Glu Pro  Gly Ser Pro Gly Cys  Pro Gly His
    1085                1090                1095

Phe Gly  Ala Ser Gly Glu Gln  Gly Leu Pro Gly Ile  Gln Gly Pro
    1100                1105                1110

Arg Gly  Ser Pro Gly Arg Pro  Gly Pro Pro Gly Ser  Ser Gly Pro
    1115                1120                1125

Pro Gly  Cys Pro Gly Asp His  Gly Met Pro Gly Leu  Arg Gly Gln
    1130                1135                1140

Pro Gly  Glu Met Gly Asp Pro  Gly Pro Arg Gly Leu  Gln Gly Asp
    1145                1150                1155

Pro Gly  Ile Pro Gly Pro Pro  Gly Ile Lys Gly Pro  Ser Gly Ser
    1160                1165                1170

Pro Gly  Leu Asn Gly Leu His  Gly Leu Lys Gly Gln  Lys Gly Thr
    1175                1180                1185

Lys Gly  Ala Ser Gly Leu His  Asp Val Gly Pro Pro  Gly Pro Val
```

```
    1190                1195                1200

Gly Ile  Pro Gly Leu Lys Gly  Glu Arg Gly Asp Pro  Gly Ser Pro
    1205                1210                1215

Gly Ile  Ser Pro Pro Gly Pro  Arg Gly Lys Lys Gly  Pro Pro Gly
    1220                1225                1230

Pro Pro  Gly Ser Ser Gly Pro  Pro Gly Pro Ala Gly  Ala Thr Gly
    1235                1240                1245

Arg Ala  Pro Lys Asp Ile Pro  Asp Pro Gly Pro Pro  Gly Asp Gln
    1250                1255                1260

Gly Pro  Pro Gly Pro Asp Gly  Pro Arg Gly Ala Pro  Gly Pro Pro
    1265                1270                1275

Gly Leu  Pro Gly Ser Val Asp  Leu Leu Arg Gly Glu  Pro Gly Asp
    1280                1285                1290

Cys Gly  Leu Pro Gly Pro Pro  Gly Pro Pro Gly Pro  Pro Gly Pro
    1295                1300                1305

Pro Gly  Tyr Lys Gly Phe Pro  Gly Cys Asp Gly Lys  Asp Gly Gln
    1310                1315                1320

Lys Gly  Pro Val Gly Phe Pro  Gly Pro Gln Gly Pro  His Gly Phe
    1325                1330                1335

Pro Gly  Pro Pro Gly Glu Lys  Gly Leu Pro Gly Pro  Pro Gly Arg
    1340                1345                1350

Lys Gly  Pro Thr Gly Leu Pro  Gly Pro Arg Gly Glu  Pro Gly Pro
    1355                1360                1365

Pro Ala  Asp Val Asp Asp Cys  Pro Arg Ile Pro Gly  Leu Pro Gly
    1370                1375                1380
```

```
Ala Pro  Gly Met Arg Gly Pro  Glu Gly Ala Met Gly  Leu Pro Gly
    1385                1390                1395

Met Arg  Gly Pro Ser Gly Pro  Gly Cys Lys Gly Glu  Pro Gly Leu
    1400                1405                1410

Asp Gly  Arg Arg Gly Val Asp  Gly Val Pro Gly Ser  Pro Gly Pro
    1415                1420                1425

Pro Gly  Arg Lys Gly Asp Thr  Gly Glu Asp Gly Tyr  Pro Gly Gly
    1430                1435                1440

Pro Gly  Pro Pro Gly Pro Ile  Gly Asp Pro Gly Pro  Lys Gly Phe
    1445                1450                1455

Gly Pro  Gly Tyr Leu Gly Gly  Phe Leu Leu Val Leu  His Ser Gln
    1460                1465                1470

Thr Asp  Gln Glu Pro Thr Cys  Pro Leu Gly Met Pro  Arg Leu Trp
    1475                1480                1485

Thr Gly  Tyr Ser Leu Leu Tyr  Leu Glu Gly Gln Glu  Lys Ala His
    1490                1495                1500

Asn Gln  Asp Leu Gly Leu Ala  Gly Ser Cys Leu Pro  Val Phe Ser
    1505                1510                1515

Thr Leu  Pro Phe Ala Tyr Cys  Asn Ile His Gln Val  Cys His Tyr
    1520                1525                1530

Ala Gln  Arg Asn Asp Arg Ser  Tyr Trp Leu Ala Ser  Ala Ala Pro
    1535                1540                1545

Leu Pro  Met Met Pro Leu Ser  Glu Glu Ala Ile Arg  Pro Tyr Val
    1550                1555                1560

Ser Arg  Cys Ala Val Cys Glu  Ala Pro Ala Gln Ala  Val Ala Val
```

```
    1565                1570                1575

His Ser  Gln Asp Gln Ser Ile  Pro Pro Cys Pro Gln  Thr Trp Arg
    1580                1585                1590

Ser Leu  Trp Ile Gly Tyr Ser  Phe Leu Met His Thr  Gly Ala Gly
    1595                1600                1605

Asp Gln  Gly Gly Gly Gln Ala  Leu Met Ser Pro Gly  Ser Cys Leu
    1610                1615                1620

Glu Asp  Phe Arg Ala Ala Pro  Phe Leu Glu Cys Gln  Gly Arg Gln
    1625                1630                1635

Gly Thr  Cys His Phe Phe Ala  Asn Lys Tyr Ser Phe  Trp Leu Thr
    1640                1645                1650

Thr Val  Lys Ala Asp Leu Gln  Phe Ser Ser Ala Pro  Ala Pro Asp
    1655                1660                1665

Thr Leu  Lys Glu Ser Gln Ala  Gln Arg Gln Lys Ile  Ser Arg Cys
    1670                1675                1680

Gln Val  Cys Val Lys Tyr Ser
    1685                1690


<210>  96
<211>  1696
<212>  PRT
<213>  Homo sapiens


<220>
<221>  misc_feature
<222>  (1)..(1696)
<223>  human alpha5 chain of type IV collagen

<400>  96

Met Glu Val Asp Ser Gly Lys Thr Glu Asn Arg Asp Trp Glu Gly Phe
1               5                   10                  15
```

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

Ala Cys Tyr Gly Cys Ser Pro Gly Ser Lys Cys Asp Cys Ser Gly Ile
        35                  40                  45

Lys Gly Glu Lys Gly Glu Arg Gly Phe Pro Gly Leu Glu Gly His Pro
    50                  55                  60

Gly Leu Pro Gly Phe Pro Gly Pro Glu Gly Pro Pro Gly Pro Arg Gly
65                  70                  75                  80

Gln Lys Gly Asp Asp Gly Ile Pro Gly Pro Pro Gly Pro Lys Gly Ile
                85                  90                  95

Arg Gly Pro Pro Gly Leu Pro Gly Phe Pro Gly Thr Pro Gly Leu Pro
            100                 105                 110

Gly Met Pro Gly His Asp Gly Ala Pro Gly Pro Gln Gly Ile Pro Gly
        115                 120                 125

Cys Asn Gly Thr Lys Gly Glu Arg Gly Phe Pro Gly Ser Pro Gly Phe
    130                 135                 140

Pro Gly Leu Gln Gly Pro Pro Gly Pro Pro Gly Ile Pro Gly Met Lys
145                 150                 155                 160

Gly Glu Pro Gly Ser Ile Ile Met Ser Ser Leu Pro Gly Pro Lys Gly
                165                 170                 175

Asn Pro Gly Tyr Pro Gly Pro Pro Gly Ile Gln Gly Leu Pro Gly Pro
            180                 185                 190

Thr Gly Ile Pro Gly Pro Ile Gly Pro Pro Gly Pro Pro Gly Leu Met
        195                 200                 205
```

```
Gly Pro Pro Gly Pro Pro Gly Leu Pro Gly Pro Lys Gly Asn Met Gly
    210                 215                 220

Leu Asn Phe Gln Gly Pro Lys Gly Glu Lys Gly Glu Gln Gly Leu Gln
225                 230                 235                 240

Gly Pro Pro Gly Pro Pro Gly Gln Ile Ser Glu Gln Lys Arg Pro Ile
                245                 250                 255

Asp Val Glu Phe Gln Lys Gly Asp Gln Gly Leu Pro Gly Asp Arg Gly
            260                 265                 270

Pro Pro Gly Pro Pro Gly Ile Arg Gly Pro Pro Gly Pro Pro Gly Gly
        275                 280                 285

Glu Lys Gly Glu Lys Gly Glu Gln Gly Glu Pro Gly Lys Arg Gly Lys
    290                 295                 300

Pro Gly Lys Asp Gly Glu Asn Gly Gln Pro Gly Ile Pro Gly Leu Pro
305                 310                 315                 320

Gly Asp Pro Gly Tyr Pro Gly Glu Pro Gly Arg Asp Gly Glu Lys Gly
                325                 330                 335

Gln Lys Gly Asp Thr Gly Pro Pro Gly Pro Pro Gly Leu Val Ile Pro
            340                 345                 350

Arg Pro Gly Thr Gly Ile Thr Ile Gly Glu Lys Gly Asn Ile Gly Leu
        355                 360                 365

Pro Gly Leu Pro Gly Glu Lys Gly Glu Arg Gly Phe Pro Gly Ile Gln
    370                 375                 380

Gly Pro Pro Gly Leu Pro Gly Pro Pro Gly Ala Ala Val Met Gly Pro
385                 390                 395                 400

Pro Gly Pro Pro Gly Phe Pro Gly Glu Arg Gly Gln Lys Gly Asp Glu
                405                 410                 415
```

```
Gly Pro Pro Gly Ile Ser Ile Pro Gly Pro Pro Gly Leu Asp Gly Gln
            420                 425                 430

Pro Gly Ala Pro Gly Leu Pro Gly Pro Pro Gly Pro Ala Gly Pro His
        435                 440                 445

Ile Pro Pro Ser Asp Glu Ile Cys Glu Pro Gly Pro Pro Gly Pro Pro
    450                 455                 460

Gly Ser Pro Gly Asp Lys Gly Leu Gln Gly Glu Gln Gly Val Lys Gly
465                 470                 475                 480

Asp Lys Gly Asp Thr Cys Phe Asn Cys Ile Gly Thr Gly Ile Ser Gly
                485                 490                 495

Pro Pro Gly Gln Pro Gly Leu Pro Gly Leu Pro Gly Pro Pro Gly Ser
            500                 505                 510

Leu Gly Phe Pro Gly Gln Lys Gly Glu Lys Gly Gln Ala Gly Ala Thr
        515                 520                 525

Gly Pro Lys Gly Leu Pro Gly Ile Pro Gly Ala Pro Gly Ala Pro Gly
    530                 535                 540

Phe Pro Gly Ser Lys Gly Glu Pro Gly Asp Ile Leu Thr Phe Pro Gly
545                 550                 555                 560

Met Lys Gly Asp Lys Gly Glu Leu Gly Ser Pro Gly Ala Pro Gly Leu
                565                 570                 575

Pro Gly Leu Pro Gly Thr Pro Gly Gln Asp Gly Leu Pro Gly Leu Pro
            580                 585                 590

Gly Pro Lys Gly Glu Pro Gly Gly Ile Thr Phe Lys Gly Glu Arg Gly
        595                 600                 605
```

```
Pro Pro Gly Asn Pro Gly Leu Pro Gly Leu Pro Gly Asn Ile Gly Pro
    610                 615                 620

Met Gly Pro Pro Gly Phe Gly Pro Pro Gly Pro Val Gly Glu Lys Gly
625                 630                 635                 640

Ile Gln Gly Val Ala Gly Asn Pro Gly Gln Pro Gly Ile Pro Gly Pro
                645                 650                 655

Lys Gly Asp Pro Gly Gln Thr Ile Thr Gln Pro Gly Lys Pro Gly Leu
            660                 665                 670

Pro Gly Asn Pro Gly Arg Asp Gly Asp Val Gly Leu Pro Gly Asp Pro
        675                 680                 685

Gly Leu Pro Gly Gln Pro Gly Leu Pro Gly Ile Pro Gly Ser Lys Gly
    690                 695                 700

Glu Pro Gly Ile Pro Gly Ile Gly Leu Pro Gly Pro Pro Gly Pro Lys
705                 710                 715                 720

Gly Phe Pro Gly Ile Pro Gly Pro Pro Gly Ala Pro Gly Thr Pro Gly
                725                 730                 735

Arg Ile Gly Leu Glu Gly Pro Pro Gly Pro Pro Gly Phe Pro Gly Pro
            740                 745                 750

Lys Gly Glu Pro Gly Phe Ala Leu Pro Gly Pro Pro Gly Pro Pro Gly
        755                 760                 765

Leu Pro Gly Phe Lys Gly Ala Leu Gly Pro Lys Gly Asp Arg Gly Phe
    770                 775                 780

Pro Gly Pro Pro Gly Pro Pro Gly Arg Thr Gly Leu Asp Gly Leu Pro
785                 790                 795                 800

Gly Pro Lys Gly Asp Val Gly Pro Asn Gly Gln Pro Gly Pro Met Gly
                805                 810                 815
```

```
Pro Pro Gly Leu Pro Gly Ile Gly Val Gln Gly Pro Pro Gly Pro Pro
            820                 825                 830

Gly Ile Pro Gly Pro Ile Gly Gln Pro Gly Leu His Gly Ile Pro Gly
        835                 840                 845

Glu Lys Gly Asp Pro Gly Pro Pro Gly Leu Asp Val Pro Gly Pro Pro
    850                 855                 860

Gly Glu Arg Gly Ser Pro Gly Ile Pro Gly Ala Pro Gly Pro Ile Gly
865                 870                 875                 880

Pro Pro Gly Ser Pro Gly Leu Pro Gly Lys Ala Gly Ala Ser Gly Phe
                885                 890                 895

Pro Gly Thr Lys Gly Glu Met Gly Met Met Gly Pro Pro Gly Pro Pro
            900                 905                 910

Gly Pro Leu Gly Ile Pro Gly Arg Ser Gly Val Pro Gly Leu Lys Gly
        915                 920                 925

Asp Asp Gly Leu Gln Gly Gln Pro Gly Leu Pro Gly Pro Thr Gly Glu
    930                 935                 940

Lys Gly Ser Lys Gly Glu Pro Gly Leu Pro Gly Pro Pro Gly Pro Met
945                 950                 955                 960

Asp Pro Asn Leu Leu Gly Ser Lys Gly Glu Lys Gly Glu Pro Gly Leu
                965                 970                 975

Pro Gly Ile Pro Gly Val Ser Gly Pro Lys Gly Tyr Gln Gly Leu Pro
            980                 985                 990

Gly Asp Pro Gly Gln Pro Gly Leu  Ser Gly Gln Pro Gly  Leu Pro Gly
        995                 1000                1005
```

```
Pro Pro  Gly Pro Lys Gly Asn  Pro Gly Leu Pro Gly  Gln Pro Gly
    1010                1015                1020

Leu Ile  Gly Pro Pro Gly Leu  Lys Gly Thr Ile Gly  Asp Met Gly
    1025                1030                1035

Phe Pro  Gly Pro Gln Gly Val  Glu Gly Pro Pro Gly  Pro Ser Gly
    1040                1045                1050

Val Pro  Gly Gln Pro Gly Ser  Pro Gly Leu Pro Gly  Gln Lys Gly
    1055                1060                1065

Asp Lys  Gly Asp Pro Gly Ile  Ser Ser Ile Gly Leu  Pro Gly Leu
    1070                1075                1080

Pro Gly  Pro Lys Gly Glu Pro  Gly Leu Pro Gly Tyr  Pro Gly Asn
    1085                1090                1095

Pro Gly  Ile Lys Gly Ser Val  Gly Asp Pro Gly Leu  Pro Gly Leu
    1100                1105                1110

Pro Gly  Thr Pro Gly Ala Lys  Gly Gln Pro Gly Leu  Pro Gly Phe
    1115                1120                1125

Pro Gly  Thr Pro Gly Pro Pro  Gly Pro Lys Gly Ile  Ser Gly Pro
    1130                1135                1140

Pro Gly  Asn Pro Gly Leu Pro  Gly Glu Pro Gly Pro  Val Gly Gly
    1145                1150                1155

Gly Gly  His Pro Gly Gln Pro  Gly Pro Pro Gly Glu  Lys Gly Lys
    1160                1165                1170

Pro Gly  Gln Asp Gly Ile Pro  Gly Pro Ala Gly Gln  Lys Gly Glu
    1175                1180                1185

Pro Gly  Gln Pro Gly Phe Gly  Asn Pro Gly Pro Pro  Gly Leu Pro
    1190                1195                1200
```

```
Gly Leu  Ser Gly Gln Lys Gly  Asp Gly Gly Leu Pro  Gly Ile Pro
    1205                1210                1215

Gly Asn  Pro Gly Leu Pro Gly  Pro Lys Gly Glu Pro  Gly Phe His
    1220                1225                1230

Gly Phe  Pro Gly Val Gln Gly  Pro Pro Gly Pro Pro  Gly Ser Pro
    1235                1240                1245

Gly Pro  Ala Leu Glu Gly Pro  Lys Gly Asn Pro Gly  Pro Gln Gly
    1250                1255                1260

Pro Pro  Gly Arg Pro Gly Pro  Thr Gly Phe Gln Gly  Leu Pro Gly
    1265                1270                1275

Pro Glu  Gly Pro Pro Gly Leu  Pro Gly Asn Gly Gly  Ile Lys Gly
    1280                1285                1290

Glu Lys  Gly Asn Pro Gly Gln  Pro Gly Leu Pro Gly  Leu Pro Gly
    1295                1300                1305

Leu Lys  Gly Asp Gln Gly Pro  Pro Gly Leu Gln Gly  Asn Pro Gly
    1310                1315                1320

Arg Pro  Gly Leu Asn Gly Met  Lys Gly Asp Pro Gly  Leu Pro Gly
    1325                1330                1335

Val Pro  Gly Phe Pro Gly Met  Lys Gly Pro Ser Gly  Val Pro Gly
    1340                1345                1350

Ser Ala  Gly Pro Glu Gly Glu  Pro Gly Leu Ile Gly  Pro Pro Gly
    1355                1360                1365

Pro Pro  Gly Leu Pro Gly Pro  Ser Gly Gln Ser Ile  Ile Ile Lys
    1370                1375                1380
```

```
Gly Asp  Ala Gly Pro Pro Gly  Ile Pro Gly Gln Pro  Gly Leu Lys
    1385                1390                1395

Gly Leu  Pro Gly Pro Gln Gly  Pro Gln Gly Leu Pro  Gly Pro Thr
    1400                1405                1410

Gly Pro  Pro Gly Asp Pro Gly  Arg Asn Gly Leu Pro  Gly Phe Asp
    1415                1420                1425

Gly Ala  Gly Gly Arg Lys Gly  Asp Pro Gly Leu Pro  Gly Gln Pro
    1430                1435                1440

Gly Thr  Arg Gly Leu Asp Gly  Pro Pro Gly Pro Asp  Gly Leu Gln
    1445                1450                1455

Gly Pro  Pro Gly Pro Pro Gly  Thr Ser Ser Val Ala  His Gly Phe
    1460                1465                1470

Leu Ile  Thr Arg His Ser Gln  Thr Thr Asp Ala Pro  Gln Cys Pro
    1475                1480                1485

Gln Gly  Thr Leu Gln Val Tyr  Glu Gly Phe Ser Leu  Leu Tyr Val
    1490                1495                1500

Gln Gly  Asn Lys Arg Ala His  Gly Gln Asp Leu Gly  Thr Ala Gly
    1505                1510                1515

Ser Cys  Leu Arg Arg Phe Ser  Thr Met Pro Phe Met  Phe Cys Asn
    1520                1525                1530

Ile Asn  Asn Val Cys Asn Phe  Ala Ser Arg Asn Asp  Tyr Ser Tyr
    1535                1540                1545

Trp Leu  Ser Thr Pro Glu Pro  Met Pro Met Ser Met  Gln Pro Leu
    1550                1555                1560

Lys Gly  Gln Ser Ile Gln Pro  Phe Ile Ser Arg Cys  Ala Val Cys
    1565                1570                1575
```

```
Glu Ala  Pro Ala Val Val Ile  Ala Val His Ser Gln  Thr Ile Gln
    1580                1585                1590


Ile Pro  His Cys Pro Gln Gly  Trp Asp Ser Leu Trp  Ile Gly Tyr
    1595                1600                1605


Ser Phe  Met Met His Thr Ser  Ala Gly Ala Glu Gly  Ser Gly Gln
    1610                1615                1620


Ala Leu  Ala Ser Pro Gly Ser  Cys Leu Glu Glu Phe  Arg Ser Ala
    1625                1630                1635


Pro Phe  Ile Glu Cys His Gly  Arg Gly Thr Cys Asn  Tyr Tyr Ala
    1640                1645                1650


Asn Ser  Tyr Ser Phe Trp Leu  Ala Thr Val Asp Val  Ser Asp Met
    1655                1660                1665


Phe Ser  Lys Pro Gln Ser Glu  Thr Leu Lys Ala Gly  Asp Leu Arg
    1670                1675                1680


Thr Arg  Ile Ser Arg Cys Gln  Val Cys Met Lys Arg  Thr
    1685                1690                1695


<210>  97
<211>  1708
<212>  PRT
<213>  Homo sapiens


<220>
<221>  misc_feature
<222>  (1)..(1708)
<223>  human alpha6 chain of type IV collagen

<400>  97

Met Leu Ile Asn Lys Leu Trp Leu Leu Leu Val Thr Leu Cys Leu Thr
1               5                  10                  15
```

```
Glu Glu Leu Ala Ala Ala Gly Glu Lys Ser Tyr Gly Lys Pro Cys Gly
            20                  25                  30

Gly Gln Asp Cys Ser Gly Ser Cys Gln Cys Phe Pro Glu Lys Gly Ala
        35                  40                  45

Arg Gly Arg Pro Gly Pro Ile Gly Ile Gln Gly Pro Thr Gly Pro Gln
    50                  55                  60

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

Phe Pro Gly Leu Leu Gly Pro Tyr Gly Pro Lys Gly Asp Lys Gly Pro
                85                  90                  95

Met Gly Val Pro Gly Phe Leu Gly Ile Asn Gly Ile Pro Gly His Pro
            100                 105                 110

Gly Gln Pro Gly Pro Arg Gly Pro Pro Gly Leu Asp Gly Cys Asn Gly
        115                 120                 125

Thr Gln Gly Ala Val Gly Phe Pro Gly Pro Asp Gly Tyr Pro Gly Leu
    130                 135                 140

Leu Gly Pro Pro Gly Leu Pro Gly Gln Lys Gly Ser Lys Gly Asp Pro
145                 150                 155                 160

Val Leu Ala Pro Gly Ser Phe Lys Gly Met Lys Gly Asp Pro Gly Leu
                165                 170                 175

Pro Gly Leu Asp Gly Ile Thr Gly Pro Gln Gly Ala Pro Gly Phe Pro
            180                 185                 190

Gly Ala Val Gly Pro Ala Gly Pro Pro Gly Leu Gln Gly Pro Pro Gly
        195                 200                 205

Pro Pro Gly Pro Leu Gly Pro Asp Gly Asn Met Gly Leu Gly Phe Gln
```

```
    210                 215                 220

Gly Glu Lys Gly Val Lys Gly Asp Val Gly Leu Pro Gly Pro Ala Gly
225                 230                 235                 240

Pro Pro Pro Ser Thr Gly Glu Leu Glu Phe Met Gly Phe Pro Lys Gly
                245                 250                 255

Lys Lys Gly Ser Lys Gly Glu Pro Gly Pro Lys Gly Phe Pro Gly Ile
            260                 265                 270

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

Glu Lys Gly Glu Lys Gly Ile Pro Gly Leu Pro Gly Pro Arg Gly Pro
    290                 295                 300

Met Gly Ser Glu Gly Val Gln Gly Pro Pro Gly Gln Gln Gly Lys Lys
305                 310                 315                 320

Gly Thr Leu Gly Phe Pro Gly Leu Asn Gly Phe Gln Gly Ile Glu Gly
                325                 330                 335

Gln Lys Gly Asp Ile Gly Leu Pro Gly Pro Asp Val Phe Ile Asp Ile
            340                 345                 350

Asp Gly Ala Val Ile Ser Gly Asn Pro Gly Asp Pro Gly Val Pro Gly
        355                 360                 365

Leu Pro Gly Leu Lys Gly Asp Glu Gly Ile Gln Gly Leu Arg Gly Pro
    370                 375                 380

Ser Gly Val Pro Gly Leu Pro Ala Leu Ser Gly Val Pro Gly Ala Leu
385                 390                 395                 400

Gly Pro Gln Gly Phe Pro Gly Leu Lys Gly Asp Gln Gly Asn Pro Gly
                405                 410                 415
```

```
Arg Thr Thr Ile Gly Ala Ala Gly Leu Pro Gly Arg Asp Gly Leu Pro
            420                 425                 430

Gly Pro Pro Gly Pro Pro Gly Pro Pro Ser Pro Glu Phe Glu Thr Glu
        435                 440                 445

Thr Leu His Asn Lys Glu Ser Gly Phe Pro Gly Leu Arg Gly Glu Gln
    450                 455                 460

Gly Pro Lys Gly Asn Leu Gly Leu Lys Gly Ile Lys Gly Asp Ser Gly
465                 470                 475                 480

Phe Cys Ala Cys Asp Gly Gly Val Pro Asn Thr Gly Pro Pro Gly Glu
                485                 490                 495

Pro Gly Pro Pro Gly Pro Trp Gly Leu Ile Gly Leu Pro Gly Leu Lys
            500                 505                 510

Gly Ala Arg Gly Asp Arg Gly Ser Gly Gly Ala Gln Gly Pro Ala Gly
        515                 520                 525

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

Lys Gly Glu Pro Ile Leu Ser Thr Ile Gln Gly Met Pro Gly Asp Arg
545                 550                 555                 560

Gly Asp Ser Gly Ser Gln Gly Phe Arg Gly Val Ile Gly Glu Pro Gly
                565                 570                 575

Lys Asp Gly Val Pro Gly Leu Pro Gly Leu Pro Gly Leu Pro Gly Asp
            580                 585                 590

Gly Gly Gln Gly Phe Pro Gly Glu Lys Gly Leu Pro Gly Leu Pro Gly
        595                 600                 605

Glu Lys Gly His Pro Gly Pro Pro Gly Leu Pro Gly Asn Gly Leu Pro
```

```
    610                 615                 620

Gly Leu Pro Gly Pro Arg Gly Leu Pro Gly Asp Lys Gly Lys Asp Gly
625                 630                 635                 640

Leu Pro Gly Gln Gln Gly Leu Pro Gly Ser Lys Gly Asp Cys Cys Cys
                645                 650                 655

Arg Glu Val Gly Lys Gly Asp Leu Asp Thr Glu Arg Gly Ile Thr Leu
            660                 665                 670

Pro Cys Ile Ile Pro Gly Ser Tyr Gly Pro Ser Gly Phe Pro Gly Thr
        675                 680                 685

Pro Gly Phe Pro Gly Pro Lys Gly Ser Arg Gly Leu Pro Gly Thr Pro
    690                 695                 700

Gly Gln Pro Gly Ser Ser Gly Ser Lys Gly Glu Pro Gly Ser Pro Gly
705                 710                 715                 720

Leu Val His Leu Pro Glu Leu Pro Gly Phe Pro Gly Pro Arg Gly Glu
                725                 730                 735

Lys Gly Leu Pro Gly Phe Pro Gly Leu Pro Gly Lys Asp Gly Leu Pro
            740                 745                 750

Gly Met Ile Gly Ser Pro Gly Leu Pro Gly Ser Lys Gly Ala Thr Gly
        755                 760                 765

Asp Ile Phe Gly Ala Glu Asn Gly Ala Pro Gly Glu Gln Gly Leu Gln
    770                 775                 780

Gly Leu Thr Gly His Lys Gly Phe Leu Gly Asp Ser Gly Leu Pro Gly
785                 790                 795                 800

Leu Lys Gly Val His Gly Lys Pro Gly Leu Leu Gly Pro Lys Gly Glu
                805                 810                 815
```

```
Arg Gly Ser Pro Gly Thr Pro Gly Gln Val Gly Gln Pro Gly Thr Pro
            820                 825                 830

Gly Ser Ser Gly Pro Tyr Gly Ile Lys Gly Lys Ser Gly Leu Pro Gly
        835                 840                 845

Ala Pro Gly Phe Pro Gly Ile Ser Gly His Pro Gly Lys Lys Gly Thr
    850                 855                 860

Arg Gly Lys Lys Gly Pro Pro Gly Ser Ile Val Lys Lys Gly Leu Pro
865                 870                 875                 880

Gly Leu Lys Gly Leu Pro Gly Asn Pro Gly Leu Val Gly Leu Lys Gly
                885                 890                 895

Ser Pro Gly Ser Pro Gly Val Ala Gly Leu Pro Ala Leu Ser Gly Pro
            900                 905                 910

Lys Gly Glu Lys Gly Ser Val Gly Phe Val Gly Phe Pro Gly Ile Pro
        915                 920                 925

Gly Leu Pro Gly Ile Pro Gly Thr Arg Gly Leu Lys Gly Ile Pro Gly
    930                 935                 940

Ser Thr Gly Lys Met Gly Pro Ser Gly Arg Ala Gly Thr Pro Gly Glu
945                 950                 955                 960

Lys Gly Asp Arg Gly Asn Pro Gly Pro Val Gly Ile Pro Ser Pro Arg
                965                 970                 975

Arg Pro Met Ser Asn Leu Trp Leu Lys Gly Asp Lys Gly Ser Gln Gly
            980                 985                 990

Ser Ala Gly Ser Asn Gly Phe Pro  Gly Pro Arg Gly Asp  Lys Gly Glu
        995                 1000                1005

Ala Gly  Arg Pro Gly Pro Pro  Gly Leu Pro Gly Ala  Pro Gly Leu
```

```
    1010                1015                1020

Pro Gly  Ile Ile Lys Gly Val  Ser Gly Lys Pro Gly  Pro Pro Gly
    1025                1030                1035

Phe Met  Gly Ile Arg Gly Leu  Pro Gly Leu Lys Gly  Ser Ser Gly
    1040                1045                1050

Ile Thr  Gly Phe Pro Gly Met  Pro Gly Glu Ser Gly  Ser Gln Gly
    1055                1060                1065

Ile Arg  Gly Ser Pro Gly Leu  Pro Gly Ala Ser Gly  Leu Pro Gly
    1070                1075                1080

Leu Lys  Gly Asp Asn Gly Gln  Thr Val Glu Ile Ser  Gly Ser Pro
    1085                1090                1095

Gly Pro  Lys Gly Gln Pro Gly  Glu Ser Gly Phe Lys  Gly Thr Lys
    1100                1105                1110

Gly Arg  Asp Gly Leu Ile Gly  Asn Ile Gly Phe Pro  Gly Asn Lys
    1115                1120                1125

Gly Glu  Asp Gly Lys Val Gly  Val Ser Gly Asp Val  Gly Leu Pro
    1130                1135                1140

Gly Ala  Pro Gly Phe Pro Gly  Val Ala Gly Met Arg  Gly Glu Pro
    1145                1150                1155

Gly Leu  Pro Gly Ser Ser Gly  His Gln Gly Ala Ile  Gly Pro Leu
    1160                1165                1170

Gly Ser  Pro Gly Leu Ile Gly  Pro Lys Gly Phe Pro  Gly Phe Pro
    1175                1180                1185

Gly Leu  His Gly Leu Asn Gly  Leu Pro Gly Thr Lys  Gly Thr His
    1190                1195                1200
```

```
Gly Thr  Pro Gly Pro Ser Ile  Thr Gly Val Pro Gly  Pro Ala Gly
    1205                1210                1215

Leu Pro  Gly Pro Lys Gly Glu  Lys Gly Tyr Pro Gly  Ile Gly Ile
    1220                1225                1230

Gly Ala  Pro Gly Lys Pro Gly  Leu Arg Gly Gln Lys  Gly Asp Arg
    1235                1240                1245

Gly Phe  Pro Gly Leu Gln Gly  Pro Ala Gly Leu Pro  Gly Ala Pro
    1250                1255                1260

Gly Ile  Ser Leu Pro Ser Leu  Ile Ala Gly Gln Pro  Gly Asp Pro
    1265                1270                1275

Gly Arg  Pro Gly Leu Asp Gly  Glu Arg Gly Arg Pro  Gly Pro Ala
    1280                1285                1290

Gly Pro  Pro Gly Pro Pro Gly  Pro Ser Ser Asn Gln  Gly Asp Thr
    1295                1300                1305

Gly Asp  Pro Gly Phe Pro Gly  Ile Pro Gly Pro Lys  Gly Pro Lys
    1310                1315                1320

Gly Asp  Gln Gly Ile Pro Gly  Phe Ser Gly Leu Pro  Gly Glu Leu
    1325                1330                1335

Gly Leu  Lys Gly Met Arg Gly  Glu Pro Gly Phe Met  Gly Thr Pro
    1340                1345                1350

Gly Lys  Val Gly Pro Pro Gly  Asp Pro Gly Phe Pro  Gly Met Lys
    1355                1360                1365

Gly Lys  Ala Gly Pro Arg Gly  Ser Ser Gly Leu Gln  Gly Asp Pro
    1370                1375                1380

Gly Gln  Thr Pro Thr Ala Glu  Ala Val Gln Val Pro  Pro Gly Pro
```

```
    1385                1390                1395

Leu Gly  Leu Pro Gly Ile Asp  Gly Ile Pro Gly Leu  Thr Gly Asp
    1400                1405                1410

Pro Gly  Ala Gln Gly Pro Val  Gly Leu Gln Gly Ser  Lys Gly Leu
    1415                1420                1425

Pro Gly  Ile Pro Gly Lys Asp  Gly Pro Ser Gly Leu  Pro Gly Pro
    1430                1435                1440

Pro Gly  Ala Leu Gly Asp Pro  Gly Leu Pro Gly Leu  Gln Gly Pro
    1445                1450                1455

Pro Gly  Phe Glu Gly Ala Pro  Gly Gln Gln Gly Pro  Phe Gly Met
    1460                1465                1470

Pro Gly  Met Pro Gly Gln Ser  Met Arg Val Gly Tyr  Thr Leu Val
    1475                1480                1485

Lys His  Ser Gln Ser Glu Gln  Val Pro Pro Cys Pro  Ile Gly Met
    1490                1495                1500

Ser Gln  Leu Trp Val Gly Tyr  Ser Leu Leu Phe Val  Glu Gly Gln
    1505                1510                1515

Glu Lys  Ala His Asn Gln Asp  Leu Gly Phe Ala Gly  Ser Cys Leu
    1520                1525                1530

Pro Arg  Phe Ser Thr Met Pro  Phe Ile Tyr Cys Asn  Ile Asn Glu
    1535                1540                1545

Val Cys  His Tyr Ala Arg Arg  Asn Asp Lys Ser Tyr  Trp Leu Ser
    1550                1555                1560

Thr Thr  Ala Pro Ile Pro Met  Met Pro Val Ser Gln  Thr Gln Ile
    1565                1570                1575
```

```
Pro Gln  Tyr Ile Ser Arg Cys  Ser Val Cys Glu Ala  Pro Ser Gln
    1580                1585                1590


Ala Ile  Ala Val His Ser Gln  Asp Ile Thr Ile Pro  Gln Cys Pro
    1595                1600                1605


Leu Gly  Trp Arg Ser Leu Trp  Ile Gly Tyr Ser Phe  Leu Met His
    1610                1615                1620


Thr Ala  Ala Gly Ala Glu Gly  Gly Gly Gln Ser Leu  Val Ser Pro
    1625                1630                1635


Gly Ser  Cys Leu Glu Asp Phe  Arg Ala Thr Pro Phe  Ile Glu Cys
    1640                1645                1650


Ser Gly  Ala Arg Gly Thr Cys  His Tyr Phe Ala Asn  Lys Tyr Ser
    1655                1660                1665


Phe Trp  Leu Thr Thr Val Glu  Glu Arg Gln Gln Phe  Gly Glu Leu
    1670                1675                1680


Pro Val  Ser Glu Thr Leu Lys  Ala Gly Gln Leu His  Thr Arg Val
    1685                1690                1695


Ser Arg  Cys Gln Val Cys Met  Lys Ser Leu
    1700                1705


<210>  98
<211>  266
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: LAIR-1

<400>  98

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

```
Val Ile Pro Leu Gly Ser His Val Thr Phe Val Cys Arg Gly Pro Val
            20                  25                  30

Gly Val Gln Thr Phe Arg Leu Glu Arg Glu Ser Arg Ser Thr Tyr Asn
        35                  40                  45

Asp Thr Glu Asp Val Ser Gln Ala Ser Pro Ser Glu Ser Glu Ala Arg
    50                  55                  60

Phe Arg Ile Asp Ser Val Ser Glu Gly Asn Ala Gly Pro Tyr Arg Cys
65                  70                  75                  80

Ile Tyr Tyr Lys Pro Pro Lys Trp Ser Glu Gln Ser Asp Tyr Leu Glu
                85                  90                  95

Leu Leu Val Lys Glu Thr Ser Gly Gly Pro Asp Ser Pro Asp Thr Glu
            100                 105                 110

Pro Gly Ser Ser Ala Gly Pro Thr Gln Arg Pro Ser Asp Asn Ser His
        115                 120                 125

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

Ile Leu Ile Gly Val Ser Val Val Phe Leu Phe Cys Leu Leu Leu Leu
145                 150                 155                 160

Val Leu Phe Cys Leu His Arg Gln Asn Gln Ile Lys Gln Gly Pro Pro
                165                 170                 175

Arg Ser Lys Asp Glu Glu Gln Lys Pro Gln Gln Arg Pro Asp Leu Ala
            180                 185                 190

Val Asp Val Leu Glu Arg Thr Ala Asp Lys Ala Thr Val Asn Gly Leu
        195                 200                 205

Pro Glu Lys Asp Arg Glu Thr Asp Thr Ser Ala Leu Ala Ala Gly Ser
```

210 215 220

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

Arg Thr Ala Arg Ala Val Ser Pro Gln Ser Thr Lys Pro Met Ala Glu
245 250 255

Ser Ile Thr Tyr Ala Ala Val Ala Arg His
260 265

<210> 99
<211> 131
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR-2

<400> 99

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

Val Ile Ser Pro Gly Ser His Val Thr Phe Met Cys Arg Gly Pro Val
20 25 30

Gly Val Gln Thr Phe Arg Leu Glu Arg Glu Asp Arg Ala Lys Tyr Lys
35 40 45

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

Phe His Ile Asp Ser Val Ser Glu Gly Asn Ala Gly Leu Tyr Arg Cys
65 70 75 80

Leu Tyr Tyr Lys Pro Pro Gly Trp Ser Glu His Ser Asp Phe Leu Glu
85 90 95

Leu Leu Val Lys Glu Ser Ser Gly Gly Pro Asp Ser Pro Asp Thr Glu

```
            100                 105                 110

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

Asp Ala Pro
    130
```

<210> 100
<211> 410
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Glycoprotein IV (CD36 extracellular domain)

<400> 100

```
Gly Asp Leu Leu Ile Gln Lys Thr Ile Lys Lys Gln Val Val Leu Glu
1               5                   10                  15

Glu Gly Thr Ile Ala Phe Lys Asn Trp Val Lys Thr Gly Thr Glu Val
            20                  25                  30

Tyr Arg Gln Phe Trp Ile Phe Asp Val Gln Asn Pro Gln Glu Val Met
        35                  40                  45

Met Asn Ser Ser Asn Ile Gln Val Lys Gln Arg Gly Pro Tyr Thr Tyr
    50                  55                  60

Arg Val Arg Phe Leu Ala Lys Glu Asn Val Thr Gln Asp Ala Glu Asp
65                  70                  75                  80

Asn Thr Val Ser Phe Leu Gln Pro Asn Gly Ala Ile Phe Glu Pro Ser
                85                  90                  95

Leu Ser Val Gly Thr Glu Ala Asp Asn Phe Thr Val Leu Asn Leu Ala
            100                 105                 110

Val Ala Ala Ala Ser His Ile Tyr Gln Asn Gln Phe Val Gln Met Ile
```

```
        115                 120                 125

Leu Asn Ser Leu Ile Asn Lys Ser Lys Ser Ser Met Phe Gln Val Arg
    130                 135                 140

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

Val Pro Tyr Pro Val Thr Thr Thr Val Gly Leu Phe Tyr Pro Tyr Asn
                165                 170                 175

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

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

Tyr Trp Glu Ser His Cys Asp Met Ile Asn Gly Thr Asp Ala Ala Ser
    210                 215                 220

Phe Pro Pro Phe Val Glu Lys Ser Gln Val Leu Gln Phe Phe Ser Ser
225                 230                 235                 240

Asp Ile Cys Arg Ser Ile Tyr Ala Val Phe Glu Ser Asp Val Asn Leu
                245                 250                 255

Lys Gly Ile Pro Val Tyr Arg Phe Val Leu Pro Ser Lys Ala Phe Ala
            260                 265                 270

Ser Pro Val Glu Asn Pro Asp Asn Tyr Cys Phe Cys Thr Glu Lys Ile
        275                 280                 285

Ile Ser Lys Asn Cys Thr Ser Tyr Gly Val Leu Asp Ile Ser Lys Cys
    290                 295                 300

Lys Glu Gly Arg Pro Val Tyr Ile Ser Leu Pro His Phe Leu Tyr Ala
305                 310                 315                 320
```

Ser Pro Asp Val Ser Glu Pro Ile Asp Gly Leu Asn Pro Asn Glu Glu
325 330 335

Glu His Arg Thr Tyr Leu Asp Ile Glu Pro Ile Thr Gly Phe Thr Leu
340 345 350

Gln Phe Ala Lys Arg Leu Gln Val Asn Leu Leu Val Lys Pro Ser Glu
355 360 365

Lys Ile Gln Val Leu Lys Asn Leu Lys Arg Asn Tyr Ile Val Pro Ile
370 375 380

Leu Trp Leu Asn Glu Thr Gly Thr Ile Gly Asp Glu Lys Ala Asn Met
385 390 395 400

Phe Arg Ser Gln Val Thr Gly Lys Ile Asn
405 410

<210> 101
<211> 1219
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Nidogen

<400> 101

Leu Ser Arg Gln Glu Leu Phe Pro Phe Gly Pro Gly Gln Gly Asp Leu
1 5 10 15

Glu Leu Glu Asp Gly Asp Asp Phe Val Ser Pro Ala Leu Glu Leu Ser
20 25 30

Gly Ala Leu Arg Phe Tyr Asp Arg Ser Asp Ile Asp Ala Val Tyr Val
35 40 45

Thr Thr Asn Gly Ile Ile Ala Thr Ser Glu Pro Pro Ala Lys Glu Ser
50 55 60

```
His Pro Gly Leu Phe Pro Pro Thr Phe Gly Ala Val Ala Pro Phe Leu
65                  70                  75                  80

Ala Asp Leu Asp Thr Thr Asp Gly Leu Gly Lys Val Tyr Tyr Arg Glu
                85                  90                  95

Asp Leu Ser Pro Ser Ile Thr Gln Arg Ala Ala Glu Cys Val His Arg
            100                 105                 110

Gly Phe Pro Glu Ile Ser Phe Gln Pro Ser Ser Ala Val Val Val Thr
        115                 120                 125

Trp Glu Ser Val Ala Pro Tyr Gln Gly Pro Ser Arg Asp Pro Asp Gln
    130                 135                 140

Lys Gly Lys Arg Asn Thr Phe Gln Ala Val Leu Ala Ser Ser Asp Ser
145                 150                 155                 160

Ser Ser Tyr Ala Ile Phe Leu Tyr Pro Glu Asp Gly Leu Gln Phe His
                165                 170                 175

Thr Thr Phe Ser Lys Lys Glu Asn Asn Gln Val Pro Ala Val Val Ala
            180                 185                 190

Phe Ser Gln Gly Ser Val Gly Phe Leu Trp Lys Ser Asn Gly Ala Tyr
        195                 200                 205

Asn Ile Phe Ala Asn Asp Arg Glu Ser Val Glu Asn Leu Ala Lys Ser
    210                 215                 220

Ser Asn Ser Gly Gln Gln Gly Val Trp Val Phe Glu Ile Gly Ser Pro
225                 230                 235                 240

Ala Thr Thr Asn Gly Val Val Pro Ala Asp Val Ile Leu Gly Thr Glu
                245                 250                 255

Asp Gly Ala Glu Tyr Asp Asp Glu Asp Glu Asp Tyr Asp Leu Ala Thr
```

```
            260                 265                 270

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

Ala Leu Arg Arg Gly Gly Ala Asp Thr Tyr Ser Val Pro Ser Val Leu
    290                 295                 300

Ser Pro Arg Arg Ala Ala Thr Glu Arg Pro Leu Gly Pro Pro Thr Glu
305                 310                 315                 320

Arg Thr Arg Ser Phe Gln Leu Ala Val Glu Thr Phe His Gln Gln His
                325                 330                 335

Pro Gln Val Ile Asp Val Asp Glu Val Glu Glu Thr Gly Val Val Phe
            340                 345                 350

Ser Tyr Asn Thr Asp Ser Arg Gln Thr Cys Ala Asn Asn Arg His Gln
        355                 360                 365

Cys Ser Val His Ala Glu Cys Arg Asp Tyr Ala Thr Gly Phe Cys Cys
    370                 375                 380

Ser Cys Val Ala Gly Tyr Thr Gly Asn Gly Arg Gln Cys Val Ala Glu
385                 390                 395                 400

Gly Ser Pro Gln Arg Val Asn Gly Lys Val Lys Gly Arg Ile Phe Val
                405                 410                 415

Gly Ser Ser Gln Val Pro Ile Val Phe Glu Asn Thr Asp Leu His Ser
            420                 425                 430

Tyr Val Val Met Asn His Gly Arg Ser Tyr Thr Ala Ile Ser Thr Ile
        435                 440                 445

Pro Glu Thr Val Gly Tyr Ser Leu Leu Pro Leu Ala Pro Val Gly Gly
    450                 455                 460
```

```
Ile Ile Gly Trp Met Phe Ala Val Glu Gln Asp Gly Phe Lys Asn Gly
465                 470                 475                 480

Phe Ser Ile Thr Gly Gly Glu Phe Thr Arg Gln Ala Glu Val Thr Phe
                485                 490                 495

Val Gly His Pro Gly Asn Leu Val Ile Lys Gln Arg Phe Ser Gly Ile
            500                 505                 510

Asp Glu His Gly His Leu Thr Ile Asp Thr Glu Leu Glu Gly Arg Val
        515                 520                 525

Pro Gln Ile Pro Phe Gly Ser Ser Val His Ile Glu Pro Tyr Thr Glu
    530                 535                 540

Leu Tyr His Tyr Ser Thr Ser Val Ile Thr Ser Ser Ser Thr Arg Glu
545                 550                 555                 560

Tyr Thr Val Thr Glu Pro Glu Arg Asp Gly Ala Ser Pro Ser Arg Ile
                565                 570                 575

Tyr Thr Tyr Gln Trp Arg Gln Thr Ile Thr Phe Gln Glu Cys Val His
            580                 585                 590

Asp Asp Ser Arg Pro Ala Leu Pro Ser Thr Gln Gln Leu Ser Val Asp
        595                 600                 605

Ser Val Phe Val Leu Tyr Asn Gln Glu Glu Lys Ile Leu Arg Tyr Ala
    610                 615                 620

Leu Ser Asn Ser Ile Gly Pro Val Arg Glu Gly Ser Pro Asp Ala Leu
625                 630                 635                 640

Gln Asn Pro Cys Tyr Ile Gly Thr His Gly Cys Asp Thr Asn Ala Ala
                645                 650                 655

Cys Arg Pro Gly Pro Arg Thr Gln Phe Thr Cys Glu Cys Ser Ile Gly
```

```
            660                 665                 670

Phe Arg Gly Asp Gly Arg Thr Cys Tyr Asp Ile Asp Glu Cys Ser Glu
        675                 680                 685

Gln Pro Ser Val Cys Gly Ser His Thr Ile Cys Asn Asn His Pro Gly
    690                 695                 700

Thr Phe Arg Cys Glu Cys Val Glu Gly Tyr Gln Phe Ser Asp Glu Gly
705                 710                 715                 720

Thr Cys Val Ala Val Val Asp Gln Arg Pro Ile Asn Tyr Cys Glu Thr
                725                 730                 735

Gly Leu His Asn Cys Asp Ile Pro Gln Arg Ala Gln Cys Ile Tyr Thr
            740                 745                 750

Gly Gly Ser Ser Tyr Thr Cys Ser Cys Leu Pro Gly Phe Ser Gly Asp
        755                 760                 765

Gly Gln Ala Cys Gln Asp Val Asp Glu Cys Gln Pro Ser Arg Cys His
    770                 775                 780

Pro Asp Ala Phe Cys Tyr Asn Thr Pro Gly Ser Phe Thr Cys Gln Cys
785                 790                 795                 800

Lys Pro Gly Tyr Gln Gly Asp Gly Phe Arg Cys Val Pro Gly Glu Val
                805                 810                 815

Glu Lys Thr Arg Cys Gln His Glu Arg Glu His Ile Leu Gly Ala Ala
            820                 825                 830

Gly Ala Thr Asp Pro Gln Arg Pro Ile Pro Pro Gly Leu Phe Val Pro
        835                 840                 845

Glu Cys Asp Ala His Gly His Tyr Ala Pro Thr Gln Cys His Gly Ser
    850                 855                 860
```

```
Thr Gly Tyr Cys Trp Cys Val Asp Arg Asp Gly Arg Glu Val Glu Gly
865                 870                 875                 880


Thr Arg Thr Arg Pro Gly Met Thr Pro Pro Cys Leu Ser Thr Val Ala
                885                 890                 895


Pro Pro Ile His Gln Gly Pro Ala Val Pro Thr Ala Val Ile Pro Leu
            900                 905                 910


Pro Pro Gly Thr His Leu Leu Phe Ala Gln Thr Gly Lys Ile Glu Arg
        915                 920                 925


Leu Pro Leu Glu Gly Asn Thr Met Arg Lys Thr Glu Ala Lys Ala Phe
    930                 935                 940


Leu His Val Pro Ala Lys Val Ile Ile Gly Leu Ala Phe Asp Cys Val
945                 950                 955                 960


Asp Lys Met Val Tyr Trp Thr Asp Ile Thr Glu Pro Ser Ile Gly Arg
                965                 970                 975


Ala Ser Leu His Gly Gly Glu Pro Thr Thr Ile Ile Arg Gln Asp Leu
            980                 985                 990


Gly Ser Pro Glu Gly Ile Ala Val  Asp His Leu Gly Arg  Asn Ile Phe
        995                 1000                1005


Trp Thr  Asp Ser Asn Leu Asp  Arg Ile Glu Val Ala  Lys Leu Asp
    1010                1015                1020


Gly Thr  Gln Arg Arg Val Leu  Phe Glu Thr Asp Leu  Val Asn Pro
    1025                1030                1035


Arg Gly  Ile Val Thr Asp Ser  Val Arg Gly Asn Leu  Tyr Trp Thr
    1040                1045                1050


Asp Trp  Asn Arg Asp Asn Pro  Lys Ile Glu Thr Ser  Tyr Met Asp
```

```
    1055                1060                1065

Gly Thr  Asn Arg Arg Ile Leu  Val Gln Asp Asp Leu  Gly Leu Pro
    1070                1075                1080

Asn Gly  Leu Thr Phe Asp Ala  Phe Ser Ser Gln Leu  Cys Trp Val
    1085                1090                1095

Asp Ala  Gly Thr Asn Arg Ala  Glu Cys Leu Asn Pro  Ser Gln Pro
    1100                1105                1110

Ser Arg  Arg Lys Ala Leu Glu  Gly Leu Gln Tyr Pro  Phe Ala Val
    1115                1120                1125

Thr Ser  Tyr Gly Lys Asn Leu  Tyr Phe Thr Asp Trp  Lys Met Asn
    1130                1135                1140

Ser Val  Val Ala Leu Asp Leu  Ala Ile Ser Lys Glu  Thr Asp Ala
    1145                1150                1155

Phe Gln  Pro His Lys Gln Thr  Arg Leu Tyr Gly Ile  Thr Thr Ala
    1160                1165                1170

Leu Ser  Gln Cys Pro Gln Gly  His Asn Tyr Cys Ser  Val Asn Asn
    1175                1180                1185

Gly Gly  Cys Thr His Leu Cys  Leu Ala Thr Pro Gly  Ser Arg Thr
    1190                1195                1200

Cys Arg  Cys Pro Asp Asn Thr  Leu Gly Val Asp Cys  Ile Glu Gln
    1205                1210                1215

Lys
```

<210> 102
<211> 4370
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: Perlecan

<400> 102

Val Thr His Gly Leu Arg Ala Tyr Asp Gly Leu Ser Leu Pro Glu Asp
1 5 10 15

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

Ser Asp Asp Glu Asp Met Leu Ala Asp Ser Ile Ser Gly Asp Asp Leu
35 40 45

Gly Ser Gly Asp Leu Gly Ser Gly Asp Phe Gln Met Val Tyr Phe Arg
50 55 60

Ala Leu Val Asn Phe Thr Arg Ser Ile Glu Tyr Ser Pro Gln Leu Glu
65 70 75 80

Asp Ala Gly Ser Arg Glu Phe Arg Glu Val Ser Glu Ala Val Val Asp
85 90 95

Thr Leu Glu Ser Glu Tyr Leu Lys Ile Pro Gly Asp Gln Val Val Ser
100 105 110

Val Val Phe Ile Lys Glu Leu Asp Gly Trp Val Phe Val Glu Leu Asp
115 120 125

Val Gly Ser Glu Gly Asn Ala Asp Gly Ala Gln Ile Gln Glu Met Leu
130 135 140

Leu Arg Val Ile Ser Ser Gly Ser Val Ala Ser Tyr Val Thr Ser Pro
145 150 155 160

Gln Gly Phe Gln Phe Arg Arg Leu Gly Thr Val Pro Gln Phe Pro Arg
165 170 175

```
Ala Cys Thr Glu Ala Glu Phe Ala Cys His Ser Tyr Asn Glu Cys Val
            180                 185                 190

Ala Leu Glu Tyr Arg Cys Asp Arg Arg Pro Asp Cys Arg Asp Met Ser
        195                 200                 205

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

Ser Leu Leu Val Glu Thr Thr Ser Leu Pro Pro Arg Pro Glu Thr Thr
225                 230                 235                 240

Ile Met Arg Gln Pro Pro Val Thr His Ala Pro Gln Pro Leu Leu Pro
                245                 250                 255

Gly Ser Val Arg Pro Leu Pro Cys Gly Pro Gln Glu Ala Ala Cys Arg
            260                 265                 270

Asn Gly His Cys Ile Pro Arg Asp Tyr Leu Cys Asp Gly Gln Glu Asp
        275                 280                 285

Cys Glu Asp Gly Ser Asp Glu Leu Asp Cys Gly Pro Pro Pro Pro Cys
    290                 295                 300

Glu Pro Asn Glu Phe Pro Cys Gly Asn Gly His Cys Ala Leu Lys Leu
305                 310                 315                 320

Trp Arg Cys Asp Gly Asp Phe Asp Cys Glu Asp Arg Thr Asp Glu Ala
                325                 330                 335

Asn Cys Pro Thr Lys Arg Pro Glu Glu Val Cys Gly Pro Thr Gln Phe
            340                 345                 350

Arg Cys Val Ser Thr Asn Met Cys Ile Pro Ala Ser Phe His Cys Asp
        355                 360                 365

Glu Glu Ser Asp Cys Pro Asp Arg Ser Asp Glu Phe Gly Cys Met Pro
```

```
    370                 375                 380

Pro Gln Val Val Thr Pro Pro Arg Glu Ser Ile Gln Ala Ser Arg Gly
385                 390                 395                 400

Gln Thr Val Thr Phe Thr Cys Val Ala Ile Gly Val Pro Thr Pro Ile
                405                 410                 415

Ile Asn Trp Arg Leu Asn Trp Gly His Ile Pro Ser His Pro Arg Val
            420                 425                 430

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

Lys Glu Ser Asp Gln Gly Ala Tyr Thr Cys Glu Ala Met Asn Ala Arg
    450                 455                 460

Gly Met Val Phe Gly Ile Pro Asp Gly Val Leu Glu Leu Val Pro Gln
465                 470                 475                 480

Arg Gly Pro Cys Pro Asp Gly His Phe Tyr Leu Glu His Ser Ala Ala
                485                 490                 495

Cys Leu Pro Cys Phe Cys Phe Gly Ile Thr Ser Val Cys Gln Ser Thr
            500                 505                 510

Arg Arg Phe Arg Asp Gln Ile Arg Leu Arg Phe Asp Gln Pro Asp Asp
        515                 520                 525

Phe Lys Gly Val Asn Val Thr Met Pro Ala Gln Pro Gly Thr Pro Pro
    530                 535                 540

Leu Ser Ser Thr Gln Leu Gln Ile Asp Pro Ser Leu His Glu Phe Gln
545                 550                 555                 560

Leu Val Asp Leu Ser Arg Arg Phe Leu Val His Asp Ser Phe Trp Ala
                565                 570                 575
```

```
Leu Pro Glu Gln Phe Leu Gly Asn Lys Val Asp Ser Tyr Gly Gly Ser
            580                 585                 590

Leu Arg Tyr Asn Val Arg Tyr Glu Leu Ala Arg Gly Met Leu Glu Pro
        595                 600                 605

Val Gln Arg Pro Asp Val Val Leu Met Gly Ala Gly Tyr Arg Leu Leu
    610                 615                 620

Ser Arg Gly His Thr Pro Thr Gln Pro Gly Ala Leu Asn Gln Arg Gln
625                 630                 635                 640

Val Gln Phe Ser Glu Glu His Trp Val His Glu Ser Gly Arg Pro Val
                645                 650                 655

Gln Arg Ala Glu Leu Leu Gln Val Leu Gln Ser Leu Glu Ala Val Leu
            660                 665                 670

Ile Gln Thr Val Tyr Asn Thr Lys Met Ala Ser Val Gly Leu Ser Asp
        675                 680                 685

Ile Ala Met Asp Thr Thr Val Thr His Ala Thr Ser His Gly Arg Ala
    690                 695                 700

His Ser Val Glu Glu Cys Arg Cys Pro Ile Gly Tyr Ser Gly Leu Ser
705                 710                 715                 720

Cys Glu Ser Cys Asp Ala His Phe Thr Arg Val Pro Gly Gly Pro Tyr
                725                 730                 735

Leu Gly Thr Cys Ser Gly Cys Asn Cys Asn Gly His Ala Ser Ser Cys
            740                 745                 750

Asp Pro Val Tyr Gly His Cys Leu Asn Cys Gln His Asn Thr Glu Gly
        755                 760                 765

Pro Gln Cys Asn Lys Cys Lys Ala Gly Phe Phe Gly Asp Ala Met Lys
```

```
    770                 775                 780

Ala Thr Ala Thr Ser Cys Arg Pro Cys Pro Cys Pro Tyr Ile Asp Ala
785                 790                 795                 800

Ser Arg Arg Phe Ser Asp Thr Cys Phe Leu Asp Thr Asp Gly Gln Ala
                805                 810                 815

Thr Cys Asp Ala Cys Ala Pro Gly Tyr Thr Gly Arg Arg Cys Glu Ser
            820                 825                 830

Cys Ala Pro Gly Tyr Glu Gly Asn Pro Ile Gln Pro Gly Gly Lys Cys
        835                 840                 845

Arg Pro Val Asn Gln Glu Ile Val Arg Cys Asp Glu Arg Gly Ser Met
    850                 855                 860

Gly Thr Ser Gly Glu Ala Cys Arg Cys Lys Asn Asn Val Val Gly Arg
865                 870                 875                 880

Leu Cys Asn Glu Cys Ala Asp Gly Ser Phe His Leu Ser Thr Arg Asn
                885                 890                 895

Pro Asp Gly Cys Leu Lys Cys Phe Cys Met Gly Val Ser Arg His Cys
            900                 905                 910

Thr Ser Ser Ser Trp Ser Arg Ala Gln Leu His Gly Ala Ser Glu Glu
        915                 920                 925

Pro Gly His Phe Ser Leu Thr Asn Ala Ala Ser Thr His Thr Thr Asn
    930                 935                 940

Glu Gly Ile Phe Ser Pro Thr Pro Gly Glu Leu Gly Phe Ser Ser Phe
945                 950                 955                 960

His Arg Leu Leu Ser Gly Pro Tyr Phe Trp Ser Leu Pro Ser Arg Phe
                965                 970                 975
```

```
Leu Gly Asp Lys Val Thr Ser Tyr Gly Gly Glu Leu Arg Phe Thr Val
            980                 985                 990


Thr Gln Arg Ser Gln Pro Gly Ser  Thr Pro Leu His Gly  Gln Pro Leu
        995                 1000                1005


Val Val  Leu Gln Gly Asn Asn  Ile Ile Leu Glu His  His Val Ala
    1010                1015                1020


Gln Glu  Pro Ser Pro Gly Gln  Pro Ser Thr Phe Ile  Val Pro Phe
    1025                1030                1035


Arg Glu  Gln Ala Trp Gln Arg  Pro Asp Gly Gln Pro  Ala Thr Arg
    1040                1045                1050


Glu His  Leu Leu Met Ala Leu  Ala Gly Ile Asp Thr  Leu Leu Ile
    1055                1060                1065


Arg Ala  Ser Tyr Ala Gln Gln  Pro Ala Glu Ser Arg  Val Ser Gly
    1070                1075                1080


Ile Ser  Met Asp Val Ala Val  Pro Glu Glu Thr Gly  Gln Asp Pro
    1085                1090                1095


Ala Leu  Glu Val Glu Gln Cys  Ser Cys Pro Pro Gly  Tyr Arg Gly
    1100                1105                1110


Pro Ser  Cys Gln Asp Cys Asp  Thr Gly Tyr Thr Arg  Thr Pro Ser
    1115                1120                1125


Gly Leu  Tyr Leu Gly Thr Cys  Glu Arg Cys Ser Cys  His Gly His
    1130                1135                1140


Ser Glu  Ala Cys Glu Pro Glu  Thr Gly Ala Cys Gln  Gly Cys Gln
    1145                1150                1155


His His  Thr Glu Gly Pro Arg  Cys Glu Gln Cys Gln  Pro Gly Tyr
```

```
    1160                1165                1170

Tyr Gly  Asp Ala Gln Arg Gly  Thr Pro Gln Asp Cys  Gln Leu Cys
    1175                1180                1185

Pro Cys  Tyr Gly Asp Pro Ala  Ala Gly Gln Ala Ala  His Thr Cys
    1190                1195                1200

Phe Leu  Asp Thr Asp Gly His  Pro Thr Cys Asp Ala  Cys Ser Pro
    1205                1210                1215

Gly His  Ser Gly Arg His Cys  Glu Arg Cys Ala Pro  Gly Tyr Tyr
    1220                1225                1230

Gly Asn  Pro Ser Gln Gly Gln  Pro Cys Gln Arg Asp  Ser Gln Val
    1235                1240                1245

Pro Gly  Pro Ile Gly Cys Asn  Cys Asp Pro Gln Gly  Ser Val Ser
    1250                1255                1260

Ser Gln  Cys Asp Ala Ala Gly  Gln Cys Gln Cys Lys  Ala Gln Val
    1265                1270                1275

Glu Gly  Leu Thr Cys Ser His  Cys Arg Pro His His  Phe His Leu
    1280                1285                1290

Ser Ala  Ser Asn Pro Asp Gly  Cys Leu Pro Cys Phe  Cys Met Gly
    1295                1300                1305

Ile Thr  Gln Gln Cys Ala Ser  Ser Ala Tyr Thr Arg  His Leu Ile
    1310                1315                1320

Ser Thr  His Phe Ala Pro Gly  Asp Phe Gln Gly Phe  Ala Leu Val
    1325                1330                1335

Asn Pro  Gln Arg Asn Ser Arg  Leu Thr Gly Glu Phe  Thr Val Glu
    1340                1345                1350
```

```
Pro Val  Pro Glu Gly Ala Gln  Leu Ser Phe Gly Asn  Phe Ala Gln
    1355                1360                1365

Leu Gly  His Glu Ser Phe Tyr  Trp Gln Leu Pro Glu  Thr Tyr Gln
    1370                1375                1380

Gly Asp  Lys Val Ala Ala Tyr  Gly Gly Lys Leu Arg  Tyr Thr Leu
    1385                1390                1395

Ser Tyr  Thr Ala Gly Pro Gln  Gly Ser Pro Leu Ser  Asp Pro Asp
    1400                1405                1410

Val Gln  Ile Thr Gly Asn Asn  Ile Met Leu Val Ala  Ser Gln Pro
    1415                1420                1425

Ala Leu  Gln Gly Pro Glu Arg  Arg Ser Tyr Glu Ile  Met Phe Arg
    1430                1435                1440

Glu Glu  Phe Trp Arg Arg Pro  Asp Gly Gln Pro Ala  Thr Arg Glu
    1445                1450                1455

His Leu  Leu Met Ala Leu Ala  Asp Leu Asp Glu Leu  Leu Ile Arg
    1460                1465                1470

Ala Thr  Phe Ser Ser Val Pro  Leu Ala Ala Ser Ile  Ser Ala Val
    1475                1480                1485

Ser Leu  Glu Val Ala Gln Pro  Gly Pro Ser Asn Arg  Pro Arg Ala
    1490                1495                1500

Leu Glu  Val Glu Glu Cys Arg  Cys Pro Pro Gly Tyr  Ile Gly Leu
    1505                1510                1515

Ser Cys  Gln Asp Cys Ala Pro  Gly Tyr Thr Arg Thr  Gly Ser Gly
    1520                1525                1530

Leu Tyr  Leu Gly His Cys Glu  Leu Cys Glu Cys Asn  Gly His Ser
```

```
    1535                1540                1545

Asp Leu  Cys His Pro Glu Thr  Gly Ala Cys Ser Gln  Cys Gln His
    1550                1555                1560

Asn Ala  Ala Gly Glu Phe Cys  Glu Leu Cys Ala Pro  Gly Tyr Tyr
    1565                1570                1575

Gly Asp  Ala Thr Ala Gly Thr  Pro Glu Asp Cys Gln  Pro Cys Ala
    1580                1585                1590

Cys Pro  Leu Thr Asn Pro Glu  Asn Met Phe Ser Arg  Thr Cys Glu
    1595                1600                1605

Ser Leu  Gly Ala Gly Gly Tyr  Arg Cys Thr Ala Cys  Glu Pro Gly
    1610                1615                1620

Tyr Thr  Gly Gln Tyr Cys Glu  Gln Cys Gly Pro Gly  Tyr Val Gly
    1625                1630                1635

Asn Pro  Ser Val Gln Gly Gly  Gln Cys Leu Pro Glu  Thr Asn Gln
    1640                1645                1650

Ala Pro  Leu Val Val Glu Val  His Pro Ala Arg Ser  Ile Val Pro
    1655                1660                1665

Gln Gly  Gly Ser His Ser Leu  Arg Cys Gln Val Ser  Gly Ser Pro
    1670                1675                1680

Pro His  Tyr Phe Tyr Trp Ser  Arg Glu Asp Gly Arg  Pro Val Pro
    1685                1690                1695

Ser Gly  Thr Gln Gln Arg His  Gln Gly Ser Glu Leu  His Phe Pro
    1700                1705                1710

Ser Val  Gln Pro Ser Asp Ala  Gly Val Tyr Ile Cys  Thr Cys Arg
    1715                1720                1725
```

```
Asn Leu  His Gln Ser Asn Thr  Ser Arg Ala Glu Leu  Leu Val Thr
    1730                1735                1740

Glu Ala  Pro Ser Lys Pro Ile  Thr Val Thr Val Glu  Glu Gln Arg
    1745                1750                1755

Ser Gln  Ser Val Arg Pro Gly  Ala Asp Val Thr Phe  Ile Cys Thr
    1760                1765                1770

Ala Lys  Ser Lys Ser Pro Ala  Tyr Thr Leu Val Trp  Thr Arg Leu
    1775                1780                1785

His Asn  Gly Lys Leu Pro Thr  Arg Ala Met Asp Phe  Asn Gly Ile
    1790                1795                1800

Leu Thr  Ile Arg Asn Val Gln  Leu Ser Asp Ala Gly  Thr Tyr Val
    1805                1810                1815

Cys Thr  Gly Ser Asn Met Phe  Ala Met Asp Gln Gly  Thr Ala Thr
    1820                1825                1830

Leu His  Val Gln Ala Ser Gly  Thr Leu Ser Ala Pro  Val Val Ser
    1835                1840                1845

Ile His  Pro Pro Gln Leu Thr  Val Gln Pro Gly Gln  Leu Ala Glu
    1850                1855                1860

Phe Arg  Cys Ser Ala Thr Gly  Ser Pro Thr Pro Thr  Leu Glu Trp
    1865                1870                1875

Thr Gly  Gly Pro Gly Gly Gln  Leu Pro Ala Lys Ala  Gln Ile His
    1880                1885                1890

Gly Gly  Ile Leu Arg Leu Pro  Ala Val Glu Pro Thr  Asp Gln Ala
    1895                1900                1905

Gln Tyr  Leu Cys Arg Ala His  Ser Ser Ala Gly Gln  Gln Val Ala
```

```
    1910                1915                1920

Arg Ala  Val Leu His Val His  Gly Gly Gly Gly Pro  Arg Val Gln
    1925                1930                1935

Val Ser  Pro Glu Arg Thr Gln  Val His Ala Gly Arg  Thr Val Arg
    1940                1945                1950

Leu Tyr  Cys Arg Ala Ala Gly  Val Pro Ser Ala Thr  Ile Thr Trp
    1955                1960                1965

Arg Lys  Glu Gly Gly Ser Leu  Pro Pro Gln Ala Arg  Ser Glu Arg
    1970                1975                1980

Thr Asp  Ile Ala Thr Leu Leu  Ile Pro Ala Ile Thr  Thr Ala Asp
    1985                1990                1995

Ala Gly  Phe Tyr Leu Cys Val  Ala Thr Ser Pro Ala  Gly Thr Ala
    2000                2005                2010

Gln Ala  Arg Ile Gln Val Val  Val Leu Ser Ala Ser  Asp Ala Ser
    2015                2020                2025

Pro Pro  Pro Val Lys Ile Glu  Ser Ser Ser Pro Ser  Val Thr Glu
    2030                2035                2040

Gly Gln  Thr Leu Asp Leu Asn  Cys Val Val Ala Gly  Ser Ala His
    2045                2050                2055

Ala Gln  Val Thr Trp Tyr Arg  Arg Gly Gly Ser Leu  Pro Pro His
    2060                2065                2070

Thr Gln  Val His Gly Ser Arg  Leu Arg Leu Pro Gln  Val Ser Pro
    2075                2080                2085

Ala Asp  Ser Gly Glu Tyr Val  Cys Arg Val Glu Asn  Gly Ser Gly
    2090                2095                2100
```

```
Pro Lys  Glu Ala Ser Ile Thr  Val Ser Val Leu His  Gly Thr His
    2105                2110                2115


Ser Gly  Pro Ser Tyr Thr Pro  Val Pro Gly Ser Thr  Arg Pro Ile
    2120                2125                2130


Arg Ile  Glu Pro Ser Ser Ser  His Val Ala Glu Gly  Gln Thr Leu
    2135                2140                2145


Asp Leu  Asn Cys Val Val Pro  Gly Gln Ala His Ala  Gln Val Thr
    2150                2155                2160


Trp His  Lys Arg Gly Gly Ser  Leu Pro Ala Arg His  Gln Thr His
    2165                2170                2175


Gly Ser  Leu Leu Arg Leu His  Gln Val Thr Pro Ala  Asp Ser Gly
    2180                2185                2190


Glu Tyr  Val Cys His Val Val  Gly Thr Ser Gly Pro  Leu Glu Ala
    2195                2200                2205


Ser Val  Leu Val Thr Ile Glu  Ala Ser Val Ile Pro  Gly Pro Ile
    2210                2215                2220


Pro Pro  Val Arg Ile Glu Ser  Ser Ser Ser Thr Val  Ala Glu Gly
    2225                2230                2235


Gln Thr  Leu Asp Leu Ser Cys  Val Val Ala Gly Gln  Ala His Ala
    2240                2245                2250


Gln Val  Thr Trp Tyr Lys Arg  Gly Gly Ser Leu Pro  Ala Arg His
    2255                2260                2265


Gln Val  Arg Gly Ser Arg Leu  Tyr Ile Phe Gln Ala  Ser Pro Ala
    2270                2275                2280


Asp Ala  Gly Gln Tyr Val Cys  Arg Ala Ser Asn Gly  Met Glu Ala
```

```
    2285                2290                2295

Ser Ile  Thr Val Thr Val Thr  Gly Thr Gln Gly Ala  Asn Leu Ala
    2300                2305                2310

Tyr Pro  Ala Gly Ser Thr Gln  Pro Ile Arg Ile Glu  Pro Ser Ser
    2315                2320                2325

Ser Gln  Val Ala Glu Gly Gln  Thr Leu Asp Leu Asn  Cys Val Val
    2330                2335                2340

Pro Gly  Gln Ser His Ala Gln  Val Thr Trp His Lys  Arg Gly Gly
    2345                2350                2355

Ser Leu  Pro Val Arg His Gln  Thr His Gly Ser Leu  Leu Arg Leu
    2360                2365                2370

Tyr Gln  Ala Ser Pro Ala Asp  Ser Gly Glu Tyr Val  Cys Arg Val
    2375                2380                2385

Leu Gly  Ser Ser Val Pro Leu  Glu Ala Ser Val Leu  Val Thr Ile
    2390                2395                2400

Glu Pro  Ala Gly Ser Val Pro  Ala Leu Gly Val Thr  Pro Thr Val
    2405                2410                2415

Arg Ile  Glu Ser Ser Ser Ser  Gln Val Ala Glu Gly  Gln Thr Leu
    2420                2425                2430

Asp Leu  Asn Cys Leu Val Ala  Gly Gln Ala His Ala  Gln Val Thr
    2435                2440                2445

Trp His  Lys Arg Gly Gly Ser  Leu Pro Ala Arg His  Gln Val His
    2450                2455                2460

Gly Ser  Arg Leu Arg Leu Leu  Gln Val Thr Pro Ala  Asp Ser Gly
    2465                2470                2475
```

```
Glu Tyr  Val Cys Arg Val Val  Gly Ser Ser Gly Thr  Gln Glu Ala
    2480                2485                2490

Ser Val  Leu Val Thr Ile Gln  Gln Arg Leu Ser Gly  Ser His Ser
    2495                2500                2505

Gln Gly  Val Ala Tyr Pro Val  Arg Ile Glu Ser Ser  Ser Ala Ser
    2510                2515                2520

Leu Ala  Asn Gly His Thr Leu  Asp Leu Asn Cys Leu  Val Ala Ser
    2525                2530                2535

Gln Ala  Pro His Thr Ile Thr  Trp Tyr Lys Arg Gly  Gly Ser Leu
    2540                2545                2550

Pro Ser  Arg His Gln Ile Val  Gly Ser Arg Leu Arg  Ile Pro Gln
    2555                2560                2565

Val Thr  Pro Ala Asp Ser Gly  Glu Tyr Val Cys His  Val Ser Asn
    2570                2575                2580

Gly Ala  Gly Ser Arg Glu Thr  Ser Leu Ile Val Thr  Ile Gln Gly
    2585                2590                2595

Ser Gly  Ser Ser His Val Pro  Ser Val Ser Pro Pro  Ile Arg Ile
    2600                2605                2610

Glu Ser  Ser Ser Pro Thr Val  Val Glu Gly Gln Thr  Leu Asp Leu
    2615                2620                2625

Asn Cys  Val Val Ala Arg Gln  Pro Gln Ala Ile Ile  Thr Trp Tyr
    2630                2635                2640

Lys Arg  Gly Gly Ser Leu Pro  Ser Arg His Gln Thr  His Gly Ser
    2645                2650                2655

His Leu  Arg Leu His Gln Met  Ser Val Ala Asp Ser  Gly Glu Tyr
```

```
    2660                2665                2670

Val Cys  Arg Ala Asn Asn Asn  Ile Asp Ala Leu Glu  Ala Ser Ile
    2675                2680                2685

Val Ile  Ser Val Ser Pro Ser  Ala Gly Ser Pro Ser  Ala Pro Gly
    2690                2695                2700

Ser Ser  Met Pro Ile Arg Ile  Glu Ser Ser Ser Ser  His Val Ala
    2705                2710                2715

Glu Gly  Glu Thr Leu Asp Leu  Asn Cys Val Val Pro  Gly Gln Ala
    2720                2725                2730

His Ala  Gln Val Thr Trp His  Lys Arg Gly Gly Ser  Leu Pro Ser
    2735                2740                2745

His His  Gln Thr Arg Gly Ser  Arg Leu Arg Leu His  His Val Ser
    2750                2755                2760

Pro Ala  Asp Ser Gly Glu Tyr  Val Cys Arg Val Met  Gly Ser Ser
    2765                2770                2775

Gly Pro  Leu Glu Ala Ser Val  Leu Val Thr Ile Glu  Ala Ser Gly
    2780                2785                2790

Ser Ser  Ala Val His Val Pro  Ala Pro Gly Gly Ala  Pro Pro Ile
    2795                2800                2805

Arg Ile  Glu Pro Ser Ser Ser  Arg Val Ala Glu Gly  Gln Thr Leu
    2810                2815                2820

Asp Leu  Lys Cys Val Val Pro  Gly Gln Ala His Ala  Gln Val Thr
    2825                2830                2835

Trp His  Lys Arg Gly Gly Asn  Leu Pro Ala Arg His  Gln Val His
    2840                2845                2850
```

```
Gly Pro  Leu Leu Arg Leu Asn  Gln Val Ser Pro Ala  Asp Ser Gly
    2855                2860                2865

Glu Tyr  Ser Cys Gln Val Thr  Gly Ser Ser Gly Thr  Leu Glu Ala
    2870                2875                2880

Ser Val  Leu Val Thr Ile Glu  Pro Ser Ser Pro Gly  Pro Ile Pro
    2885                2890                2895

Ala Pro  Gly Leu Ala Gln Pro  Ile Tyr Ile Glu Ala  Ser Ser Ser
    2900                2905                2910

His Val  Thr Glu Gly Gln Thr  Leu Asp Leu Asn Cys  Val Val Pro
    2915                2920                2925

Gly Gln  Ala His Ala Gln Val  Thr Trp Tyr Lys Arg  Gly Gly Ser
    2930                2935                2940

Leu Pro  Ala Arg His Gln Thr  His Gly Ser Gln Leu  Arg Leu His
    2945                2950                2955

Leu Val  Ser Pro Ala Asp Ser  Gly Glu Tyr Val Cys  Arg Ala Ala
    2960                2965                2970

Ser Gly  Pro Gly Pro Glu Gln  Glu Ala Ser Phe Thr  Val Thr Val
    2975                2980                2985

Pro Pro  Ser Glu Gly Ser Ser  Tyr Arg Leu Arg Ser  Pro Val Ile
    2990                2995                3000

Ser Ile  Asp Pro Pro Ser Ser  Thr Val Gln Gln Gly  Gln Asp Ala
    3005                3010                3015

Ser Phe  Lys Cys Leu Ile His  Asp Gly Ala Ala Pro  Ile Ser Leu
    3020                3025                3030

Glu Trp  Lys Thr Arg Asn Gln  Glu Leu Glu Asp Asn  Val His Ile
```

```
    3035                3040                3045

Ser Pro  Asn Gly Ser Ile Ile  Thr Ile Val Gly Thr  Arg Pro Ser
    3050                3055                3060

Asn His  Gly Thr Tyr Arg Cys  Val Ala Ser Asn Ala  Tyr Gly Val
    3065                3070                3075

Ala Gln  Ser Val Val Asn Leu  Ser Val His Gly Pro  Pro Thr Val
    3080                3085                3090

Ser Val  Leu Pro Glu Gly Pro  Val Trp Val Lys Val  Gly Lys Ala
    3095                3100                3105

Val Thr  Leu Glu Cys Val Ser  Ala Gly Glu Pro Arg  Ser Ser Ala
    3110                3115                3120

Arg Trp  Thr Arg Ile Ser Ser  Thr Pro Ala Lys Leu  Glu Gln Arg
    3125                3130                3135

Thr Tyr  Gly Leu Met Asp Ser  His Ala Val Leu Gln  Ile Ser Ser
    3140                3145                3150

Ala Lys  Pro Ser Asp Ala Gly  Thr Tyr Val Cys Leu  Ala Gln Asn
    3155                3160                3165

Ala Leu  Gly Thr Ala Gln Lys  Gln Val Glu Val Ile  Val Asp Thr
    3170                3175                3180

Gly Ala  Met Ala Pro Gly Ala  Pro Gln Val Gln Ala  Glu Glu Ala
    3185                3190                3195

Glu Leu  Thr Val Glu Ala Gly  His Thr Ala Thr Leu  Arg Cys Ser
    3200                3205                3210

Ala Thr  Gly Ser Pro Ala Pro  Thr Ile His Trp Ser  Lys Leu Arg
    3215                3220                3225
```

```
Ser Pro  Leu Pro Trp Gln His  Arg Leu Glu Gly Asp  Thr Leu Ile
    3230                3235                3240

Ile Pro  Arg Val Ala Gln Gln  Asp Ser Gly Gln Tyr  Ile Cys Asn
    3245                3250                3255

Ala Thr  Ser Pro Ala Gly His  Ala Glu Ala Thr Ile  Ile Leu His
    3260                3265                3270

Val Glu  Ser Pro Pro Tyr Ala  Thr Thr Val Pro Glu  His Ala Ser
    3275                3280                3285

Val Gln  Ala Gly Glu Thr Val  Gln Leu Gln Cys Leu  Ala His Gly
    3290                3295                3300

Thr Pro  Pro Leu Thr Phe Gln  Trp Ser Arg Val Gly  Ser Ser Leu
    3305                3310                3315

Pro Gly  Arg Ala Thr Ala Arg  Asn Glu Leu Leu His  Phe Glu Arg
    3320                3325                3330

Ala Ala  Pro Glu Asp Ser Gly  Arg Tyr Arg Cys Arg  Val Thr Asn
    3335                3340                3345

Lys Val  Gly Ser Ala Glu Ala  Phe Ala Gln Leu Leu  Val Gln Gly
    3350                3355                3360

Pro Pro  Gly Ser Leu Pro Ala  Thr Ser Ile Pro Ala  Gly Ser Thr
    3365                3370                3375

Pro Thr  Val Gln Val Thr Pro  Gln Leu Glu Thr Lys  Ser Ile Gly
    3380                3385                3390

Ala Ser  Val Glu Phe His Cys  Ala Val Pro Ser Asp  Arg Gly Thr
    3395                3400                3405

Gln Leu  Arg Trp Phe Lys Glu  Gly Gly Gln Leu Pro  Pro Gly His
```

```
    3410                3415                3420

Ser Val  Gln Asp Gly Val Leu  Arg Ile Gln Asn Leu  Asp Gln Ser
    3425                3430                3435

Cys Gln  Gly Thr Tyr Ile Cys  Gln Ala His Gly Pro  Trp Gly Lys
    3440                3445                3450

Ala Gln  Ala Ser Ala Gln Leu  Val Ile Gln Ala Leu  Pro Ser Val
    3455                3460                3465

Leu Ile  Asn Ile Arg Thr Ser  Val Gln Thr Val Val  Val Gly His
    3470                3475                3480

Ala Val  Glu Phe Glu Cys Leu  Ala Leu Gly Asp Pro  Lys Pro Gln
    3485                3490                3495

Val Thr  Trp Ser Lys Val Gly  Gly His Leu Arg Pro  Gly Ile Val
    3500                3505                3510

Gln Ser  Gly Gly Val Val Arg  Ile Ala His Val Glu  Leu Ala Asp
    3515                3520                3525

Ala Gly  Gln Tyr Arg Cys Thr  Ala Thr Asn Ala Ala  Gly Thr Thr
    3530                3535                3540

Gln Ser  His Val Leu Leu Leu  Val Gln Ala Leu Pro  Gln Ile Ser
    3545                3550                3555

Met Pro  Gln Glu Val Arg Val  Pro Ala Gly Ser Ala  Ala Val Phe
    3560                3565                3570

Pro Cys  Ile Ala Ser Gly Tyr  Pro Thr Pro Asp Ile  Ser Trp Ser
    3575                3580                3585

Lys Leu  Asp Gly Ser Leu Pro  Pro Asp Ser Arg Leu  Glu Asn Asn
    3590                3595                3600
```

```
Met Leu  Met Leu Pro Ser Val  Arg Pro Gln Asp Ala  Gly Thr Tyr
    3605                 3610                 3615

Val Cys  Thr Ala Thr Asn Arg  Gln Gly Lys Val Lys  Ala Phe Ala
    3620                 3625                 3630

His Leu  Gln Val Pro Glu Arg  Val Val Pro Tyr Phe  Thr Gln Thr
    3635                 3640                 3645

Pro Tyr  Ser Phe Leu Pro Leu  Pro Thr Ile Lys Asp  Ala Tyr Arg
    3650                 3655                 3660

Lys Phe  Glu Ile Lys Ile Thr  Phe Arg Pro Asp Ser  Ala Asp Gly
    3665                 3670                 3675

Met Leu  Leu Tyr Asn Gly Gln  Lys Arg Val Pro Gly  Ser Pro Thr
    3680                 3685                 3690

Asn Leu  Ala Asn Arg Gln Pro  Asp Phe Ile Ser Phe  Gly Leu Val
    3695                 3700                 3705

Gly Gly  Arg Pro Glu Phe Arg  Phe Asp Ala Gly Ser  Gly Met Ala
    3710                 3715                 3720

Thr Ile  Arg His Pro Thr Pro  Leu Ala Leu Gly His  Phe His Thr
    3725                 3730                 3735

Val Thr  Leu Leu Arg Ser Leu  Thr Gln Gly Ser Leu  Ile Val Gly
    3740                 3745                 3750

Asp Leu  Ala Pro Val Asn Gly  Thr Ser Gln Gly Lys  Phe Gln Gly
    3755                 3760                 3765

Leu Asp  Leu Asn Glu Glu Leu  Tyr Leu Gly Gly Tyr  Pro Asp Tyr
    3770                 3775                 3780

Gly Ala  Ile Pro Lys Ala Gly  Leu Ser Ser Gly Phe  Ile Gly Cys
```

```
    3785                3790                3795

Val Arg  Glu Leu Arg Ile Gln  Gly Glu Glu Ile Val  Phe His Asp
    3800                3805                3810

Leu Asn  Leu Thr Ala His Gly  Ile Ser His Cys Pro  Thr Cys Arg
    3815                3820                3825

Asp Arg  Pro Cys Gln Asn Gly  Gly Gln Cys His Asp  Ser Glu Ser
    3830                3835                3840

Ser Ser  Tyr Val Cys Val Cys  Pro Ala Gly Phe Thr  Gly Ser Arg
    3845                3850                3855

Cys Glu  His Ser Gln Ala Leu  His Cys His Pro Glu  Ala Cys Gly
    3860                3865                3870

Pro Asp  Ala Thr Cys Val Asn  Arg Pro Asp Gly Arg  Gly Tyr Thr
    3875                3880                3885

Cys Arg  Cys His Leu Gly Arg  Ser Gly Leu Arg Cys  Glu Glu Gly
    3890                3895                3900

Val Thr  Val Thr Thr Pro Ser  Leu Ser Gly Ala Gly  Ser Tyr Leu
    3905                3910                3915

Ala Leu  Pro Ala Leu Thr Asn  Thr His His Glu Leu  Arg Leu Asp
    3920                3925                3930

Val Glu  Phe Lys Pro Leu Ala  Pro Asp Gly Val Leu  Leu Phe Ser
    3935                3940                3945

Gly Gly  Lys Ser Gly Pro Val  Glu Asp Phe Val Ser  Leu Ala Met
    3950                3955                3960

Val Gly  Gly His Leu Glu Phe  Arg Tyr Glu Leu Gly  Ser Gly Leu
    3965                3970                3975
```

```
Ala Val  Leu Arg Ser Ala Glu  Pro Leu Ala Leu Gly  Arg Trp His
    3980                3985                3990

Arg Val  Ser Ala Glu Arg Leu  Asn Lys Asp Gly Ser  Leu Arg Val
    3995                4000                4005

Asn Gly  Gly Arg Pro Val Leu  Arg Ser Ser Pro Gly  Lys Ser Gln
    4010                4015                4020

Gly Leu  Asn Leu His Thr Leu  Leu Tyr Leu Gly Gly  Val Glu Pro
    4025                4030                4035

Ser Val  Pro Leu Ser Pro Ala  Thr Asn Met Ser Ala  His Phe Arg
    4040                4045                4050

Gly Cys  Val Gly Glu Val Ser  Val Asn Gly Lys Arg  Leu Asp Leu
    4055                4060                4065

Thr Tyr  Ser Phe Leu Gly Ser  Gln Gly Ile Gly Gln  Cys Tyr Asp
    4070                4075                4080

Ser Ser  Pro Cys Glu Arg Gln  Pro Cys Gln His Gly  Ala Thr Cys
    4085                4090                4095

Met Pro  Ala Gly Glu Tyr Glu  Phe Gln Cys Leu Cys  Arg Asp Gly
    4100                4105                4110

Phe Lys  Gly Asp Leu Cys Glu  His Glu Glu Asn Pro  Cys Gln Leu
    4115                4120                4125

Arg Glu  Pro Cys Leu His Gly  Gly Thr Cys Gln Gly  Thr Arg Cys
    4130                4135                4140

Leu Cys  Leu Pro Gly Phe Ser  Gly Pro Arg Cys Gln  Gln Gly Ser
    4145                4150                4155

Gly His  Gly Ile Ala Glu Ser  Asp Trp His Leu Glu  Gly Ser Gly
```

```
    4160                4165                4170

Gly Asn  Asp Ala Pro Gly Gln  Tyr Gly Ala Tyr Phe  His Asp Asp
    4175                4180                4185

Gly Phe  Leu Ala Phe Pro Gly  His Val Phe Ser Arg  Ser Leu Pro
    4190                4195                4200

Glu Val  Pro Glu Thr Ile Glu  Leu Glu Val Arg Thr  Ser Thr Ala
    4205                4210                4215

Ser Gly  Leu Leu Leu Trp Gln  Gly Val Glu Val Gly  Glu Ala Gly
    4220                4225                4230

Gln Gly  Lys Asp Phe Ile Ser  Leu Gly Leu Gln Asp  Gly His Leu
    4235                4240                4245

Val Phe  Arg Tyr Gln Leu Gly  Ser Gly Glu Ala Arg  Leu Val Ser
    4250                4255                4260

Glu Asp  Pro Ile Asn Asp Gly  Glu Trp His Arg Val  Thr Ala Leu
    4265                4270                4275

Arg Glu  Gly Arg Arg Gly Ser  Ile Gln Val Asp Gly  Glu Glu Leu
    4280                4285                4290

Val Ser  Gly Arg Ser Pro Gly  Pro Asn Val Ala Val  Asn Ala Lys
    4295                4300                4305

Gly Ser  Val Tyr Ile Gly Gly  Ala Pro Asp Val Ala  Thr Leu Thr
    4310                4315                4320

Gly Gly  Arg Phe Ser Ser Gly  Ile Thr Gly Cys Val  Lys Asn Leu
    4325                4330                4335

Val Leu  His Ser Ala Arg Pro  Gly Ala Pro Pro Pro  Gln Pro Leu
    4340                4345                4350
```

```
Asp Leu  Gln His Arg Ala Gln  Ala Gly Ala Asn Thr  Arg Pro Cys
    4355                4360                4365


Pro Ser
    4370
```

<210> 103
<211> 331
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Biglycan

<400> 103

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


Ser Val Thr Pro Thr Tyr Ser Ala Met Cys Pro Phe Gly Cys His Cys
            20                  25                  30


His Leu Arg Val Val Gln Cys Ser Asp Leu Gly Leu Lys Ser Val Pro
        35                  40                  45


Lys Glu Ile Ser Pro Asp Thr Thr Leu Leu Asp Leu Gln Asn Asn Asp
    50                  55                  60


Ile Ser Glu Leu Arg Lys Asp Asp Phe Lys Gly Leu Gln His Leu Tyr
65                  70                  75                  80


Ala Leu Val Leu Val Asn Asn Lys Ile Ser Lys Ile His Glu Lys Ala
                85                  90                  95


Phe Ser Pro Leu Arg Lys Leu Gln Lys Leu Tyr Ile Ser Lys Asn His
            100                 105                 110


Leu Val Glu Ile Pro Pro Asn Leu Pro Ser Ser Leu Val Glu Leu Arg
        115                 120                 125
```

```
Ile His Asp Asn Arg Ile Arg Lys Val Pro Lys Gly Val Phe Ser Gly
    130                 135                 140

Leu Arg Asn Met Asn Cys Ile Glu Met Gly Gly Asn Pro Leu Glu Asn
145                 150                 155                 160

Ser Gly Phe Glu Pro Gly Ala Phe Asp Gly Leu Lys Leu Asn Tyr Leu
                165                 170                 175

Arg Ile Ser Glu Ala Lys Leu Thr Gly Ile Pro Lys Asp Leu Pro Glu
            180                 185                 190

Thr Leu Asn Glu Leu His Leu Asp His Asn Lys Ile Gln Ala Ile Glu
        195                 200                 205

Leu Glu Asp Leu Leu Arg Tyr Ser Lys Leu Tyr Arg Leu Gly Leu Gly
    210                 215                 220

His Asn Gln Ile Arg Met Ile Glu Asn Gly Ser Leu Ser Phe Leu Pro
225                 230                 235                 240

Thr Leu Arg Glu Leu His Leu Asp Asn Asn Lys Leu Ala Arg Val Pro
                245                 250                 255

Ser Gly Leu Pro Asp Leu Lys Leu Leu Gln Val Val Tyr Leu His Ser
            260                 265                 270

Asn Asn Ile Thr Lys Val Gly Val Asn Asp Phe Cys Pro Met Gly Phe
        275                 280                 285

Gly Val Lys Arg Ala Tyr Tyr Asn Gly Ile Ser Leu Phe Asn Asn Pro
    290                 295                 300

Val Pro Tyr Trp Glu Val Gln Pro Ala Thr Phe Arg Cys Val Thr Asp
305                 310                 315                 320

Arg Leu Ala Ile Gln Phe Gly Asn Tyr Lys Lys
```

325 330

<210> 104
<211> 329
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Decorin

<400> 104

Asp Glu Ala Ser Gly Ile Gly Pro Glu Val Pro Asp Asp Arg Asp Phe
1 5 10 15

Glu Pro Ser Leu Gly Pro Val Cys Pro Phe Arg Cys Gln Cys His Leu
20 25 30

Arg Val Val Gln Cys Ser Asp Leu Gly Leu Asp Lys Val Pro Lys Asp
35 40 45

Leu Pro Pro Asp Thr Thr Leu Leu Asp Leu Gln Asn Asn Lys Ile Thr
50 55 60

Glu Ile Lys Asp Gly Asp Phe Lys Asn Leu Lys Asn Leu His Ala Leu
65 70 75 80

Ile Leu Val Asn Asn Lys Ile Ser Lys Val Ser Pro Gly Ala Phe Thr
85 90 95

Pro Leu Val Lys Leu Glu Arg Leu Tyr Leu Ser Lys Asn Gln Leu Lys
100 105 110

Glu Leu Pro Glu Lys Met Pro Lys Thr Leu Gln Glu Leu Arg Ala His
115 120 125

Glu Asn Glu Ile Thr Lys Val Arg Lys Val Thr Phe Asn Gly Leu Asn
130 135 140

Gln Met Ile Val Ile Glu Leu Gly Thr Asn Pro Leu Lys Ser Ser Gly

145 150 155 160

Ile Glu Asn Gly Ala Phe Gln Gly Met Lys Lys Leu Ser Tyr Ile Arg
165 170 175

Ile Ala Asp Thr Asn Ile Thr Ser Ile Pro Gln Gly Leu Pro Pro Ser
180 185 190

Leu Thr Glu Leu His Leu Asp Gly Asn Lys Ile Ser Arg Val Asp Ala
195 200 205

Ala Ser Leu Lys Gly Leu Asn Asn Leu Ala Lys Leu Gly Leu Ser Phe
210 215 220

Asn Ser Ile Ser Ala Val Asp Asn Gly Ser Leu Ala Asn Thr Pro His
225 230 235 240

Leu Arg Glu Leu His Leu Asp Asn Asn Lys Leu Thr Arg Val Pro Gly
245 250 255

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

Asn Ile Ser Val Val Gly Ser Ser Asp Phe Cys Pro Pro Gly His Asn
275 280 285

Thr Lys Lys Ala Ser Tyr Ser Gly Val Ser Leu Phe Ser Asn Pro Val
290 295 300

Gln Tyr Trp Glu Ile Gln Pro Ser Thr Phe Arg Cys Val Tyr Val Arg
305 310 315 320

Ser Ala Ile Gln Leu Gly Asn Tyr Lys
325

<210> 105
<211> 348
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: Asporin

<400> 105

Asp Met Glu Asp Thr Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp Asp
1 5 10 15

Asp Asp Asp Glu Asp Asn Ser Leu Phe Pro Thr Arg Glu Pro Arg Ser
20 25 30

His Phe Phe Pro Phe Asp Leu Phe Pro Met Cys Pro Phe Gly Cys Gln
35 40 45

Cys Tyr Ser Arg Val Val His Cys Ser Asp Leu Gly Leu Thr Ser Val
50 55 60

Pro Thr Asn Ile Pro Phe Asp Thr Arg Met Leu Asp Leu Gln Asn Asn
65 70 75 80

Lys Ile Lys Glu Ile Lys Glu Asn Asp Phe Lys Gly Leu Thr Ser Leu
85 90 95

Tyr Gly Leu Ile Leu Asn Asn Asn Lys Leu Thr Lys Ile His Pro Lys
100 105 110

Ala Phe Leu Thr Thr Lys Lys Leu Arg Arg Leu Tyr Leu Ser His Asn
115 120 125

Gln Leu Ser Glu Ile Pro Leu Asn Leu Pro Lys Ser Leu Ala Glu Leu
130 135 140

Arg Ile His Glu Asn Lys Val Lys Lys Ile Gln Lys Asp Thr Phe Lys
145 150 155 160

Gly Met Asn Ala Leu His Val Leu Glu Met Ser Ala Asn Pro Leu Asp
165 170 175

```
Asn Asn Gly Ile Glu Pro Gly Ala Phe Glu Gly Val Thr Val Phe His
            180                 185                 190

Ile Arg Ile Ala Glu Ala Lys Leu Thr Ser Val Pro Lys Gly Leu Pro
        195                 200                 205

Pro Thr Leu Leu Glu Leu His Leu Asp Tyr Asn Lys Ile Ser Thr Val
    210                 215                 220

Glu Leu Glu Asp Phe Lys Arg Tyr Lys Glu Leu Gln Arg Leu Gly Leu
225                 230                 235                 240

Gly Asn Asn Lys Ile Thr Asp Ile Glu Asn Gly Ser Leu Ala Asn Ile
                245                 250                 255

Pro Arg Val Arg Glu Ile His Leu Glu Asn Asn Lys Leu Lys Lys Ile
            260                 265                 270

Pro Ser Gly Leu Pro Glu Leu Lys Tyr Leu Gln Ile Ile Phe Leu His
        275                 280                 285

Ser Asn Ser Ile Ala Arg Val Gly Val Asn Asp Phe Cys Pro Thr Val
    290                 295                 300

Pro Lys Met Lys Lys Ser Leu Tyr Ser Ala Ile Ser Leu Phe Asn Asn
305                 310                 315                 320

Pro Val Lys Tyr Trp Glu Met Gln Pro Ala Thr Phe Arg Cys Val Leu
                325                 330                 335

Ser Arg Met Ser Val Gln Leu Gly Asn Phe Gly Met
            340                 345
```

<210> 106
<211> 358
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Fibromodulin

<400> 106

Gln Tyr Glu Asp Asp Pro His Trp Trp Phe His Tyr Leu Arg Ser Gln
1   5   10   15

Gln Ser Thr Tyr Tyr Asp Pro Tyr Asp Pro Tyr Pro Tyr Glu Thr Tyr
            20   25   30

Glu Pro Tyr Pro Tyr Gly Val Asp Glu Gly Pro Ala Tyr Thr Tyr Gly
        35   40   45

Ser Pro Ser Pro Pro Asp Pro Arg Asp Cys Pro Gln Glu Cys Asp Cys
    50   55   60

Pro Pro Asn Phe Pro Thr Ala Met Tyr Cys Asp Asn Arg Asn Leu Lys
65   70   75   80

Tyr Leu Pro Phe Val Pro Ser Arg Met Lys Tyr Val Tyr Phe Gln Asn
                85   90   95

Asn Gln Ile Thr Ser Ile Gln Glu Gly Val Phe Asp Asn Ala Thr Gly
            100   105   110

Leu Leu Trp Ile Ala Leu His Gly Asn Gln Ile Thr Ser Asp Lys Val
        115   120   125

Gly Arg Lys Val Phe Ser Lys Leu Arg His Leu Glu Arg Leu Tyr Leu
    130   135   140

Asp His Asn Asn Leu Thr Arg Met Pro Gly Pro Leu Pro Arg Ser Leu
145   150   155   160

Arg Glu Leu His Leu Asp His Asn Gln Ile Ser Arg Val Pro Asn Asn
                165   170   175

Ala Leu Glu Gly Leu Glu Asn Leu Thr Ala Leu Tyr Leu Gln His Asn

```
            180                 185                 190

Glu Ile Gln Glu Val Gly Ser Ser Met Arg Gly Leu Arg Ser Leu Ile
        195                 200                 205

Leu Leu Asp Leu Ser Tyr Asn His Leu Arg Lys Val Pro Asp Gly Leu
    210                 215                 220

Pro Ser Ala Leu Glu Gln Leu Tyr Met Glu His Asn Asn Val Tyr Thr
225                 230                 235                 240

Val Pro Asp Ser Tyr Phe Arg Gly Ala Pro Lys Leu Leu Tyr Val Arg
                245                 250                 255

Leu Ser His Asn Ser Leu Thr Asn Asn Gly Leu Ala Ser Asn Thr Phe
            260                 265                 270

Asn Ser Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Gln Leu Gln
        275                 280                 285

Lys Ile Pro Pro Val Asn Thr Asn Leu Glu Asn Leu Tyr Leu Gln Gly
    290                 295                 300

Asn Arg Ile Asn Glu Phe Ser Ile Ser Ser Phe Cys Thr Val Val Asp
305                 310                 315                 320

Val Val Asn Phe Ser Lys Leu Gln Val Leu Arg Leu Asp Gly Asn Glu
                325                 330                 335

Ile Lys Arg Ser Ala Met Pro Ala Asp Ala Pro Leu Cys Leu Arg Leu
            340                 345                 350

Ala Ser Leu Ile Glu Ile
        355
```

<210> 107
<211> 320
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: Lumican

<400> 107

Gln Tyr Tyr Asp Tyr Asp Phe Pro Leu Ser Ile Tyr Gly Gln Ser Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro Glu Ser Tyr Pro Ser Ala
20 25 30

Met Tyr Cys Asp Glu Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Arg Val Phe Ser Lys
85 90 95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn His Asn Asn Leu Thr Glu
100 105 110

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

Asn Lys Ile Thr Lys Leu Gly Ser Phe Glu Gly Leu Val Asn Leu Thr
130 135 140

Phe Ile His Leu Gln His Asn Arg Leu Lys Glu Asp Ala Val Ser Ala
145 150 155 160

Ala Phe Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
165 170 175

```
Gln Ile Ala Arg Leu Pro Ser Gly Leu Pro Val Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Asn Ala Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Ile Pro Gly Asn Ser Phe Asn Val Ser Ser Leu Val Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Gln Leu Glu Lys Phe Asp
            260                 265                 270

Ile Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Arg Ile Ser Glu Thr Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Val Thr Leu Asn
305                 310                 315                 320
```

<210> 108
<211> 362
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: PRELP

<400> 108

```
Gln Pro Thr Arg Arg Pro Arg Pro Gly Thr Gly Pro Gly Arg Arg Pro
1               5                   10                  15
```

```
Arg Pro Arg Pro Arg Pro Thr Pro Ser Phe Pro Gln Pro Asp Glu Pro
            20                  25                  30

Ala Glu Pro Thr Asp Leu Pro Pro Pro Leu Pro Pro Gly Pro Pro Ser
        35                  40                  45

Ile Phe Pro Asp Cys Pro Arg Glu Cys Tyr Cys Pro Pro Asp Phe Pro
    50                  55                  60

Ser Ala Leu Tyr Cys Asp Ser Arg Asn Leu Arg Lys Val Pro Val Ile
65                  70                  75                  80

Pro Pro Arg Ile His Tyr Leu Tyr Leu Gln Asn Asn Phe Ile Thr Glu
                85                  90                  95

Leu Pro Val Glu Ser Phe Gln Asn Ala Thr Gly Leu Arg Trp Ile Asn
            100                 105                 110

Leu Asp Asn Asn Arg Ile Arg Lys Ile Asp Gln Arg Val Leu Glu Lys
        115                 120                 125

Leu Pro Gly Leu Val Phe Leu Tyr Met Glu Lys Asn Gln Leu Glu Glu
    130                 135                 140

Val Pro Ser Ala Leu Pro Arg Asn Leu Glu Gln Leu Arg Leu Ser Gln
145                 150                 155                 160

Asn His Ile Ser Arg Ile Pro Pro Gly Val Phe Ser Lys Leu Glu Asn
                165                 170                 175

Leu Leu Leu Leu Asp Leu Gln His Asn Arg Leu Ser Asp Gly Val Phe
            180                 185                 190

Lys Pro Asp Thr Phe His Gly Leu Lys Asn Leu Met Gln Leu Asn Leu
        195                 200                 205

Ala His Asn Ile Leu Arg Lys Met Pro Pro Arg Val Pro Thr Ala Ile
```

```
    210                 215                 220

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

Tyr Phe Lys Ser Phe Pro Asn Leu Ala Phe Ile Arg Leu Asn Tyr Asn
                245                 250                 255

Lys Leu Thr Asp Arg Gly Leu Pro Lys Asn Ser Phe Asn Ile Ser Asn
            260                 265                 270

Leu Leu Val Leu His Leu Ser His Asn Arg Ile Ser Ser Val Pro Ala
        275                 280                 285

Ile Asn Asn Arg Leu Glu His Leu Tyr Leu Asn Asn Asn Ser Ile Glu
    290                 295                 300

Lys Ile Asn Gly Thr Gln Ile Cys Pro Asn Asp Leu Val Ala Phe His
305                 310                 315                 320

Asp Phe Ser Ser Asp Leu Glu Asn Val Pro His Leu Arg Tyr Leu Arg
                325                 330                 335

Leu Asp Gly Asn Tyr Leu Lys Pro Pro Ile Pro Leu Asp Leu Met Met
            340                 345                 350

Cys Phe Arg Leu Leu Gln Ser Val Val Ile
        355                 360


<210>  109
<211>  401
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: Osteoadherin/Osteomodulin

<400>  109

Gln Tyr Glu Thr Tyr Gln Trp Asp Glu Asp Tyr Asp Gln Glu Pro Asp
```

```
1               5                   10                  15

Asp Asp Tyr Gln Thr Gly Phe Pro Phe Arg Gln Asn Val Asp Tyr Gly
            20                  25                  30

Val Pro Phe His Gln Tyr Thr Leu Gly Cys Val Ser Glu Cys Phe Cys
        35                  40                  45

Pro Thr Asn Phe Pro Ser Ser Met Tyr Cys Asp Asn Arg Lys Leu Lys
    50                  55                  60

Thr Ile Pro Asn Ile Pro Met His Ile Gln Gln Leu Tyr Leu Gln Phe
65                  70                  75                  80

Asn Glu Ile Glu Ala Val Thr Ala Asn Ser Phe Ile Asn Ala Thr His
                85                  90                  95

Leu Lys Glu Ile Asn Leu Ser His Asn Lys Ile Lys Ser Gln Lys Ile
            100                 105                 110

Asp Tyr Gly Val Phe Ala Lys Leu Pro Asn Leu Leu Gln Leu His Leu
        115                 120                 125

Glu His Asn Asn Leu Glu Glu Phe Pro Phe Pro Leu Pro Lys Ser Leu
    130                 135                 140

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

Ala Met Asp Gly Leu Val Asn Leu Thr Met Leu Asp Leu Cys Tyr Asn
                165                 170                 175

Tyr Leu His Asp Ser Leu Leu Lys Asp Lys Ile Phe Ala Lys Met Glu
            180                 185                 190

Lys Leu Met Gln Leu Asn Leu Cys Ser Asn Arg Leu Glu Ser Met Pro
        195                 200                 205
```

```
Pro Gly Leu Pro Ser Ser Leu Met Tyr Leu Ser Leu Glu Asn Asn Ser
    210                 215                 220

Ile Ser Ser Ile Pro Glu Lys Tyr Phe Asp Lys Leu Pro Lys Leu His
225                 230                 235                 240

Thr Leu Arg Met Ser His Asn Lys Leu Gln Asp Ile Pro Tyr Asn Ile
                245                 250                 255

Phe Asn Leu Pro Asn Ile Val Glu Leu Ser Val Gly His Asn Lys Leu
            260                 265                 270

Lys Gln Ala Phe Tyr Ile Pro Arg Asn Leu Glu His Leu Tyr Leu Gln
        275                 280                 285

Asn Asn Glu Ile Glu Lys Met Asn Leu Thr Val Met Cys Pro Ser Ile
    290                 295                 300

Asp Pro Leu His Tyr His His Leu Thr Tyr Ile Arg Val Asp Gln Asn
305                 310                 315                 320

Lys Leu Lys Glu Pro Ile Ser Ser Tyr Ile Phe Phe Cys Phe Pro His
                325                 330                 335

Ile His Thr Ile Tyr Tyr Gly Glu Gln Arg Ser Thr Asn Gly Gln Thr
            340                 345                 350

Ile Gln Leu Lys Thr Gln Val Phe Arg Arg Phe Pro Asp Asp Asp Asp
        355                 360                 365

Glu Ser Glu Asp His Asp Asp Pro Asp Asn Ala His Glu Ser Pro Glu
    370                 375                 380

Gln Glu Gly Ala Glu Gly His Phe Asp Leu His Tyr Tyr Glu Asn Gln
385                 390                 395                 400

Glu
```

<210> 110
<211> 313
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Opticin

<400> 110

Ala Ser Leu Pro Arg Lys Glu Arg Lys Arg Arg Glu Glu Gln Met Pro
1   5   10   15

Arg Glu Gly Asp Ser Phe Glu Val Leu Pro Leu Arg Asn Asp Val Leu
            20   25   30

Asn Pro Asp Asn Tyr Gly Glu Val Ile Asp Leu Ser Asn Tyr Glu Glu
        35   40   45

Leu Thr Asp Tyr Gly Asp Gln Leu Pro Glu Val Lys Val Thr Ser Leu
    50   55   60

Ala Pro Ala Thr Ser Ile Ser Pro Ala Lys Ser Thr Thr Ala Pro Gly
65   70   75   80

Thr Pro Ser Ser Asn Pro Thr Met Thr Arg Pro Thr Thr Ala Gly Leu
                85   90   95

Leu Leu Ser Ser Gln Pro Asn His Gly Leu Pro Thr Cys Leu Val Cys
            100   105   110

Val Cys Leu Gly Ser Ser Val Tyr Cys Asp Asp Ile Asp Leu Glu Asp
        115   120   125

Ile Pro Pro Leu Pro Arg Arg Thr Ala Tyr Leu Tyr Ala Arg Phe Asn
    130   135   140

Arg Ile Ser Arg Ile Arg Ala Glu Asp Phe Lys Gly Leu Thr Lys Leu

145 150 155 160

Lys Arg Ile Asp Leu Ser Asn Asn Leu Ile Ser Ser Ile Asp Asn Asp
165 170 175

Ala Phe Arg Leu Leu His Ala Leu Gln Asp Leu Ile Leu Pro Glu Asn
180 185 190

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

Val Arg Leu Asn Arg Leu Gln Ser Ser Gly Ile Gln Pro Ala Ala Phe
210 215 220

Arg Ala Met Glu Lys Leu Gln Phe Leu Tyr Leu Ser Asp Asn Leu Leu
225 230 235 240

Asp Ser Ile Pro Gly Pro Leu Pro Leu Ser Leu Arg Ser Val His Leu
245 250 255

Gln Asn Asn Leu Ile Glu Thr Met Gln Arg Asp Val Phe Cys Asp Pro
260 265 270

Glu Glu His Lys His Thr Arg Arg Gln Leu Glu Asp Ile Arg Leu Asp
275 280 285

Gly Asn Pro Ile Asn Leu Ser Leu Phe Pro Ser Ala Tyr Phe Cys Leu
290 295 300

Pro Arg Leu Pro Ile Gly Arg Phe Thr
305 310

<210> 111
<211> 278
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Osteoglycin/Mimecan

<400> 111

```
Pro Pro Thr Gln Gln Asp Ser Arg Ile Ile Tyr Asp Tyr Gly Thr Asp
1               5                  10                  15


Asn Phe Glu Glu Ser Ile Phe Ser Gln Asp Tyr Glu Asp Lys Tyr Leu
            20                  25                  30


Asp Gly Lys Asn Ile Lys Glu Lys Glu Thr Val Ile Ile Pro Asn Glu
        35                  40                  45


Lys Ser Leu Gln Leu Gln Lys Asp Glu Ala Ile Thr Pro Leu Pro Pro
    50                  55                  60


Lys Lys Glu Asn Asp Glu Met Pro Thr Cys Leu Leu Cys Val Cys Leu
65                  70                  75                  80


Ser Gly Ser Val Tyr Cys Glu Glu Val Asp Ile Asp Ala Val Pro Pro
                85                  90                  95


Leu Pro Lys Glu Ser Ala Tyr Leu Tyr Ala Arg Phe Asn Lys Ile Lys
            100                 105                 110


Lys Leu Thr Ala Lys Asp Phe Ala Asp Ile Pro Asn Leu Arg Arg Leu
        115                 120                 125


Asp Phe Thr Gly Asn Leu Ile Glu Asp Ile Glu Asp Gly Thr Phe Ser
    130                 135                 140


Lys Leu Ser Leu Leu Glu Glu Leu Ser Leu Ala Glu Asn Gln Leu Leu
145                 150                 155                 160


Lys Leu Pro Val Leu Pro Pro Lys Leu Thr Leu Phe Asn Ala Lys Tyr
                165                 170                 175


Asn Lys Ile Lys Ser Arg Gly Ile Lys Ala Asn Ala Phe Lys Lys Leu
            180                 185                 190
```

```
Asn Asn Leu Thr Phe Leu Tyr Leu Asp His Asn Ala Leu Glu Ser Val
        195                 200                 205

Pro Leu Asn Leu Pro Glu Ser Leu Arg Val Ile His Leu Gln Phe Asn
    210                 215                 220

Asn Ile Ala Ser Ile Thr Asp Asp Thr Phe Cys Lys Ala Asn Asp Thr
225                 230                 235                 240

Ser Tyr Ile Arg Asp Arg Ile Glu Glu Ile Arg Leu Glu Gly Asn Pro
                245                 250                 255

Ile Val Leu Gly Lys His Pro Asn Ser Phe Ile Cys Leu Lys Arg Leu
            260                 265                 270

Pro Ile Gly Ser Tyr Phe
        275
```

<210> 112
<211> 732
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Chondroadherin

<400> 112

```
Gln Arg Cys Pro Gln Ala Cys Ile Cys Asp Asn Ser Arg Arg His Val
1               5                   10                  15

Ala Cys Arg Tyr Gln Asn Leu Thr Glu Val Pro Asp Ala Ile Pro Glu
            20                  25                  30

Leu Thr Gln Arg Leu Asp Leu Gln Gly Asn Leu Leu Lys Val Ile Pro
        35                  40                  45

Ala Ala Ala Phe Gln Gly Val Pro His Leu Thr His Leu Asp Leu Arg
    50                  55                  60
```

```
His Cys Glu Val Glu Leu Val Ala Glu Gly Ala Phe Arg Gly Leu Gly
65                  70                  75                  80

Arg Leu Leu Leu Leu Asn Leu Ala Ser Asn His Leu Arg Glu Leu Pro
                85                  90                  95

Gln Glu Ala Leu Asp Gly Leu Gly Ser Leu Arg Arg Leu Glu Leu Glu
            100                 105                 110

Gly Asn Ala Leu Glu Glu Leu Arg Pro Gly Thr Phe Gly Ala Leu Gly
        115                 120                 125

Ala Leu Ala Thr Leu Asn Leu Ala His Asn Ala Leu Val Tyr Leu Pro
    130                 135                 140

Ala Met Ala Phe Gln Gly Leu Leu Arg Val Arg Trp Leu Arg Leu Ser
145                 150                 155                 160

His Asn Ala Leu Ser Val Leu Ala Pro Glu Ala Leu Ala Gly Leu Pro
                165                 170                 175

Ala Leu Arg Arg Leu Ser Leu His His Asn Glu Leu Gln Ala Leu Pro
            180                 185                 190

Gly Pro Val Leu Ser Gln Ala Arg Gly Leu Ala Arg Leu Glu Leu Gly
        195                 200                 205

His Asn Pro Leu Thr Tyr Ala Gly Glu Glu Asp Gly Leu Ala Leu Pro
    210                 215                 220

Gly Leu Arg Glu Leu Leu Leu Asp Gly Gly Ala Leu Gln Ala Leu Gly
225                 230                 235                 240

Pro Arg Ala Phe Ala His Cys Pro Arg Leu His Thr Leu Asp Leu Arg
                245                 250                 255

Gly Asn Gln Leu Asp Thr Leu Pro Pro Leu Gln Gly Pro Gly Gln Leu
```

```
            260                 265                 270

Arg Arg Leu Arg Leu Gln Gly Asn Pro Leu Trp Cys Gly Cys Gln Ala
        275                 280                 285

Arg Pro Leu Leu Glu Trp Leu Ala Arg Ala Arg Val Arg Ser Asp Gly
    290                 295                 300

Ala Cys Gln Gly Pro Arg Arg Leu Arg Gly Glu Ala Leu Asp Ala Leu
305                 310                 315                 320

Arg Pro Trp Asp Leu Arg Cys Pro Gly Asp Ala Ala Gln Glu Glu Glu
                325                 330                 335

Glu Leu Glu Glu Arg Ala Val Ala Gly Pro Arg Ala Pro Pro Arg Gly
            340                 345                 350

Pro Pro Arg Gly Pro Gly Glu Glu Arg Ala Val Ala Pro Cys Pro Arg
        355                 360                 365

Ala Cys Val Cys Val Pro Glu Ser Arg His Ser Ser Cys Glu Gly Cys
    370                 375                 380

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

Asp Leu Arg Arg Asn His Phe Pro Ser Val Pro Arg Ala Ala Phe Pro
                405                 410                 415

Gly Leu Gly His Leu Val Ser Leu His Leu Gln His Cys Gly Ile Ala
            420                 425                 430

Glu Leu Glu Ala Gly Ala Leu Ala Gly Leu Gly Arg Leu Ile Tyr Leu
        435                 440                 445

Tyr Leu Ser Asp Asn Gln Leu Ala Gly Leu Ser Ala Ala Ala Leu Glu
    450                 455                 460
```

```
Gly Ala Pro Arg Leu Gly Tyr Leu Tyr Leu Glu Arg Asn Arg Phe Leu
465                 470                 475                 480

Gln Val Pro Gly Ala Ala Leu Arg Ala Leu Pro Ser Leu Phe Ser Leu
                485                 490                 495

His Leu Gln Asp Asn Ala Val Asp Arg Leu Ala Pro Gly Asp Leu Gly
            500                 505                 510

Arg Thr Arg Ala Leu Arg Trp Val Tyr Leu Ser Gly Asn Arg Ile Thr
        515                 520                 525

Glu Val Ser Leu Gly Ala Leu Gly Pro Ala Arg Glu Leu Glu Lys Leu
    530                 535                 540

His Leu Asp Arg Asn Gln Leu Arg Glu Val Pro Thr Gly Ala Leu Glu
545                 550                 555                 560

Gly Leu Pro Ala Leu Leu Glu Leu Gln Leu Ser Gly Asn Pro Leu Arg
                565                 570                 575

Ala Leu Arg Asp Gly Ala Phe Gln Pro Val Gly Arg Ser Leu Gln His
            580                 585                 590

Leu Phe Leu Asn Ser Ser Gly Leu Glu Gln Ile Cys Pro Gly Ala Phe
        595                 600                 605

Ser Gly Leu Gly Pro Gly Leu Gln Ser Leu His Leu Gln Lys Asn Gln
    610                 615                 620

Leu Arg Ala Leu Pro Ala Leu Pro Ser Leu Ser Gln Leu Glu Leu Ile
625                 630                 635                 640

Asp Leu Ser Ser Asn Pro Phe His Cys Asp Cys Gln Leu Leu Pro Leu
                645                 650                 655

His Arg Trp Leu Thr Gly Leu Asn Leu Arg Val Gly Ala Thr Cys Ala
```

660 665 670

Thr Pro Pro Asn Ala Arg Gly Gln Arg Val Lys Ala Ala Ala Ala Val
675 680 685

Phe Glu Asp Cys Pro Gly Trp Ala Ala Arg Lys Ala Lys Arg Thr Pro
690 695 700

Ala Ser Arg Pro Ser Ala Arg Arg Thr Pro Ile Lys Gly Arg Gln Cys
705 710 715 720

Gly Ala Asp Lys Val Gly Lys Glu Lys Gly Arg Leu
725 730

<210> 113
<211> 594
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Podocan

<400> 113

Gly Pro Val Leu Ala Val Arg Ala Pro Gly Phe Gly Arg Ser Gly Gly
1 5 10 15

His Ser Leu Ser Pro Glu Glu Asn Glu Phe Ala Glu Glu Glu Pro Val
20 25 30

Leu Val Leu Ser Pro Glu Glu Pro Gly Pro Gly Pro Ala Ala Val Ser
35 40 45

Cys Pro Arg Asp Cys Ala Cys Ser Gln Glu Gly Val Val Asp Cys Gly
50 55 60

Gly Ile Asp Leu Arg Glu Phe Pro Gly Asp Leu Pro Glu His Thr Asn
65 70 75 80

His Leu Ser Leu Gln Asn Asn Gln Leu Glu Lys Ile Tyr Pro Glu Glu

```
                85                  90                  95

Leu Ser Arg Leu His Arg Leu Glu Thr Leu Asn Leu Gln Asn Asn Arg
            100                 105                 110

Leu Thr Ser Arg Gly Leu Pro Glu Lys Ala Phe Glu His Leu Thr Asn
        115                 120                 125

Leu Asn Tyr Leu Tyr Leu Ala Asn Asn Lys Leu Thr Leu Ala Pro Arg
    130                 135                 140

Phe Leu Pro Asn Ala Leu Ile Ser Val Asp Phe Ala Ala Asn Tyr Leu
145                 150                 155                 160

Thr Lys Ile Tyr Gly Leu Thr Phe Gly Gln Lys Pro Asn Leu Arg Ser
                165                 170                 175

Val Tyr Leu His Asn Asn Lys Leu Ala Asp Ala Gly Leu Pro Asp Asn
            180                 185                 190

Met Phe Asn Gly Ser Ser Asn Val Glu Val Leu Ile Leu Ser Ser Asn
        195                 200                 205

Phe Leu Arg His Val Pro Lys His Leu Pro Pro Ala Leu Tyr Lys Leu
    210                 215                 220

His Leu Lys Asn Asn Lys Leu Glu Lys Ile Pro Pro Gly Ala Phe Ser
225                 230                 235                 240

Glu Leu Ser Ser Leu Arg Glu Leu Tyr Leu Gln Asn Asn Tyr Leu Thr
                245                 250                 255

Asp Glu Gly Leu Asp Asn Glu Thr Phe Trp Lys Leu Ser Ser Leu Glu
            260                 265                 270

Tyr Leu Asp Leu Ser Ser Asn Asn Leu Ser Arg Val Pro Ala Gly Leu
        275                 280                 285
```

```
Pro Arg Ser Leu Val Leu Leu His Leu Glu Lys Asn Ala Ile Arg Ser
    290                 295                 300

Val Asp Ala Asn Val Leu Thr Pro Ile Arg Ser Leu Glu Tyr Leu Leu
305                 310                 315                 320

Leu His Ser Asn Gln Leu Arg Glu Gln Gly Ile His Pro Leu Ala Phe
                325                 330                 335

Gln Gly Leu Lys Arg Leu His Thr Val His Leu Tyr Asn Asn Ala Leu
            340                 345                 350

Glu Arg Val Pro Ser Gly Leu Pro Arg Arg Val Arg Thr Leu Met Ile
        355                 360                 365

Leu His Asn Gln Ile Thr Gly Ile Gly Arg Glu Asp Phe Ala Thr Thr
    370                 375                 380

Tyr Phe Leu Glu Glu Leu Asn Leu Ser Tyr Asn Arg Ile Thr Ser Pro
385                 390                 395                 400

Gln Val His Arg Asp Ala Phe Arg Lys Leu Arg Leu Leu Arg Ser Leu
                405                 410                 415

Asp Leu Ser Gly Asn Arg Leu His Thr Leu Pro Pro Gly Leu Pro Arg
            420                 425                 430

Asn Val His Val Leu Lys Val Lys Arg Asn Glu Leu Ala Ala Leu Ala
        435                 440                 445

Arg Gly Ala Leu Val Gly Met Ala Gln Leu Arg Glu Leu Tyr Leu Thr
    450                 455                 460

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

Leu Ala His Leu Gln Leu Leu Asp Ile Ala Gly Asn Gln Leu Thr Glu
```

```
                485                 490                 495

Ile Pro Glu Gly Leu Pro Glu Ser Leu Glu Tyr Leu Tyr Leu Gln Asn
            500                 505                 510

Asn Lys Ile Ser Ala Val Pro Ala Asn Ala Phe Asp Ser Thr Pro Asn
        515                 520                 525

Leu Lys Gly Ile Phe Leu Arg Phe Asn Lys Leu Ala Val Gly Ser Val
    530                 535                 540

Val Asp Ser Ala Phe Arg Arg Leu Lys His Leu Gln Val Leu Asp Ile
545                 550                 555                 560

Glu Gly Asn Leu Glu Phe Gly Asp Ile Ser Lys Asp Arg Gly Arg Leu
                565                 570                 575

Gly Lys Glu Lys Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu
            580                 585                 590

Thr Arg
```

<210> 114
<211> 330
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(330)
<223> Human IgG1 constant region (amino acid sequence)

<400> 114

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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


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


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


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


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


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


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


<210>  115
<211>  232
<212>  PRT
<213>  Homo sapiens


<220>
<221>  misc_feature
<222>  (1)..(232)
<223>  Human IgG1 Fc domain (amino acid sequence)

<400>  115

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
1               5                   10                  15


Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
            20                  25                  30


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

```
        35                  40                  45

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
    50                  55                  60

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
65                  70                  75                  80

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
                85                  90                  95

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
            100                 105                 110

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
        115                 120                 125

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr
    130                 135                 140

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
145                 150                 155                 160

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
                165                 170                 175

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
            180                 185                 190

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
        195                 200                 205

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
    210                 215                 220

Ser Leu Ser Leu Ser Pro Gly Lys
225                 230
```

<210> 116
<211> 197
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: HSA domain I

<400> 116

Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
1   5   10   15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
            20   25   30

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
        35   40   45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
    50   55   60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
65   70   75   80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
                85   90   95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
            100   105   110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
        115   120   125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
    130   135   140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
145   150   155   160

```
Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
                165                 170                 175


Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
            180                 185                 190


Ser Ala Lys Gln Arg
        195


<210>  117
<211>  197
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: HSA domain II

<400>  117

Gly Lys Ala Ser Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln
1               5                   10                  15


Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser
            20                  25                  30


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


Asp Leu Thr Lys Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu
    50                  55                  60


Cys Ala Asp Asp Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln
65                  70                  75                  80


Asp Ser Ile Ser Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu
                85                  90                  95


Glu Lys Ser His Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala
            100                 105                 110
```

```
Asp Leu Pro Ser Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys
        115                 120                 125


Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr
    130                 135                 140


Glu Tyr Ala Arg Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg
145                 150                 155                 160


Leu Ala Lys Thr Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala
                165                 170                 175


Asp Pro His Glu Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu
            180                 185                 190


Val Glu Glu Pro Gln
        195


<210>  118
<211>  200
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: HSA domain III

<400>  118

Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu Tyr
1               5                   10                  15


Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro Gln
            20                  25                  30


Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys Val
        35                  40                  45


Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys Ala
    50                  55                  60
```

```
Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His Glu
65                  70                  75                  80


Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser Leu
                85                  90                  95


Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr Tyr
            100                 105                 110


Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp Ile
        115                 120                 125


Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala Leu
    130                 135                 140


Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu Lys
145                 150                 155                 160


Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys Ala
                165                 170                 175


Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val Ala
            180                 185                 190


Ala Ser Gln Ala Ala Leu Gly Leu
        195                 200


<210>  119
<211>  50
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: Linker

<400>  119

Leu Glu Ala Glu Ala Ala Ala Lys Glu Ala Ala Ala Lys Glu Ala Ala
1               5                   10                  15
```

Ala Lys Glu Ala Ala Ala Lys Ala Leu Glu Ala Glu Ala Ala Ala Lys
            20   25   30

Glu Ala Ala Ala Lys Glu Ala Ala Ala Lys Glu Ala Ala Ala Lys Ala
        35   40   45

Leu Glu
    50

<210> 120
<211> 1071
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-MSA-IL2

<400> 120

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1   5   10   15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20   25   30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35   40   45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50   55   60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65   70   75   80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85   90   95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100   105   110

```
Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
```

```
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510
```

```
Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
```

```
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910
```

```
Gly Gly Gly Ser Ala Pro Thr Ser Ser Ser Thr Ser Ser Ser Thr Ala
        915                 920                 925


Glu Ala Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln His Leu
    930                 935                 940


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


Tyr Arg Asn Leu Lys Leu Pro Arg Met Leu Thr Phe Lys Phe Tyr Leu
                965                 970                 975


Pro Lys Gln Ala Thr Glu Leu Lys Asp Leu Gln Cys Leu Glu Asp Glu
            980                 985                 990


Leu Gly Pro Leu Arg His Val Leu  Asp Leu Thr Gln Ser  Lys Ser Phe
        995                 1000                1005


Gln Leu  Glu Asp Ala Glu Asn  Phe Ile Ser Asn Ile  Arg Val Thr
    1010                1015                1020


Val Val  Lys Leu Lys Gly Ser  Asp Asn Thr Phe Glu  Cys Gln Phe
    1025                1030                1035


Asp Asp  Glu Ser Ala Thr Val  Val Asp Phe Leu Arg  Arg Trp Ile
    1040                1045                1050


Ala Phe  Cys Gln Ser Ile Ile  Ser Thr Ser Pro Gln  His His His
    1055                1060                1065


His His  His
    1070
```

<210> 121
<211> 743
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MSA-IL2

<400> 121

```
Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu
1               5                   10                  15


Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln
            20                  25                  30


Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp
        35                  40                  45


Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys
    50                  55                  60


Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu
65                  70                  75                  80


Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro
                85                  90                  95


Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu
            100                 105                 110


Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys
        115                 120                 125


Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg
    130                 135                 140


Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln
145                 150                 155                 160


Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser
                165                 170                 175


Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser
```

```
            180                 185                 190

Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro
    210                 215                 220

Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys
225                 230                 235                 240

Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser
            260                 265                 270

Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His
        275                 280                 285

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

Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys
            340                 345                 350

Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala
        355                 360                 365

Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro
    370                 375                 380
```

```
Lys Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu
385                 390                 395                 400

Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg
            420                 425                 430

Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys
        435                 440                 445

Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser
465                 470                 475                 480

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

Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp
            500                 505                 510

Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu
    530                 535                 540

Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys
545                 550                 555                 560

Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val
                565                 570                 575

Thr Arg Cys Lys Asp Ala Leu Ala Gly Gly Gly Ser Ala Pro Thr Ser
```

```
            580                 585                 590

Ser Ser Thr Ser Ser Ser Thr Ala Glu Ala Gln Gln Gln Gln Gln Gln
        595                 600                 605

Gln Gln Gln Gln Gln Gln His Leu Glu Gln Leu Leu Met Asp Leu Gln
    610                 615                 620

Glu Leu Leu Ser Arg Met Glu Asn Tyr Arg Asn Leu Lys Leu Pro Arg
625                 630                 635                 640

Met Leu Thr Phe Lys Phe Tyr Leu Pro Lys Gln Ala Thr Glu Leu Lys
                645                 650                 655

Asp Leu Gln Cys Leu Glu Asp Glu Leu Gly Pro Leu Arg His Val Leu
            660                 665                 670

Asp Leu Thr Gln Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe
        675                 680                 685

Ile Ser Asn Ile Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn
    690                 695                 700

Thr Phe Glu Cys Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe
705                 710                 715                 720

Leu Arg Arg Trp Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro
                725                 730                 735

Gln His His His His His His
            740
```

<210> 122
<211> 1117
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IL12-MSA

<400> 122

```
Met Trp Glu Leu Glu Lys Asp Val Tyr Val Val Glu Val Asp Trp Thr
1               5                  10                  15


Pro Asp Ala Pro Gly Glu Thr Val Asn Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30


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


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


Gln Tyr Thr Cys His Lys Gly Gly Glu Thr Leu Ser His Ser His Leu
65                  70                  75                  80


Leu Leu His Lys Lys Glu Asn Gly Ile Trp Ser Thr Glu Ile Leu Lys
                85                  90                  95


Asn Phe Lys Asn Lys Thr Phe Leu Lys Cys Glu Ala Pro Asn Tyr Ser
            100                 105                 110


Gly Arg Phe Thr Cys Ser Trp Leu Val Gln Arg Asn Met Asp Leu Lys
        115                 120                 125


Phe Asn Ile Lys Ser Ser Ser Ser Ser Pro Asp Ser Arg Ala Val Thr
    130                 135                 140


Cys Gly Met Ala Ser Leu Ser Ala Glu Lys Val Thr Leu Asp Gln Arg
145                 150                 155                 160


Asp Tyr Glu Lys Tyr Ser Val Ser Cys Gln Glu Asp Val Thr Cys Pro
                165                 170                 175


Thr Ala Glu Glu Thr Leu Pro Ile Glu Leu Ala Leu Glu Ala Arg Gln
            180                 185                 190
```

```
Gln Asn Lys Tyr Glu Asn Tyr Ser Thr Ser Phe Phe Ile Arg Asp Ile
        195                 200                 205

Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Met Lys Pro Leu Lys Asn
    210                 215                 220

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

His Ser Tyr Phe Ser Leu Lys Phe Phe Val Arg Ile Gln Arg Lys Lys
                245                 250                 255

Glu Lys Met Lys Glu Thr Glu Glu Gly Cys Asn Gln Lys Gly Ala Phe
            260                 265                 270

Leu Val Glu Lys Thr Ser Thr Glu Val Gln Cys Lys Gly Gly Asn Val
        275                 280                 285

Cys Val Gln Ala Gln Asp Arg Tyr Tyr Asn Ser Ser Cys Ser Lys Trp
    290                 295                 300

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

Gly Gly Gly Ser Gly Gly Gly Ser Arg Val Ile Pro Val Ser Gly Pro
                325                 330                 335

Ala Arg Cys Leu Ser Gln Ser Arg Asn Leu Leu Lys Thr Thr Asp Asp
            340                 345                 350

Met Val Lys Thr Ala Arg Glu Lys Leu Lys His Tyr Ser Cys Thr Ala
        355                 360                 365

Glu Asp Ile Asp His Glu Asp Ile Thr Arg Asp Gln Thr Ser Thr Leu
    370                 375                 380

Lys Thr Cys Leu Pro Leu Glu Leu His Lys Asn Glu Ser Cys Leu Ala
```

385 390 395 400

Thr Arg Glu Thr Ser Ser Thr Thr Arg Gly Ser Cys Leu Pro Pro Gln
405 410 415

Lys Thr Ser Leu Met Met Thr Leu Cys Leu Gly Ser Ile Tyr Glu Asp
420 425 430

Leu Lys Met Tyr Gln Thr Glu Phe Gln Ala Ile Asn Ala Ala Leu Gln
435 440 445

Asn His Asn His Gln Gln Ile Ile Leu Asp Lys Gly Met Leu Val Ala
450 455 460

Ile Asp Glu Leu Met Gln Ser Leu Asn His Asn Gly Glu Thr Leu Arg
465 470 475 480

Gln Lys Pro Pro Val Gly Glu Ala Asp Pro Tyr Arg Val Lys Met Lys
485 490 495

Leu Cys Ile Leu Leu His Ala Phe Ser Thr Arg Val Val Thr Ile Asn
500 505 510

Arg Val Met Gly Tyr Leu Ser Ser Ala Gly Ser Gly Gly Gly Ser Glu
515 520 525

Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu Gln
530 535 540

His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys
545 550 555 560

Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp Phe
565 570 575

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser
580 585 590

```
Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg
        595                 600                 605

Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu
    610                 615                 620

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu Pro
625                 630                 635                 640

Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys Glu
                645                 650                 655

Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg Arg
            660                 665                 670

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr
        675                 680                 685

Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys
    690                 695                 700

Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser Ser
705                 710                 715                 720

Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu Arg
                725                 730                 735

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro Asn
            740                 745                 750

Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys Val
        755                 760                 765

Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg
    770                 775                 780

Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser Ser
```

```
785                 790                 795                 800

Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His Cys
                805                 810                 815

Leu Ser Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala Ile
            820                 825                 830

Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu
        835                 840                 845

Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg
    850                 855                 860

His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr
865                 870                 875                 880

Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys
                885                 890                 895

Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro Lys
            900                 905                 910

Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr
        915                 920                 925

Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln
    930                 935                 940

Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg Val
945                 950                 955                 960

Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys Val
                965                 970                 975

Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His Glu
            980                 985                 990
```

```
Lys Thr Pro Val Ser Glu His Val  Thr Lys Cys Cys Ser  Gly Ser Leu
        995                 1000                1005


Val Glu  Arg Arg Pro Cys Phe  Ser Ala Leu Thr Val  Asp Glu Thr
    1010                1015                1020


Tyr Val  Pro Lys Glu Phe Lys  Ala Glu Thr Phe Thr  Phe His Ser
    1025                1030                1035


Asp Ile  Cys Thr Leu Pro Glu  Lys Glu Lys Gln Ile  Lys Lys Gln
    1040                1045                1050


Thr Ala  Leu Ala Glu Leu Val  Lys His Lys Pro Lys  Ala Thr Ala
    1055                1060                1065


Glu Gln  Leu Lys Thr Val Met  Asp Asp Phe Ala Gln  Phe Leu Asp
    1070                1075                1080


Thr Cys  Cys Lys Ala Ala Asp  Lys Asp Thr Cys Phe  Ser Thr Glu
    1085                1090                1095


Gly Pro  Asn Leu Val Thr Arg  Cys Lys Asp Ala Leu  Ala His His
    1100                1105                1110


His His  His His
    1115


<210>  123
<211>  1445
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: IL12-MSA-Lumican

<400>  123

Met Trp Glu Leu Glu Lys Asp Val Tyr Val Val Glu Val Asp Trp Thr
1               5                   10                  15
```

```
Pro Asp Ala Pro Gly Glu Thr Val Asn Leu Thr Cys Asp Thr Pro Glu
            20                  25                  30

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

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

Gln Tyr Thr Cys His Lys Gly Gly Glu Thr Leu Ser His Ser His Leu
65                  70                  75                  80

Leu Leu His Lys Lys Glu Asn Gly Ile Trp Ser Thr Glu Ile Leu Lys
                85                  90                  95

Asn Phe Lys Asn Lys Thr Phe Leu Lys Cys Glu Ala Pro Asn Tyr Ser
            100                 105                 110

Gly Arg Phe Thr Cys Ser Trp Leu Val Gln Arg Asn Met Asp Leu Lys
        115                 120                 125

Phe Asn Ile Lys Ser Ser Ser Ser Ser Pro Asp Ser Arg Ala Val Thr
    130                 135                 140

Cys Gly Met Ala Ser Leu Ser Ala Glu Lys Val Thr Leu Asp Gln Arg
145                 150                 155                 160

Asp Tyr Glu Lys Tyr Ser Val Ser Cys Gln Glu Asp Val Thr Cys Pro
                165                 170                 175

Thr Ala Glu Glu Thr Leu Pro Ile Glu Leu Ala Leu Glu Ala Arg Gln
            180                 185                 190

Gln Asn Lys Tyr Glu Asn Tyr Ser Thr Ser Phe Phe Ile Arg Asp Ile
        195                 200                 205

Ile Lys Pro Asp Pro Pro Lys Asn Leu Gln Met Lys Pro Leu Lys Asn
```

```
    210                 215                 220

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

His Ser Tyr Phe Ser Leu Lys Phe Phe Val Arg Ile Gln Arg Lys Lys
                245                 250                 255

Glu Lys Met Lys Glu Thr Glu Glu Gly Cys Asn Gln Lys Gly Ala Phe
            260                 265                 270

Leu Val Glu Lys Thr Ser Thr Glu Val Gln Cys Lys Gly Gly Asn Val
        275                 280                 285

Cys Val Gln Ala Gln Asp Arg Tyr Tyr Asn Ser Ser Cys Ser Lys Trp
    290                 295                 300

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

Gly Gly Gly Ser Gly Gly Gly Ser Arg Val Ile Pro Val Ser Gly Pro
                325                 330                 335

Ala Arg Cys Leu Ser Gln Ser Arg Asn Leu Leu Lys Thr Thr Asp Asp
            340                 345                 350

Met Val Lys Thr Ala Arg Glu Lys Leu Lys His Tyr Ser Cys Thr Ala
        355                 360                 365

Glu Asp Ile Asp His Glu Asp Ile Thr Arg Asp Gln Thr Ser Thr Leu
    370                 375                 380

Lys Thr Cys Leu Pro Leu Glu Leu His Lys Asn Glu Ser Cys Leu Ala
385                 390                 395                 400

Thr Arg Glu Thr Ser Ser Thr Thr Arg Gly Ser Cys Leu Pro Pro Gln
                405                 410                 415
```

```
Lys Thr Ser Leu Met Met Thr Leu Cys Leu Gly Ser Ile Tyr Glu Asp
            420                 425                 430

Leu Lys Met Tyr Gln Thr Glu Phe Gln Ala Ile Asn Ala Ala Leu Gln
        435                 440                 445

Asn His Asn His Gln Gln Ile Ile Leu Asp Lys Gly Met Leu Val Ala
    450                 455                 460

Ile Asp Glu Leu Met Gln Ser Leu Asn His Asn Gly Glu Thr Leu Arg
465                 470                 475                 480

Gln Lys Pro Pro Val Gly Glu Ala Asp Pro Tyr Arg Val Lys Met Lys
                485                 490                 495

Leu Cys Ile Leu Leu His Ala Phe Ser Thr Arg Val Val Thr Ile Asn
            500                 505                 510

Arg Val Met Gly Tyr Leu Ser Ser Ala Gly Ser Gly Gly Gly Ser Glu
        515                 520                 525

Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu Gln
    530                 535                 540

His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys
545                 550                 555                 560

Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp Phe
                565                 570                 575

Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser
            580                 585                 590

Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg
        595                 600                 605

Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu
```

```
    610                 615                 620

Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu Pro
625                 630                 635                 640

Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys Glu
                645                 650                 655

Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg Arg
            660                 665                 670

His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr
        675                 680                 685

Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys
    690                 695                 700

Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser Ser
705                 710                 715                 720

Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu Arg
                725                 730                 735

Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro Asn
            740                 745                 750

Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys Val
        755                 760                 765

Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg
    770                 775                 780

Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser Ser
785                 790                 795                 800

Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His Cys
                805                 810                 815
```

```
Leu Ser Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala Ile
            820                 825                 830

Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu
        835                 840                 845

Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg
    850                 855                 860

His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr
865                 870                 875                 880

Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys
                885                 890                 895

Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro Lys
            900                 905                 910

Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr
        915                 920                 925

Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln
    930                 935                 940

Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg Val
945                 950                 955                 960

Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys Val
                965                 970                 975

Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His Glu
            980                 985                 990

Lys Thr Pro Val Ser Glu His Val  Thr Lys Cys Cys Ser  Gly Ser Leu
        995                 1000                1005

Val Glu  Arg Arg Pro Cys Phe  Ser Ala Leu Thr Val  Asp Glu Thr
```

```
    1010                1015                1020

Tyr Val  Pro Lys Glu Phe Lys  Ala Glu Thr Phe Thr  Phe His Ser
    1025                1030                1035

Asp Ile  Cys Thr Leu Pro Glu  Lys Glu Lys Gln Ile  Lys Lys Gln
    1040                1045                1050

Thr Ala  Leu Ala Glu Leu Val  Lys His Lys Pro Lys  Ala Thr Ala
    1055                1060                1065

Glu Gln  Leu Lys Thr Val Met  Asp Asp Phe Ala Gln  Phe Leu Asp
    1070                1075                1080

Thr Cys  Cys Lys Ala Ala Asp  Lys Asp Thr Cys Phe  Ser Thr Glu
    1085                1090                1095

Gly Pro  Asn Leu Val Thr Arg  Cys Lys Asp Ala Leu  Ala Gly Gly
    1100                1105                1110

Gly Ser  Gly Gly Gly Ser Gln  Tyr Tyr Asp Tyr Asp  Ile Pro Leu
    1115                1120                1125

Phe Met  Tyr Gly Gln Ile Ser  Pro Asn Cys Ala Pro  Glu Cys Asn
    1130                1135                1140

Cys Pro  His Ser Tyr Pro Thr  Ala Met Tyr Cys Asp  Asp Leu Lys
    1145                1150                1155

Leu Lys  Ser Val Pro Met Val  Pro Pro Gly Ile Lys  Tyr Leu Tyr
    1160                1165                1170

Leu Arg  Asn Asn Gln Ile Asp  His Ile Asp Glu Lys  Ala Phe Glu
    1175                1180                1185

Asn Val  Thr Asp Leu Gln Trp  Leu Ile Leu Asp His  Asn Leu Leu
    1190                1195                1200
```

```
Glu Asn  Ser Lys Ile Lys Gly  Lys Val Phe Ser Lys  Leu Lys Gln
    1205                1210                1215

Leu Lys  Lys Leu His Ile Asn  Tyr Asn Asn Leu Thr  Glu Ser Val
    1220                1225                1230

Gly Pro  Leu Pro Lys Ser Leu  Gln Asp Leu Gln Leu  Thr Asn Asn
    1235                1240                1245

Lys Ile  Ser Lys Leu Gly Ser  Phe Asp Gly Leu Val  Asn Leu Thr
    1250                1255                1260

Phe Ile  Tyr Leu Gln His Asn  Gln Leu Lys Glu Asp  Ala Val Ser
    1265                1270                1275

Ala Ser  Leu Lys Gly Leu Lys  Ser Leu Glu Tyr Leu  Asp Leu Ser
    1280                1285                1290

Phe Asn  Gln Met Ser Lys Leu  Pro Ala Gly Leu Pro  Thr Ser Leu
    1295                1300                1305

Leu Thr  Leu Tyr Leu Asp Asn  Asn Lys Ile Ser Asn  Ile Pro Asp
    1310                1315                1320

Glu Tyr  Phe Lys Arg Phe Thr  Gly Leu Gln Tyr Leu  Arg Leu Ser
    1325                1330                1335

His Asn  Glu Leu Ala Asp Ser  Gly Val Pro Gly Asn  Ser Phe Asn
    1340                1345                1350

Ile Ser  Ser Leu Leu Glu Leu  Asp Leu Ser Tyr Asn  Lys Leu Lys
    1355                1360                1365

Ser Ile  Pro Thr Val Asn Glu  Asn Leu Glu Asn Tyr  Tyr Leu Glu
    1370                1375                1380

Val Asn  Glu Leu Glu Lys Phe  Asp Val Lys Ser Phe  Cys Lys Ile
```

1385 1390 1395

Leu Gly Pro Leu Ser Tyr Ser Lys Ile Lys His Leu Arg Leu Asp
1400 1405 1410

Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro Pro Asp Met Tyr Glu
1415 1420 1425

Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn His His His His
1430 1435 1440

His His
1445

<210> 124
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-GGGS-(H)6

<400> 124

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
20 25 30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys

```
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285
```

```
Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser His His His His His His
                325                 330
```

<210> 125
<211> 330
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican D213A

<400> 125

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110
```

```
Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Ala Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
```

305 310 315 320

Gly Gly Gly Ser His His His His His His
325 330

<210> 126
<211> 918
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-MSA

<400> 126

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
20 25 30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
85 90 95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
100 105 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
115 120 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr

```
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335
```

```
His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
```

```
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735
```

```
Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

His His His His His His
        915
```

<210> 127

<211> 178
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Gluc

<400> 127

```
Lys Pro Thr Glu Asn Asn Glu Asp Phe Asn Ile Val Ala Val Ala Ser
1               5                  10                  15


Asn Phe Ala Thr Thr Asp Leu Asp Ala Asp Arg Gly Lys Leu Pro Gly
            20                  25                  30


Lys Lys Leu Pro Leu Glu Val Leu Lys Glu Met Glu Ala Asn Ala Arg
        35                  40                  45


Lys Ala Gly Cys Thr Arg Gly Cys Leu Ile Cys Leu Ser His Ile Lys
    50                  55                  60


Cys Thr Pro Lys Met Lys Lys Phe Ile Pro Gly Arg Cys His Thr Tyr
65                  70                  75                  80


Glu Gly Asp Lys Glu Ser Ala Gln Gly Gly Ile Gly Glu Ala Ile Val
                85                  90                  95


Asp Ile Pro Glu Ile Pro Gly Phe Lys Asp Leu Glu Pro Met Glu Gln
            100                 105                 110


Phe Ile Ala Gln Val Asp Leu Cys Val Asp Cys Thr Thr Gly Cys Leu
        115                 120                 125


Lys Gly Leu Ala Asn Val Gln Cys Ser Asp Leu Leu Lys Lys Trp Leu
    130                 135                 140


Pro Gln Arg Cys Ala Thr Phe Ala Ser Lys Ile Gln Gly Gln Val Asp
145                 150                 155                 160


Lys Ile Lys Gly Ala Gly Gly Asp Gly Gly Gly Ser His His His His
```

165 170 175

His His

<210> 128
<211> 510
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-Gluc

<400> 128

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
20 25 30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
85 90 95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
100 105 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
115 120 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr

```
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Lys Pro Thr Glu
                325                 330                 335
```

```
Asn Asn Glu Asp Phe Asn Ile Val Ala Val Ala Ser Asn Phe Ala Thr
            340                 345                 350

Thr Asp Leu Asp Ala Asp Arg Gly Lys Leu Pro Gly Lys Lys Leu Pro
        355                 360                 365

Leu Glu Val Leu Lys Glu Met Glu Ala Asn Ala Arg Lys Ala Gly Cys
    370                 375                 380

Thr Arg Gly Cys Leu Ile Cys Leu Ser His Ile Lys Cys Thr Pro Lys
385                 390                 395                 400

Met Lys Lys Phe Ile Pro Gly Arg Cys His Thr Tyr Glu Gly Asp Lys
                405                 410                 415

Glu Ser Ala Gln Gly Gly Ile Gly Glu Ala Ile Val Asp Ile Pro Glu
            420                 425                 430

Ile Pro Gly Phe Lys Asp Leu Glu Pro Met Glu Gln Phe Ile Ala Gln
        435                 440                 445

Val Asp Leu Cys Val Asp Cys Thr Thr Gly Cys Leu Lys Gly Leu Ala
    450                 455                 460

Asn Val Gln Cys Ser Asp Leu Leu Lys Lys Trp Leu Pro Gln Arg Cys
465                 470                 475                 480

Ala Thr Phe Ala Ser Lys Ile Gln Gly Gln Val Asp Lys Ile Lys Gly
                485                 490                 495

Ala Gly Gly Asp Gly Gly Gly Ser His His His His His His
            500                 505                 510
```

<210> 129
<211> 504
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CNA35-Gluc

<400> 129

Ala Arg Asp Ile Ser Ser Thr Asn Val Thr Asp Leu Thr Val Ser Pro
1   5   10   15

Ser Lys Ile Glu Asp Gly Gly Lys Thr Thr Val Lys Met Thr Phe Asp
            20   25   30

Asp Lys Asn Gly Lys Ile Gln Asn Gly Asp Met Ile Lys Val Ala Trp
        35   40   45

Pro Thr Ser Gly Thr Val Lys Ile Glu Gly Tyr Ser Lys Thr Val Pro
    50   55   60

Leu Thr Val Lys Gly Glu Gln Val Gly Gln Ala Val Ile Thr Pro Asp
65   70   75   80

Gly Ala Thr Ile Thr Phe Asn Asp Lys Val Glu Lys Leu Ser Asp Val
                85   90   95

Ser Gly Phe Ala Glu Phe Glu Val Gln Gly Arg Asn Leu Thr Gln Thr
            100   105   110

Asn Thr Ser Asp Asp Lys Val Ala Thr Ile Thr Ser Gly Asn Lys Ser
        115   120   125

Thr Asn Val Thr Val His Lys Ser Glu Ala Gly Thr Ser Ser Val Phe
    130   135   140

Tyr Tyr Lys Thr Gly Asp Met Leu Pro Glu Asp Thr Thr His Val Arg
145   150   155   160

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

Thr Ile Lys Asp Gln Ile Gln Gly Gly Gln Gln Leu Asp Leu Ser Thr

```
            180                 185                 190

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

Ser Ala Ile Thr Asp Phe Glu Lys Ala Phe Pro Gly Ser Lys Ile Thr
    210                 215                 220

Val Asp Asn Thr Lys Asn Thr Ile Asp Val Thr Ile Pro Gln Gly Tyr
225                 230                 235                 240

Gly Ser Tyr Asn Ser Phe Ser Ile Asn Tyr Lys Thr Lys Ile Thr Asn
                245                 250                 255

Glu Gln Gln Lys Glu Phe Val Asn Asn Ser Gln Ala Trp Tyr Gln Glu
            260                 265                 270

His Gly Lys Glu Glu Val Asn Gly Lys Ser Phe Asn His Thr Val His
        275                 280                 285

Asn Ile Asn Ala Asn Ala Gly Ile Glu Gly Thr Val Lys Gly Glu Leu
    290                 295                 300

Lys Val Leu Lys Gln Asp Lys Asp Thr Lys Gly Gly Gly Ser Gly Gly
305                 310                 315                 320

Gly Ser Gly Gly Gly Ser Lys Pro Thr Glu Asn Asn Glu Asp Phe Asn
                325                 330                 335

Ile Val Ala Val Ala Ser Asn Phe Ala Thr Thr Asp Leu Asp Ala Asp
            340                 345                 350

Arg Gly Lys Leu Pro Gly Lys Lys Leu Pro Leu Glu Val Leu Lys Glu
        355                 360                 365

Met Glu Ala Asn Ala Arg Lys Ala Gly Cys Thr Arg Gly Cys Leu Ile
    370                 375                 380
```

```
Cys Leu Ser His Ile Lys Cys Thr Pro Lys Met Lys Lys Phe Ile Pro
385                 390                 395                 400


Gly Arg Cys His Thr Tyr Glu Gly Asp Lys Glu Ser Ala Gln Gly Gly
                405                 410                 415


Ile Gly Glu Ala Ile Val Asp Ile Pro Glu Ile Pro Gly Phe Lys Asp
            420                 425                 430


Leu Glu Pro Met Glu Gln Phe Ile Ala Gln Val Asp Leu Cys Val Asp
        435                 440                 445


Cys Thr Thr Gly Cys Leu Lys Gly Leu Ala Asn Val Gln Cys Ser Asp
    450                 455                 460


Leu Leu Lys Lys Trp Leu Pro Gln Arg Cys Ala Thr Phe Ala Ser Lys
465                 470                 475                 480


Ile Gln Gly Gln Val Asp Lys Ile Lys Gly Ala Gly Gly Asp Gly Gly
                485                 490                 495


Gly Ser His His His His His His
            500


<210>  130
<211>  422
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: ColG s3a/s3b-Gluc

<400>  130

Pro Ile Thr Lys Glu Met Glu Pro Asn Asp Asp Ile Lys Glu Ala Asn
1               5                   10                  15


Gly Pro Ile Val Glu Gly Val Thr Val Lys Gly Asp Leu Asn Gly Ser
            20                  25                  30
```

```
Asp Asp Ala Asp Thr Phe Tyr Phe Asp Val Lys Glu Asp Gly Asp Val
        35                  40                  45

Thr Ile Glu Leu Pro Tyr Ser Gly Ser Ser Asn Phe Thr Trp Leu Val
    50                  55                  60

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

Asn Asn Ser Lys Val Gly Thr Phe Lys Ser Thr Lys Gly Arg His Tyr
                85                  90                  95

Val Phe Ile Tyr Lys His Asp Ser Ala Ser Asn Ile Ser Tyr Ser Leu
            100                 105                 110

Asn Ile Lys Gly Leu Gly Asn Glu Lys Leu Lys Glu Lys Glu Asn Asn
        115                 120                 125

Asp Ser Ser Asp Lys Ala Thr Val Ile Pro Asn Phe Asn Thr Thr Met
    130                 135                 140

Gln Gly Ser Leu Leu Gly Asp Asp Ser Arg Asp Tyr Tyr Ser Phe Glu
145                 150                 155                 160

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

Phe Gly Val Thr Trp Thr Leu His Pro Glu Ser Asn Ile Asn Asp Arg
            180                 185                 190

Ile Thr Tyr Gly Gln Val Asp Gly Asn Lys Val Ser Asn Lys Val Lys
        195                 200                 205

Leu Arg Pro Gly Lys Tyr Tyr Leu Leu Val Tyr Lys Tyr Ser Gly Ser
    210                 215                 220

Gly Asn Tyr Glu Leu Arg Val Asn Gly Gly Gly Ser Gly Gly Gly Ser
```

```
225                 230                 235                 240

Gly Gly Gly Ser Lys Pro Thr Glu Asn Asn Glu Asp Phe Asn Ile Val
                245                 250                 255

Ala Val Ala Ser Asn Phe Ala Thr Thr Asp Leu Asp Ala Asp Arg Gly
            260                 265                 270

Lys Leu Pro Gly Lys Lys Leu Pro Leu Glu Val Leu Lys Glu Met Glu
        275                 280                 285

Ala Asn Ala Arg Lys Ala Gly Cys Thr Arg Gly Cys Leu Ile Cys Leu
    290                 295                 300

Ser His Ile Lys Cys Thr Pro Lys Met Lys Lys Phe Ile Pro Gly Arg
305                 310                 315                 320

Cys His Thr Tyr Glu Gly Asp Lys Glu Ser Ala Gln Gly Gly Ile Gly
                325                 330                 335

Glu Ala Ile Val Asp Ile Pro Glu Ile Pro Gly Phe Lys Asp Leu Glu
            340                 345                 350

Pro Met Glu Gln Phe Ile Ala Gln Val Asp Leu Cys Val Asp Cys Thr
        355                 360                 365

Thr Gly Cys Leu Lys Gly Leu Ala Asn Val Gln Cys Ser Asp Leu Leu
    370                 375                 380

Lys Lys Trp Leu Pro Gln Arg Cys Ala Thr Phe Ala Ser Lys Ile Gln
385                 390                 395                 400

Gly Gln Val Asp Lys Ile Lys Gly Ala Gly Gly Asp Gly Gly Gly Ser
                405                 410                 415

His His His His His His
            420
```

<210> 131
<211> 301
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ColH_s3-Gluc

<400> 131

```
Gly Thr Glu Lys Glu Pro Asn Asn Ser Lys Glu Thr Ala Ser Gly Pro
1               5                   10                  15


Ile Val Pro Gly Ile Pro Val Ser Gly Thr Ile Glu Asn Thr Ser Asp
            20                  25                  30


Gln Asp Tyr Phe Tyr Phe Asp Val Ile Thr Pro Gly Glu Val Lys Ile
        35                  40                  45


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


Glu Asn Asn Asn Ala Val Ser Tyr Ala Thr Asp Asp Gly Gln Asn Leu
65                  70                  75                  80


Ser Gly Lys Phe Lys Ala Asp Lys Pro Gly Arg Tyr Tyr Ile His Leu
                85                  90                  95


Tyr Met Phe Asn Gly Ser Tyr Met Pro Tyr Arg Ile Asn Ile Glu Gly
            100                 105                 110


Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Lys Pro Thr Glu Asn
        115                 120                 125


Asn Glu Asp Phe Asn Ile Val Ala Val Ala Ser Asn Phe Ala Thr Thr
    130                 135                 140


Asp Leu Asp Ala Asp Arg Gly Lys Leu Pro Gly Lys Lys Leu Pro Leu
145                 150                 155                 160
```

```
Glu Val Leu Lys Glu Met Glu Ala Asn Ala Arg Lys Ala Gly Cys Thr
                165                 170                 175

Arg Gly Cys Leu Ile Cys Leu Ser His Ile Lys Cys Thr Pro Lys Met
            180                 185                 190

Lys Lys Phe Ile Pro Gly Arg Cys His Thr Tyr Glu Gly Asp Lys Glu
        195                 200                 205

Ser Ala Gln Gly Gly Ile Gly Glu Ala Ile Val Asp Ile Pro Glu Ile
    210                 215                 220

Pro Gly Phe Lys Asp Leu Glu Pro Met Glu Gln Phe Ile Ala Gln Val
225                 230                 235                 240

Asp Leu Cys Val Asp Cys Thr Thr Gly Cys Leu Lys Gly Leu Ala Asn
                245                 250                 255

Val Gln Cys Ser Asp Leu Leu Lys Lys Trp Leu Pro Gln Arg Cys Ala
            260                 265                 270

Thr Phe Ala Ser Lys Ile Gln Gly Gln Val Asp Lys Ile Lys Gly Ala
        275                 280                 285

Gly Gly Asp Gly Gly Gly Ser His His His His His His
    290                 295                 300
```

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

<220>
<223> Synthetic: PLGF2 HBD-Gluc

<400> 132

```
Arg Arg Arg Pro Lys Gly Arg Gly Lys Arg Arg Arg Glu Lys Gln Arg
1               5                   10                  15
```

```
Pro Thr Asp Ser His Leu Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly
            20                  25                  30

Gly Ser Lys Pro Thr Glu Asn Asn Glu Asp Phe Asn Ile Val Ala Val
        35                  40                  45

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

Pro Gly Lys Lys Leu Pro Leu Glu Val Leu Lys Glu Met Glu Ala Asn
65                  70                  75                  80

Ala Arg Lys Ala Gly Cys Thr Arg Gly Cys Leu Ile Cys Leu Ser His
                85                  90                  95

Ile Lys Cys Thr Pro Lys Met Lys Lys Phe Ile Pro Gly Arg Cys His
            100                 105                 110

Thr Tyr Glu Gly Asp Lys Glu Ser Ala Gln Gly Gly Ile Gly Glu Ala
        115                 120                 125

Ile Val Asp Ile Pro Glu Ile Pro Gly Phe Lys Asp Leu Glu Pro Met
    130                 135                 140

Glu Gln Phe Ile Ala Gln Val Asp Leu Cys Val Asp Cys Thr Thr Gly
145                 150                 155                 160

Cys Leu Lys Gly Leu Ala Asn Val Gln Cys Ser Asp Leu Leu Lys Lys
                165                 170                 175

Trp Leu Pro Gln Arg Cys Ala Thr Phe Ala Ser Lys Ile Gln Gly Gln
            180                 185                 190

Val Asp Lys Ile Lys Gly Ala Gly Gly Asp Gly Gly Gly Ser His His
        195                 200                 205

His His His His
```

210

<210> 133
<211> 1181
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 4M5.3-MSA-Lumican

<400> 133

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


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


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


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


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


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


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


Lys Ser Ser Ala Asp Asp Ala Lys Lys Asp Ala Ala Lys Lys Asp Asp
        115                 120                 125


Ala Lys Lys Asp Asp Ala Lys Lys Asp Gly Gly Val Lys Leu Asp Glu
    130                 135                 140


Thr Gly Gly Gly Leu Val Gln Pro Gly Gly Ala Met Lys Leu Ser Cys
```

```
145                 150                 155                 160

Val Thr Ser Gly Phe Thr Phe Gly His Tyr Trp Met Asn Trp Val Arg
                165                 170                 175

Gln Ser Pro Glu Lys Gly Leu Glu Trp Val Ala Gln Phe Arg Asn Lys
            180                 185                 190

Pro Tyr Asn Tyr Glu Thr Tyr Tyr Ser Asp Ser Val Lys Gly Arg Phe
        195                 200                 205

Thr Ile Ser Arg Asp Asp Ser Lys Ser Ser Val Tyr Leu Gln Met Asn
    210                 215                 220

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

Tyr Gly Met Glu Tyr Leu Gly Gln Gly Thr Ser Val Thr Val Ser Gly
                245                 250                 255

Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp
            260                 265                 270

Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln
        275                 280                 285

Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu
    290                 295                 300

Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn
305                 310                 315                 320

Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile
                325                 330                 335

Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys
            340                 345                 350
```

```
Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn
        355                 360                 365

Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr
    370                 375                 380

Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu
385                 390                 395                 400

Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr
                405                 410                 415

Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp
            420                 425                 430

Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala
        435                 440                 445

Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys
    450                 455                 460

Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln
465                 470                 475                 480

Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp
                485                 490                 495

Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys
            500                 505                 510

Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala
        515                 520                 525

Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys
    530                 535                 540

Lys Ala His Cys Leu Ser Glu Val Glu His Asp Thr Met Pro Ala Asp
```

```
545                 550                 555                 560

Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys
                565                 570                 575

Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu
            580                 585                 590

Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu
        595                 600                 605

Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn
    610                 615                 620

Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val
625                 630                 635                 640

Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys
                645                 650                 655

Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln
            660                 665                 670

Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn
        675                 680                 685

Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg
    690                 695                 700

Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys
705                 710                 715                 720

Leu Leu His Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys
                725                 730                 735

Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe Ser Ala Leu Thr Val
            740                 745                 750
```

```
Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe
        755                 760                 765

His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys
    770                 775                 780

Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala
785                 790                 795                 800

Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr
                805                 810                 815

Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro
            820                 825                 830

Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala Gly Gly Gly Ser Gly
        835                 840                 845

Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly
    850                 855                 860

Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr
865                 870                 875                 880

Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met
                885                 890                 895

Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp
            900                 905                 910

His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu
        915                 920                 925

Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val
    930                 935                 940

Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn
```

```
945                 950                 955                 960

Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln
                965                 970                 975

Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val
            980                 985                 990

Asn Leu Thr Phe Ile Tyr Leu Gln  His Asn Gln Leu Lys  Glu Asp Ala
        995                 1000                1005

Val Ser  Ala Ser Leu Lys Gly  Leu Lys Ser Leu Glu  Tyr Leu Asp
    1010                1015                1020

Leu Ser  Phe Asn Gln Met Ser  Lys Leu Pro Ala Gly  Leu Pro Thr
    1025                1030                1035

Ser Leu  Leu Thr Leu Tyr Leu  Asp Asn Asn Lys Ile  Ser Asn Ile
    1040                1045                1050

Pro Asp  Glu Tyr Phe Lys Arg  Phe Thr Gly Leu Gln  Tyr Leu Arg
    1055                1060                1065

Leu Ser  His Asn Glu Leu Ala  Asp Ser Gly Val Pro  Gly Asn Ser
    1070                1075                1080

Phe Asn  Ile Ser Ser Leu Leu  Glu Leu Asp Leu Ser  Tyr Asn Lys
    1085                1090                1095

Leu Lys  Ser Ile Pro Thr Val  Asn Glu Asn Leu Glu  Asn Tyr Tyr
    1100                1105                1110

Leu Glu  Val Asn Glu Leu Glu  Lys Phe Asp Val Lys  Ser Phe Cys
    1115                1120                1125

Lys Ile  Leu Gly Pro Leu Ser  Tyr Ser Lys Ile Lys  His Leu Arg
    1130                1135                1140
```

Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro Pro Asp Met
    1145   1150   1155

Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn Gly Gly
    1160   1165   1170

Gly Ser His His His His His His
    1175   1180

<210> 134
<211> 989
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Ss07d-MSA-Lumican

<400> 134

Ala Thr Val Lys Phe Lys Tyr Lys Gly Glu Glu Lys Gln Val Asp Ile
1   5   10   15

Ser Lys Ile Tyr Leu Val Leu Arg Leu Gly Lys Phe Ile Tyr Phe Tyr
            20   25   30

Tyr Asp Leu Gly Gly Gly Lys Leu Gly Leu Gly His Val Ser Glu Lys
        35   40   45

Asp Ala Pro Lys Glu Leu Leu Gln Met Leu Glu Lys Gln Lys Lys Gly
    50   55   60

Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp
65   70   75   80

Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln
                85   90   95

Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu
            100   105   110

```
Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn
        115                 120                 125

Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile
    130                 135                 140

Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys
145                 150                 155                 160

Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn
                165                 170                 175

Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr
            180                 185                 190

Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu
        195                 200                 205

Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr
    210                 215                 220

Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp
225                 230                 235                 240

Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala
                245                 250                 255

Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys
            260                 265                 270

Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln
        275                 280                 285

Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp
    290                 295                 300

Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys
```

```
305                 310                 315                 320

Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala
                325                 330                 335

Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys
            340                 345                 350

Lys Ala His Cys Leu Ser Glu Val Glu His Asp Thr Met Pro Ala Asp
        355                 360                 365

Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys
    370                 375                 380

Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu
385                 390                 395                 400

Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu
                405                 410                 415

Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn
            420                 425                 430

Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val
        435                 440                 445

Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys
    450                 455                 460

Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln
465                 470                 475                 480

Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn
                485                 490                 495

Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg
            500                 505                 510
```

```
Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys
        515                 520                 525

Leu Leu His Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys
    530                 535                 540

Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe Ser Ala Leu Thr Val
545                 550                 555                 560

Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe
                565                 570                 575

His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys
            580                 585                 590

Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala
        595                 600                 605

Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr
    610                 615                 620

Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro
625                 630                 635                 640

Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala Gly Gly Gly Ser Gly
                645                 650                 655

Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly
            660                 665                 670

Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr
        675                 680                 685

Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met
    690                 695                 700

Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp
```

```
705                 710                 715                 720

His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu
                725                 730                 735

Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val
            740                 745                 750

Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn
        755                 760                 765

Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln
    770                 775                 780

Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val
785                 790                 795                 800

Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala
                805                 810                 815

Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu
            820                 825                 830

Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu
        835                 840                 845

Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu
    850                 855                 860

Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn
865                 870                 875                 880

Glu Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser
                885                 890                 895

Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr
            900                 905                 910
```

```
Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu
        915                 920                 925


Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr
    930                 935                 940


Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser
945                 950                 955                 960


Ser Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile
                965                 970                 975


Thr Val Asn Gly Gly Gly Ser His His His His His His
            980                 985
```

<210> 135
<211> 1063
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: ZZ-MSA Lumican

<400> 135

```
Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp Leu Pro
1               5                   10                  15


Gly Ala Arg Cys Ala Val Asp Asn Lys Phe Asn Lys Glu Gln Gln Asn
            20                  25                  30


Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Asn Glu Glu Gln Arg
        35                  40                  45


Asn Ala Phe Ile Gln Ser Leu Lys Asp Asp Pro Ser Gln Ser Ala Asn
    50                  55                  60


Leu Leu Ala Glu Ala Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys Val
65                  70                  75                  80
```

```
Asp Asn Lys Phe Asn Lys Glu Gln Gln Asn Ala Phe Tyr Glu Ile Leu
                85                  90                  95

His Leu Pro Asn Leu Asn Glu Glu Gln Arg Asn Ala Phe Ile Gln Ser
            100                 105                 110

Leu Lys Asp Asp Pro Ser Gln Ser Ala Asn Leu Leu Ala Glu Ala Lys
        115                 120                 125

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

Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe
145                 150                 155                 160

Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser
                165                 170                 175

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

Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His
        195                 200                 205

Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn
    210                 215                 220

Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn
225                 230                 235                 240

Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe
                245                 250                 255

Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro
            260                 265                 270

Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg Arg His Pro
```

```
        275                 280                 285

Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu
    290                 295                 300

Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr
305                 310                 315                 320

Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg
                325                 330                 335

Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe
            340                 345                 350

Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp
        355                 360                 365

Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys
    370                 375                 380

Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu
385                 390                 395                 400

Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu
                405                 410                 415

Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser
            420                 425                 430

Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala
        435                 440                 445

Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys
    450                 455                 460

Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro
465                 470                 475                 480
```

```
Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala
                485                 490                 495

Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly
            500                 505                 510

Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu
        515                 520                 525

Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe
    530                 535                 540

Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser
545                 550                 555                 560

Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr
                565                 570                 575

Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp
            580                 585                 590

Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr
        595                 600                 605

Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu
    610                 615                 620

Arg Arg Pro Cys Phe Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro
625                 630                 635                 640

Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr
                645                 650                 655

Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu
            660                 665                 670

Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val
```

```
        675                 680                 685

Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp
    690                 695                 700

Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys
705                 710                 715                 720

Lys Asp Ala Leu Ala Gly Gly Gly Ser Gly Gly Gly Ser Gln Tyr Tyr
                725                 730                 735

Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser Pro Asn Cys
            740                 745                 750

Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala Met Tyr Cys
        755                 760                 765

Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro Gly Ile Lys
    770                 775                 780

Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp Glu Lys Ala
785                 790                 795                 800

Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp His Asn Leu
                805                 810                 815

Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys Leu Lys Gln
            820                 825                 830

Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu Ser Val Gly
        835                 840                 845

Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn Asn Lys Ile
    850                 855                 860

Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr Phe Ile Tyr
865                 870                 875                 880
```

```
Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala Ser Leu Lys
               885                 890                 895


Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn Gln Met Ser
            900                 905                 910


Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu Tyr Leu Asp
        915                 920                 925


Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys Arg Phe Thr
    930                 935                 940


Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala Asp Ser Gly
945                 950                 955                 960


Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu Leu Asp Leu
               965                 970                 975


Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val Asn Glu Asn Leu Glu
            980                 985                 990


Asn Tyr Tyr Leu Glu Val Asn Glu  Leu Glu Lys Phe Asp  Val Lys Ser
        995                 1000                1005


Phe Cys  Lys Ile Leu Gly Pro  Leu Ser Tyr Ser Lys  Ile Lys His
    1010                1015                1020


Leu Arg  Leu Asp Gly Asn Pro  Leu Thr Gln Ser Ser  Leu Pro Pro
    1025                1030                1035


Asp Met  Tyr Glu Cys Leu Arg  Val Ala Asn Glu Ile  Thr Val Asn
    1040                1045                1050


Gly Gly  Gly Ser His His His  His His His
    1055                1060
```

<210> 136

<211> 937
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-MSA-FcIII4C

<400> 136

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
20 25 30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
85 90 95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
100 105 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
115 120 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
130 135 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145 150 155 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn

```
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365
```

```
Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
```

```
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765
```

```
Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser Cys Asp Cys Ala Trp His Leu Gly Glu Leu Val Trp
        915                 920                 925

Cys Thr Cys His His His His His His
    930                 935
```

<210> 137
<211> 1012
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-MSA-Fn3

<400> 137

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                  10                  15


Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30


Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45


Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60


Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80


His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95


Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110


Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125


Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140


Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160


Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175


Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
```

```
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380
```

```
Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
```

```
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780
```

```
Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser Val Ser Asp Val Pro Arg Asp Leu Glu Val Val Ala
        915                 920                 925

Ala Thr Pro Thr Ser Leu Leu Ile Ser Trp Cys Cys Ser Asp Asn Cys
    930                 935                 940

Ser Asn Ser Tyr Arg Ile Thr Tyr Gly Glu Thr Gly Gly Asn Ser Pro
945                 950                 955                 960

Val Gln Glu Phe Thr Val Pro Arg Ser Cys Phe Met Ala Thr Ile Ser
                965                 970                 975

Gly Leu Lys Pro Gly Val Asp Tyr Thr Ile Thr Ala Tyr Ala Val Thr
```

```
            980                 985                 990


Asp Ser Asn Gly Pro His Pro Ile  Ser Ile Asn Tyr Arg  Thr His His
        995                 1000                1005


His His  His His
    1010


<210>  138
<211>  1047
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: Lumican-MSA-SpG2

<400>  138

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15


Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30


Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45


Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60


Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80


His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95


Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110


Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
```

```
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320
```

```
Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
               325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
               405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
               485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
```

```
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720
```

```
Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser Thr Tyr Lys Leu Val Ile Asn Gly Lys Thr Leu Lys
```

```
        915                 920                 925

Gly Glu Thr Thr Thr Glu Ala Val Asp Ala Ala Thr Ala Glu Lys Val
    930                 935                 940

Phe Lys Gln Tyr Ala Asn Asp Tyr Gly Val Asp Gly Glu Trp Thr Tyr
945                 950                 955                 960

Asp Asp Ala Thr Lys Thr Phe Thr Val Thr Glu Lys Pro Glu Val Ile
                965                 970                 975

Asp Ala Ser Glu Leu Thr Pro Ala Val Thr Thr Tyr Lys Leu Val Ile
            980                 985                 990

Asn Gly Lys Thr Leu Lys Gly Glu  Thr Thr Thr Lys Ala  Val Asp Ala
        995                 1000                1005

Glu Thr  Ala Glu Lys Ala Phe  Lys Gln Tyr Ala Asn  Asp Tyr Gly
    1010                1015                1020

Val Asp  Gly Val Trp Thr Tyr  Asp Asp Ala Thr Lys  Thr Phe Thr
    1025                1030                1035

Val Thr  Glu His His His His  His His
    1040                1045
```

<210> 139
<211> 926
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican-MSA-RRGW

<400> 139

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
```

```
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220
```

```
Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
```

```
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620
```

```
Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
```

```
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser Arg Arg Gly Trp His His His His His His
        915                 920                 925


<210>  140
<211>  926
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: Lumican-MSA-WGRR

<400>  140

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
```

```
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

```
Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
```

```
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655
```

```
Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
```

```
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser Trp Gly Arg Arg His His His His His His
        915                 920                 925


<210>  141
<211>  219
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: 4420 LC  murine kappa chain

<400>  141

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

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

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

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

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

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
```

```
                85                  90                  95

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

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
        115                 120                 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145                 150                 155                 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
            180                 185                 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
        195                 200                 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
    210                 215


<210>  142
<211>  787
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: 4220 HC-Lumican (LALA-PG)

<400>  142

Asp Val Lys Leu Asp Glu Thr Gly Gly Gly Leu Val Gln Pro Gly Arg
1               5                   10                  15

Pro Met Lys Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Asp Tyr
```

```
            20                  25                  30

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

Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr Glu Thr Tyr Tyr Ser Asp
    50                  55                  60

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

Val Tyr Leu Gln Met Asn Asn Leu Arg Val Glu Asp Met Gly Ile Tyr
                85                  90                  95

Tyr Cys Thr Gly Ser Tyr Tyr Gly Met Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Ser Val Thr Val Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
        115                 120                 125

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

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

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

Gly Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Asn Thr Trp
            180                 185                 190

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

Lys Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr Gln Asn Pro
    210                 215                 220
```

```
Cys Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp Ala Ala
225                 230                 235                 240

Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu
                245                 250                 255

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

Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu
        275                 280                 285

Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr
    290                 295                 300

Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser
305                 310                 315                 320

Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Gly Ser Pro
                325                 330                 335

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

Val Tyr Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe
        355                 360                 365

Ser Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile Ala Val
    370                 375                 380

Asp Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala
385                 390                 395                 400

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

Val Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val
```

```
            420                 425                 430

Val His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr Ile Ser Arg
        435                 440                 445

Ser Leu Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
    450                 455                 460

Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly
465                 470                 475                 480

Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr
                485                 490                 495

Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met
            500                 505                 510

Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp
        515                 520                 525

His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu
    530                 535                 540

Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val
545                 550                 555                 560

Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn
                565                 570                 575

Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln
            580                 585                 590

Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val
        595                 600                 605

Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala
    610                 615                 620
```

```
Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu
625                 630                 635                 640


Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu
                645                 650                 655


Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu
            660                 665                 670


Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn
        675                 680                 685


Glu Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser
    690                 695                 700


Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr
705                 710                 715                 720


Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu
                725                 730                 735


Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr
            740                 745                 750


Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser
        755                 760                 765


Ser Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile
    770                 775                 780


Thr Val Asn
785
```

<210> 143
<211> 452
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 4220 HC mIgG2c

<400> 143

```
Asp Val Lys Leu Asp Glu Thr Gly Gly Gly Leu Val Gln Pro Gly Arg
1               5                   10                  15


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


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


Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr Glu Thr Tyr Tyr Ser Asp
    50                  55                  60


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


Val Tyr Leu Gln Met Asn Asn Leu Arg Val Glu Asp Met Gly Ile Tyr
                85                  90                  95


Tyr Cys Thr Gly Ser Tyr Tyr Gly Met Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110


Ser Val Thr Val Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
        115                 120                 125


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


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


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


Gly Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Asn Thr Trp
```

```
            180                 185                 190

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

Lys Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr Gln Asn Pro
    210                 215                 220

Cys Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp Ala Ala
225                 230                 235                 240

Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu
                245                 250                 255

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

Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu
        275                 280                 285

Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr
    290                 295                 300

Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser
305                 310                 315                 320

Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Gly Ser Pro
                325                 330                 335

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

Val Tyr Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe
        355                 360                 365

Ser Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile Ala Val
    370                 375                 380
```

```
Asp Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala
385                 390                 395                 400


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


Val Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val
            420                 425                 430


Val His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr Ile Ser Arg
        435                 440                 445


Ser Leu Gly Lys
    450
```

<210> 144
<211> 233
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 3/23 LC murine kappa

<400> 144

```
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1               5                   10                  15


Gly Ser Thr Gly Asp Thr Val Leu Thr Gln Ser Pro Ala Leu Ala Val
            20                  25                  30


Ser Pro Gly Glu Arg Val Thr Ile Ser Cys Arg Ala Ser Glu Ser Val
        35                  40                  45


Ser Thr Arg Met His Trp Tyr Gln Gln Arg Pro Gly Gln Pro Pro Lys
    50                  55                  60


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

```
Phe Ser Gly Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Pro
                85                  90                  95


Val Glu Ala Asn Asp Thr Ala Thr Tyr Phe Cys Gln Gln Ser Trp Asn
            100                 105                 110


Asp Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg Ala
        115                 120                 125


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


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


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


Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr
            180                 185                 190


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


Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile
    210                 215                 220


Val Lys Ser Phe Asn Arg Asn Glu Cys
225                 230


<210>  145
<211>  805
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: 3/23 HC-lumican

<400>  145
```

```
Met Asp Ile Trp Leu Ser Leu Val Phe Leu Val Leu Phe Ile Lys Gly
1               5                  10                  15

Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln
            20                  25                  30

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

Ser Asp Tyr Tyr Met Ala Trp Val Arg Gln Ala Pro Lys Lys Gly Leu
    50                  55                  60

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

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

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

Tyr Tyr Cys Val Arg His Asp Asn Tyr Phe Asp Tyr Trp Gly Gln Gly
        115                 120                 125

Val Leu Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr
    130                 135                 140

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

Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp
                165                 170                 175

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

Gln Ser Gly Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Asn
```

```
        195                 200                 205

Thr Trp Pro Ser Gln Thr Ile Thr Cys Asn Val Ala His Pro Ala Ser
    210                 215                 220

Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr Gln
225                 230                 235                 240

Asn Pro Cys Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp
                245                 250                 255

Ala Ala Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp
            260                 265                 270

Val Leu Met Ile Ser Leu Ser Pro Met Val Thr Cys Val Val Val Asp
        275                 280                 285

Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn
    290                 295                 300

Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn
305                 310                 315                 320

Ser Thr Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp
                325                 330                 335

Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Gly
            340                 345                 350

Ser Pro Ile Glu Lys Thr Ile Ser Lys Pro Arg Gly Pro Val Arg Ala
        355                 360                 365

Pro Gln Val Tyr Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys
    370                 375                 380

Glu Phe Ser Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile
385                 390                 395                 400
```

```
Ala Val Asp Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn
                405                 410                 415

Thr Ala Thr Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys
            420                 425                 430

Leu Arg Val Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys
        435                 440                 445

Ser Val Val His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr Ile
    450                 455                 460

Ser Arg Ser Leu Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
465                 470                 475                 480

Gly Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met
                485                 490                 495

Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His
            500                 505                 510

Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val
        515                 520                 525

Pro Met Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln
    530                 535                 540

Ile Asp His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln
545                 550                 555                 560

Trp Leu Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly
                565                 570                 575

Lys Val Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr
            580                 585                 590

Asn Asn Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp
```

```
        595                 600                 605

Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly
    610                 615                 620

Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu
625                 630                 635                 640

Asp Ala Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu
                645                 650                 655

Asp Leu Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr
            660                 665                 670

Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro
        675                 680                 685

Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser
    690                 695                 700

His Asn Glu Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile
705                 710                 715                 720

Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile
                725                 730                 735

Pro Thr Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu
            740                 745                 750

Leu Glu Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu
        755                 760                 765

Ser Tyr Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr
    770                 775                 780

Gln Ser Ser Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn
785                 790                 795                 800
```

Glu Ile Thr Val Asn
805

<210> 146
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LOB12.3 LC murine kappa

<400> 146

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

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

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

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

Ser Ser Ser Gly Ser Gln Tyr Ser Leu Lys Ile Ser Arg Leu Gln Val
65 70 75 80

Glu Asp Ile Gly Ile Tyr Tyr Cys Leu Gln Ala Tyr Gly Ala Pro Trp
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala
100 105 110

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

```
Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145                 150                 155                 160


Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
                165                 170                 175


Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
            180                 185                 190


Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
        195                 200                 205


Phe Asn Arg Asn Glu Cys
    210


<210>  147
<211>  790
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: LOB12.3 HC- Lumican

<400>  147

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


Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Tyr Phe
            20                  25                  30


Asp Met Ala Trp Val Arg Gln Ala Pro Thr Lys Gly Leu Glu Trp Val
        35                  40                  45


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


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

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

Ala Arg Arg Ser Tyr Gly Gly Tyr Ser Glu Ile Asp Tyr Trp Gly Gln
            100                 105                 110

Gly Val Met Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val
        115                 120                 125

Tyr Pro Leu Ala Pro Val Cys Gly Gly Thr Thr Gly Ser Ser Val Thr
    130                 135                 140

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

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

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

Asn Thr Trp Pro Ser Gln Thr Ile Thr Cys Asn Val Ala His Pro Ala
        195                 200                 205

Ser Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr
    210                 215                 220

Gln Asn Pro Cys Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro
225                 230                 235                 240

Asp Ala Ala Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys
                245                 250                 255

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

Asp Val Ser Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn
```

```
        275                 280                 285

Asn Val Glu Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr
    290                 295                 300

Asn Ser Thr Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp
305                 310                 315                 320

Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu
                325                 330                 335

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

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

Lys Glu Phe Ser Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu
    370                 375                 380

Ile Ala Val Asp Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys
385                 390                 395                 400

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

Lys Leu Arg Val Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala
            420                 425                 430

Cys Ser Val Val His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr
        435                 440                 445

Ile Ser Arg Ser Leu Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly
    450                 455                 460

Ser Gly Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe
465                 470                 475                 480
```

```
Met Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro
                485                 490                 495

His Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser
            500                 505                 510

Val Pro Met Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn
        515                 520                 525

Gln Ile Asp His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu
    530                 535                 540

Gln Trp Leu Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys
545                 550                 555                 560

Gly Lys Val Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn
                565                 570                 575

Tyr Asn Asn Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln
            580                 585                 590

Asp Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp
        595                 600                 605

Gly Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys
    610                 615                 620

Glu Asp Ala Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr
625                 630                 635                 640

Leu Asp Leu Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro
                645                 650                 655

Thr Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile
            660                 665                 670

Pro Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu
```

```
        675                 680                 685

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

Ile Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser
705                 710                 715                 720

Ile Pro Thr Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn
                725                 730                 735

Glu Leu Glu Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro
            740                 745                 750

Leu Ser Tyr Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu
        755                 760                 765

Thr Gln Ser Ser Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala
    770                 775                 780

Asn Glu Ile Thr Val Asn
785                 790
```

<210> 148
<211> 219
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: OX86 LC murine kappa

<400> 148

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

Glu Ser Ala Ser Ile Thr Cys Arg Ser Ser Gln Ser Leu Val Tyr Lys
            20                  25                  30

Asp Gly Gln Thr Tyr Leu Asn Trp Phe Leu Gln Arg Pro Gly Gln Ser
```

```
        35                  40                  45

Pro Gln Leu Leu Thr Tyr Trp Met Ser Thr Arg Ala Ser Gly Val Ser
    50                  55                  60

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

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

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

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
        115                 120                 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
    130                 135                 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
145                 150                 155                 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
                165                 170                 175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
            180                 185                 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
        195                 200                 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
    210                 215
```

<210> 149
<211> 787
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: OX86 HC-Lumican

<400> 149

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


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


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


Gly Arg Met Arg Tyr Asp Gly Asp Thr Tyr Tyr Asn Ser Val Leu Lys
    50                  55                  60


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


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


Arg Asp Gly Arg Gly Asp Ser Phe Asp Tyr Trp Gly Gln Gly Val Met
            100                 105                 110


Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
        115                 120                 125


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


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


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

```
Gly Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Asn Thr Trp
            180                 185                 190

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

Lys Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr Gln Asn Pro
    210                 215                 220

Cys Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp Ala Ala
225                 230                 235                 240

Gly Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu
                245                 250                 255

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

Glu Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu
        275                 280                 285

Val His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr
    290                 295                 300

Leu Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser
305                 310                 315                 320

Gly Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Gly Ser Pro
                325                 330                 335

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

Val Tyr Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe
        355                 360                 365

Ser Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile Ala Val
```

```
    370                 375                 380

Asp Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala
385                 390                 395                 400

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

Val Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val
            420                 425                 430

Val His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr Ile Ser Arg
        435                 440                 445

Ser Leu Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
    450                 455                 460

Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly
465                 470                 475                 480

Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr
                485                 490                 495

Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met
            500                 505                 510

Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp
        515                 520                 525

His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu
    530                 535                 540

Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val
545                 550                 555                 560

Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn
                565                 570                 575
```

```
Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln
            580                 585                 590

Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val
        595                 600                 605

Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala
    610                 615                 620

Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu
625                 630                 635                 640

Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu
                645                 650                 655

Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu
            660                 665                 670

Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn
        675                 680                 685

Glu Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser
    690                 695                 700

Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr
705                 710                 715                 720

Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu
                725                 730                 735

Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr
            740                 745                 750

Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser
        755                 760                 765

Ser Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile
```

770 775 780

Thr Val Asn
785

<210> 150
<211> 215
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 2C11 LC murine kappa

<400> 150

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

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

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

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

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

Glu Asp Ile Gly Ser Tyr Tyr Cys Gln Gln Tyr Tyr Asn Tyr Pro Trp
85 90 95

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

Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser
115 120 125

Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp

```
    130                 135                 140

Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val
145                 150                 155                 160

Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met
                165                 170                 175

Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser
            180                 185                 190

Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys
        195                 200                 205

Ser Phe Asn Arg Asn Glu Cys
    210                 215


<210>  151
<211>  786
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: 2C11 HC- lumican

<400>  151

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

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

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

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

Lys Gly Arg Phe Thr Val Ser Arg Asp Asn Ala Lys Asn Leu Leu Phe
```

```
65                  70                  75                  80

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

Ala Arg Phe Asp Trp Asp Lys Asn Tyr Trp Gly Gln Gly Thr Met Val
            100                 105                 110

Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala
        115                 120                 125

Pro Val Cys Gly Gly Thr Thr Gly Ser Ser Val Thr Leu Gly Cys Leu
    130                 135                 140

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

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

Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Asn Thr Trp Pro
            180                 185                 190

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

Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr Gln Asn Pro Cys
    210                 215                 220

Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp Ala Ala Gly
225                 230                 235                 240

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

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

```
Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val
        275                 280                 285

His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu
    290                 295                 300

Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly
305                 310                 315                 320

Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Gly Ser Pro Ile
                325                 330                 335

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

Tyr Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser
        355                 360                 365

Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile Ala Val Asp
    370                 375                 380

Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr
385                 390                 395                 400

Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val
                405                 410                 415

Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val
            420                 425                 430

His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr Ile Ser Arg Ser
        435                 440                 445

Leu Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
    450                 455                 460

Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln
```

```
465                 470                 475                 480

Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro
                485                 490                 495

Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val
            500                 505                 510

Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His
        515                 520                 525

Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile
    530                 535                 540

Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe
545                 550                 555                 560

Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu
                565                 570                 575

Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu
            580                 585                 590

Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn
        595                 600                 605

Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val
    610                 615                 620

Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser
625                 630                 635                 640

Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu
                645                 650                 655

Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr
            660                 665                 670
```

```
Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu
        675                 680                 685


Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu
    690                 695                 700


Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val
705                 710                 715                 720


Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys
                725                 730                 735


Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser
            740                 745                 750


Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser
        755                 760                 765


Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr
    770                 775                 780


Val Asn
785


<210>  152
<211>  25
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: T2A peptide (furin cleavage site  GSG  T2A)

<400>  152

Arg Arg Lys Arg Gly Ser Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys
1               5                   10                  15


Gly Asp Val Glu Glu Asn Pro Gly Pro
            20                  25
```

<210> 153
<211> 411
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL3- Lumican

<400> 153

```
Ala Pro Tyr Gly Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Ser
1               5                   10                  15


Arg Lys Ile Pro Arg Gln Phe Ile Val Asp Tyr Phe Glu Thr Ser Ser
            20                  25                  30


Leu Cys Ser Gln Pro Gly Val Ile Phe Leu Thr Lys Arg Asn Arg Gln
        35                  40                  45


Ile Cys Ala Asp Ser Lys Glu Thr Trp Val Gln Glu Tyr Ile Thr Asp
    50                  55                  60


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


Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile
                85                  90                  95


Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr
            100                 105                 110


Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro
        115                 120                 125


Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile
    130                 135                 140


Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu
145                 150                 155                 160
```

```
Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser
                165                 170                 175

Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr
            180                 185                 190

Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr
        195                 200                 205

Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu
    210                 215                 220

Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser
225                 230                 235                 240

Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe
                245                 250                 255

Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr
            260                 265                 270

Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe
        275                 280                 285

Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu
    290                 295                 300

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

Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val Asn
                325                 330                 335

Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe
            340                 345                 350

Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys
```

```
        355                 360                 365

Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu
    370                 375                 380

Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val
385                 390                 395                 400

Asn Gly Gly Gly Ser His His His His His His
                405                 410
```

<210> 154
<211> 411
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican CCL3

<400> 154

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
```

```
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300
```

```
Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320


Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ala Pro Tyr Gly
                325                 330                 335


Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Ser Arg Lys Ile Pro
            340                 345                 350


Arg Gln Phe Ile Val Asp Tyr Phe Glu Thr Ser Ser Leu Cys Ser Gln
        355                 360                 365


Pro Gly Val Ile Phe Leu Thr Lys Arg Asn Arg Gln Ile Cys Ala Asp
    370                 375                 380


Ser Lys Glu Thr Trp Val Gln Glu Tyr Ile Thr Asp Leu Glu Leu Asn
385                 390                 395                 400


Ala Gly Gly Gly Ser His His His His His His
                405                 410


<210>  155
<211>  79
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: CCL3

<400>  155

Ala Pro Tyr Gly Ala Asp Thr Pro Thr Ala Cys Cys Phe Ser Tyr Ser
1               5                   10                  15


Arg Lys Ile Pro Arg Gln Phe Ile Val Asp Tyr Phe Glu Thr Ser Ser
            20                  25                  30


Leu Cys Ser Gln Pro Gly Val Ile Phe Leu Thr Lys Arg Asn Arg Gln
        35                  40                  45
```

Ile Cys Ala Asp Ser Lys Glu Thr Trp Val Gln Glu Tyr Ile Thr Asp
    50   55   60

Leu Glu Leu Asn Ala Gly Gly Gly Ser His His His His His His
65   70   75

<210> 156
<211> 411
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL4- lumican

<400> 156

Ala Pro Met Gly Ser Asp Pro Pro Thr Ser Cys Cys Phe Ser Tyr Thr
1   5   10   15

Ser Arg Gln Leu His Arg Ser Phe Val Met Asp Tyr Tyr Glu Thr Ser
            20   25   30

Ser Leu Cys Ser Lys Pro Ala Val Val Phe Leu Thr Lys Arg Gly Arg
        35   40   45

Gln Ile Cys Ala Asn Pro Ser Glu Pro Trp Val Thr Glu Tyr Met Ser
    50   55   60

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

Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile
                85   90   95

Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr
            100   105   110

Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro
        115   120   125

```
Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile
    130                 135                 140

Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu
145                 150                 155                 160

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

Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr
            180                 185                 190

Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr
        195                 200                 205

Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu
    210                 215                 220

Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser
225                 230                 235                 240

Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe
                245                 250                 255

Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr
            260                 265                 270

Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe
        275                 280                 285

Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu
    290                 295                 300

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

Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val Asn
```

```
                325                 330                 335

Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe
            340                 345                 350

Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys
        355                 360                 365

Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu
    370                 375                 380

Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val
385                 390                 395                 400

Asn Gly Gly Gly Ser His His His His His His
                405                 410


<210>  157
<211>  411
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: Lumican  CCL4

<400>  157

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
```

```
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270
```

```
Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ala Pro Met Gly
                325                 330                 335

Ser Asp Pro Pro Thr Ser Cys Cys Phe Ser Tyr Thr Ser Arg Gln Leu
            340                 345                 350

His Arg Ser Phe Val Met Asp Tyr Tyr Glu Thr Ser Ser Leu Cys Ser
        355                 360                 365

Lys Pro Ala Val Val Phe Leu Thr Lys Arg Gly Arg Gln Ile Cys Ala
    370                 375                 380

Asn Pro Ser Glu Pro Trp Val Thr Glu Tyr Met Ser Asp Leu Glu Leu
385                 390                 395                 400

Asn Gly Gly Gly Ser His His His His His His
                405                 410
```

<210> 158
<211> 79
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL4

<400> 158

```
Ala Pro Met Gly Ser Asp Pro Pro Thr Ser Cys Cys Phe Ser Tyr Thr
1               5                   10                  15
```

Ser Arg Gln Leu His Arg Ser Phe Val Met Asp Tyr Tyr Glu Thr Ser
            20   25   30

Ser Leu Cys Ser Lys Pro Ala Val Val Phe Leu Thr Lys Arg Gly Arg
        35   40   45

Gln Ile Cys Ala Asn Pro Ser Glu Pro Trp Val Thr Glu Tyr Met Ser
    50   55   60

Asp Leu Glu Leu Asn Gly Gly Gly Ser His His His His His His
65   70   75

<210> 159
<211> 410
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL5- lumican

<400> 159

Ser Pro Tyr Gly Ser Asp Thr Thr Pro Cys Cys Phe Ala Tyr Leu Ser
1   5   10   15

Leu Ala Leu Pro Arg Ala His Val Lys Glu Tyr Phe Tyr Thr Ser Ser
            20   25   30

Lys Cys Ser Asn Leu Ala Val Val Phe Val Thr Arg Arg Asn Arg Gln
        35   40   45

Val Cys Ala Asn Pro Glu Lys Lys Trp Val Gln Glu Tyr Ile Asn Tyr
    50   55   60

Leu Glu Met Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
65   70   75   80

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
                85   90   95

```
Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            100                 105                 110

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        115                 120                 125

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    130                 135                 140

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
145                 150                 155                 160

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                165                 170                 175

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            180                 185                 190

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        195                 200                 205

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    210                 215                 220

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
225                 230                 235                 240

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                245                 250                 255

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            260                 265                 270

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        275                 280                 285

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
```

```
    290                 295                 300

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
305                 310                 315                 320

Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val Asn Glu
                325                 330                 335

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            340                 345                 350

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        355                 360                 365

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    370                 375                 380

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
385                 390                 395                 400

Gly Gly Gly Ser His His His His His His
                405                 410
```

<210> 160
<211> 410
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican CCL5

<400> 160

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
```

```
        35                  40                  45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240
```

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ser Pro Tyr Gly
                325                 330                 335

Ser Asp Thr Thr Pro Cys Cys Phe Ala Tyr Leu Ser Leu Ala Leu Pro
            340                 345                 350

Arg Ala His Val Lys Glu Tyr Phe Tyr Thr Ser Ser Lys Cys Ser Asn
        355                 360                 365

Leu Ala Val Val Phe Val Thr Arg Arg Asn Arg Gln Val Cys Ala Asn
    370                 375                 380

Pro Glu Lys Lys Trp Val Gln Glu Tyr Ile Asn Tyr Leu Glu Met Ser
385                 390                 395                 400

Gly Gly Gly Ser His His His His His His
                405                 410
```

<210> 161
<211> 78
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL5

<400> 161

Ser Pro Tyr Gly Ser Asp Thr Thr Pro Cys Cys Phe Ala Tyr Leu Ser
1   5   10   15

Leu Ala Leu Pro Arg Ala His Val Lys Glu Tyr Phe Tyr Thr Ser Ser
            20   25   30

Lys Cys Ser Asn Leu Ala Val Val Phe Val Thr Arg Arg Asn Arg Gln
        35   40   45

Val Cys Ala Asn Pro Glu Lys Lys Trp Val Gln Glu Tyr Ile Asn Tyr
    50   55   60

Leu Glu Met Ser Gly Gly Gly Ser His His His His His His
65   70   75

<210> 162
<211> 425
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL19-Lumican

<400> 162

Gly Ala Asn Asp Ala Glu Asp Cys Cys Leu Ser Val Thr Gln Arg Pro
1   5   10   15

Ile Pro Gly Asn Ile Val Lys Ala Phe Arg Tyr Leu Leu Asn Glu Asp
            20   25   30

Gly Cys Arg Val Pro Ala Val Val Phe Thr Thr Leu Arg Gly Tyr Gln
        35   40   45

Leu Cys Ala Pro Pro Asp Gln Pro Trp Val Asp Arg Ile Ile Arg Arg
    50   55   60

```
Leu Lys Lys Ser Ser Ala Lys Asn Lys Gly Asn Ser Thr Arg Arg Ser
65                  70                  75                  80

Pro Val Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gln
                85                  90                  95

Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser Pro
            100                 105                 110

Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala Met
        115                 120                 125

Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro Gly
    130                 135                 140

Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp Glu
145                 150                 155                 160

Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp His
                165                 170                 175

Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys Leu
            180                 185                 190

Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu Ser
        195                 200                 205

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

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

Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala Ser
                245                 250                 255

Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn Gln
```

```
            260                 265                 270

Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu Tyr
        275                 280                 285

Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys Arg
    290                 295                 300

Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala Asp
305                 310                 315                 320

Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu Leu
                325                 330                 335

Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val Asn Glu Asn
            340                 345                 350

Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp Val
        355                 360                 365

Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile Lys
    370                 375                 380

His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro Pro
385                 390                 395                 400

Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn Gly
                405                 410                 415

Gly Gly Ser His His His His His His
            420                 425
```

<210> 163
<211> 424
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican CCL19

<400> 163

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15


Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30


Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45


Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60


Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80


His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95


Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110


Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125


Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140


Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160


Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175


Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190
```

```
Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Gly Ala Asn Asp Ala
                325                 330                 335

Glu Asp Cys Cys Leu Ser Val Thr Gln Arg Pro Ile Pro Gly Asn Ile
            340                 345                 350

Val Lys Ala Phe Arg Tyr Leu Leu Asn Glu Asp Gly Cys Arg Val Pro
        355                 360                 365

Ala Val Val Phe Thr Thr Leu Arg Gly Tyr Gln Leu Cys Ala Pro Pro
    370                 375                 380

Asp Gln Pro Trp Val Asp Arg Ile Ile Arg Arg Leu Lys Lys Ser Ser
```

385 390 395 400

Ala Lys Asn Lys Gly Asn Ser Thr Arg Arg Ser Pro Val Ser Gly Gly
405 410 415

Gly Ser His His His His His His
420

<210> 164
<211> 93
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL19

<400> 164

Gly Ala Asn Asp Ala Glu Asp Cys Cys Leu Ser Val Thr Gln Arg Pro
1 5 10 15

Ile Pro Gly Asn Ile Val Lys Ala Phe Arg Tyr Leu Leu Asn Glu Asp
20 25 30

Gly Cys Arg Val Pro Ala Val Val Phe Thr Thr Leu Arg Gly Tyr Gln
35 40 45

Leu Cys Ala Pro Pro Asp Gln Pro Trp Val Asp Arg Ile Ile Arg Arg
50 55 60

Leu Lys Lys Ser Ser Ala Lys Asn Lys Gly Asn Ser Thr Arg Arg Ser
65 70 75 80

Pro Val Ser Gly Gly Gly Ser His His His His His His
85 90

<210> 165
<211> 452
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL21c - Lumican

<400> 165

Ser Asp Gly Gly Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys
1   5   10   15

Ile Pro Tyr Ser Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu
            20   25   30

Gly Cys Pro Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys His Ser Lys
        35   40   45

Pro Glu Leu Cys Ala Asn Pro Glu Glu Gly Trp Val Gln Asn Leu Met
    50   55   60

Arg Arg Leu Asp Gln Pro Pro Ala Pro Gly Lys Gln Ser Pro Gly Cys
65   70   75   80

Arg Lys Asn Arg Gly Thr Ser Lys Ser Gly Lys Lys Gly Lys Gly Ser
                85   90   95

Lys Gly Cys Lys Arg Thr Glu Gln Thr Gln Pro Ser Arg Gly Gly Gly
            100   105   110

Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp
        115   120   125

Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro Glu
    130   135   140

Cys Asn Cys Pro His Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp Leu
145   150   155   160

Lys Leu Lys Ser Val Pro Met Val Pro Pro Gly Ile Lys Tyr Leu Tyr
                165   170   175

Leu Arg Asn Asn Gln Ile Asp His Ile Asp Glu Lys Ala Phe Glu Asn

```
            180                 185                 190

Val Thr Asp Leu Gln Trp Leu Ile Leu Asp His Asn Leu Leu Glu Asn
        195                 200                 205

Ser Lys Ile Lys Gly Lys Val Phe Ser Lys Leu Lys Gln Leu Lys Lys
    210                 215                 220

Leu His Ile Asn Tyr Asn Asn Leu Thr Glu Ser Val Gly Pro Leu Pro
225                 230                 235                 240

Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys Leu
                245                 250                 255

Gly Ser Phe Asp Gly Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln His
            260                 265                 270

Asn Gln Leu Lys Glu Asp Ala Val Ser Ala Ser Leu Lys Gly Leu Lys
        275                 280                 285

Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn Gln Met Ser Lys Leu Pro
    290                 295                 300

Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn Lys
305                 310                 315                 320

Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu Gln
                325                 330                 335

Tyr Leu Arg Leu Ser His Asn Glu Leu Ala Asp Ser Gly Val Pro Gly
            340                 345                 350

Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn
        355                 360                 365

Lys Leu Lys Ser Ile Pro Thr Val Asn Glu Asn Leu Glu Asn Tyr Tyr
    370                 375                 380
```

```
Leu Glu Val Asn Glu Leu Glu Lys Phe Asp Val Lys Ser Phe Cys Lys
385                 390                 395                 400


Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile Lys His Leu Arg Leu Asp
                405                 410                 415


Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro Pro Asp Met Tyr Glu Cys
            420                 425                 430


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


His His His His
    450


<210>  166
<211>  451
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: Lumican  CCL21c

<400>  166

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15


Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30


Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45


Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60


Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80
```

```
His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
```

```
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Asp Gly Gly Gly
                325                 330                 335

Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys Ile Pro Tyr Ser Ile
            340                 345                 350

Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu Gly Cys Pro Ile Pro
        355                 360                 365

Ala Ile Leu Phe Leu Pro Arg Lys His Ser Lys Pro Glu Leu Cys Ala
    370                 375                 380

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

Pro Pro Ala Pro Gly Lys Gln Ser Pro Gly Cys Arg Lys Asn Arg Gly
                405                 410                 415

Thr Ser Lys Ser Gly Lys Lys Gly Lys Gly Ser Lys Gly Cys Lys Arg
            420                 425                 430

Thr Glu Gln Thr Gln Pro Ser Arg Gly Gly Gly Gly Ser His His His
        435                 440                 445

His His His
    450
```

<210> 167
<211> 120
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: CCL21c

<400> 167

Ser Asp Gly Gly Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys
1 5 10 15

Ile Pro Tyr Ser Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu
20 25 30

Gly Cys Pro Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys His Ser Lys
35 40 45

Pro Glu Leu Cys Ala Asn Pro Glu Glu Gly Trp Val Gln Asn Leu Met
50 55 60

Arg Arg Leu Asp Gln Pro Pro Ala Pro Gly Lys Gln Ser Pro Gly Cys
65 70 75 80

Arg Lys Asn Arg Gly Thr Ser Lys Ser Gly Lys Lys Gly Lys Gly Ser
85 90 95

Lys Gly Cys Lys Arg Thr Glu Gln Thr Gln Pro Ser Arg Gly Gly Gly
100 105 110

Gly Ser His His His His His His
115 120

<210> 168
<211> 417
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: truncated CCL21c-Lumican

<400> 168

Ser Asp Gly Gly Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys

```
1               5                   10                  15

Ile Pro Tyr Ser Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu
            20                  25                  30

Gly Cys Pro Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys His Ser Lys
        35                  40                  45

Pro Glu Leu Cys Ala Asn Pro Glu Glu Gly Trp Val Gln Asn Leu Met
    50                  55                  60

Arg Arg Leu Asp Gln Pro Pro Ala Pro Gly Lys Gly Gly Gly Ser Gly
65                  70                  75                  80

Gly Gly Ser Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu
                85                  90                  95

Phe Met Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys
            100                 105                 110

Pro His Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys
        115                 120                 125

Ser Val Pro Met Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn
    130                 135                 140

Asn Gln Ile Asp His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp
145                 150                 155                 160

Leu Gln Trp Leu Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile
                165                 170                 175

Lys Gly Lys Val Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile
            180                 185                 190

Asn Tyr Asn Asn Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu
        195                 200                 205
```

```
Gln Asp Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe
    210                 215                 220

Asp Gly Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu
225                 230                 235                 240

Lys Glu Asp Ala Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu
                245                 250                 255

Tyr Leu Asp Leu Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu
            260                 265                 270

Pro Thr Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn
        275                 280                 285

Ile Pro Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg
    290                 295                 300

Leu Ser His Asn Glu Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe
305                 310                 315                 320

Asn Ile Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys
                325                 330                 335

Ser Ile Pro Thr Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val
            340                 345                 350

Asn Glu Leu Glu Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly
        355                 360                 365

Pro Leu Ser Tyr Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro
    370                 375                 380

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

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

405 410 415

His

<210> 169
<211> 417
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican truncated CCL21c

<400> 169

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
20 25 30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
85 90 95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
100 105 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
115 120 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr

```
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Ser Asp Gly Gly
                325                 330                 335
```

```
Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys Ile Pro Tyr Ser
            340                 345                 350

Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu Gly Cys Pro Ile
        355                 360                 365

Pro Ala Ile Leu Phe Leu Pro Arg Lys His Ser Lys Pro Glu Leu Cys
    370                 375                 380

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

Gln Pro Pro Ala Pro Gly Lys Gly Gly Gly Ser His His His His His
                405                 410                 415

His
```

<210> 170
<211> 85
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: truncated CCL21c

<400> 170

```
Ser Asp Gly Gly Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys
1               5                   10                  15

Ile Pro Tyr Ser Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu
            20                  25                  30

Gly Cys Pro Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys His Ser Lys
        35                  40                  45

Pro Glu Leu Cys Ala Asn Pro Glu Glu Gly Trp Val Gln Asn Leu Met
    50                  55                  60
```

Arg Arg Leu Asp Gln Pro Pro Ala Pro Gly Lys Gly Gly Gly Ser His
65 70 75 80

His His His His His
85

<210> 171
<211> 84
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL11

<400> 171

His Pro Gly Ser Ile Pro Thr Ser Cys Cys Phe Ile Met Thr Ser Lys
1 5 10 15

Lys Ile Pro Asn Thr Leu Leu Lys Ser Tyr Lys Arg Ile Thr Asn Asn
20 25 30

Arg Cys Thr Leu Lys Ala Ile Val Phe Lys Thr Arg Leu Gly Lys Glu
35 40 45

Ile Cys Ala Asp Pro Lys Lys Lys Trp Val Gln Asp Ala Thr Lys His
50 55 60

Leu Asp Gln Lys Leu Gln Thr Pro Lys Pro Gly Gly Gly Ser His His
65 70 75 80

His His His His

<210> 172
<211> 416
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CCL11 Lumican

<400> 172

```
His Pro Gly Ser Ile Pro Thr Ser Cys Cys Phe Ile Met Thr Ser Lys
1               5                  10                  15


Lys Ile Pro Asn Thr Leu Leu Lys Ser Tyr Lys Arg Ile Thr Asn Asn
            20                  25                  30


Arg Cys Thr Leu Lys Ala Ile Val Phe Lys Thr Arg Leu Gly Lys Glu
        35                  40                  45


Ile Cys Ala Asp Pro Lys Lys Lys Trp Val Gln Asp Ala Thr Lys His
    50                  55                  60


Leu Asp Gln Lys Leu Gln Thr Pro Lys Pro Gly Gly Gly Ser Gly Gly
65                  70                  75                  80


Gly Ser Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe
                85                  90                  95


Met Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro
            100                 105                 110


His Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser
        115                 120                 125


Val Pro Met Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn
    130                 135                 140


Gln Ile Asp His Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu
145                 150                 155                 160


Gln Trp Leu Ile Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys
                165                 170                 175


Gly Lys Val Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn
            180                 185                 190
```

```
Tyr Asn Asn Leu Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln
        195                 200                 205

Asp Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp
    210                 215                 220

Gly Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys
225                 230                 235                 240

Glu Asp Ala Val Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr
                245                 250                 255

Leu Asp Leu Ser Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro
            260                 265                 270

Thr Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile
        275                 280                 285

Pro Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu
    290                 295                 300

Ser His Asn Glu Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn
305                 310                 315                 320

Ile Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser
                325                 330                 335

Ile Pro Thr Val Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn
            340                 345                 350

Glu Leu Glu Lys Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro
        355                 360                 365

Leu Ser Tyr Ser Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu
    370                 375                 380

Thr Gln Ser Ser Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala
```

385 390 395 400

Asn Glu Ile Thr Val Asn Gly Gly Gly Ser His His His His His His
405 410 415

<210> 173
<211> 1107
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: CLEC2- MSA- lumican

<400> 173

Gln Gln Lys Tyr Leu Leu Ala Glu Lys Glu Asn Leu Ser Ala Thr Leu
1 5 10 15

Gln Gln Leu Ala Lys Lys Phe Cys Gln Glu Leu Ile Arg Gln Ser Glu
20 25 30

Ile Lys Thr Lys Ser Thr Phe Glu His Lys Cys Ser Pro Cys Ala Thr
35 40 45

Lys Trp Arg Tyr His Gly Asp Ser Cys Tyr Gly Phe Phe Arg Arg Asn
50 55 60

Leu Thr Trp Glu Glu Ser Lys Gln Tyr Cys Thr Glu Gln Asn Ala Thr
65 70 75 80

Leu Val Lys Thr Ala Ser Gln Ser Thr Leu Asp Tyr Ile Ala Glu Arg
85 90 95

Ile Thr Ser Val Arg Trp Ile Gly Leu Ser Arg Gln Asn Ser Lys Lys
100 105 110

Asp Trp Met Trp Glu Asp Ser Ser Val Leu Arg Lys Asn Gly Ile Asn
115 120 125

Leu Ser Gly Asn Thr Glu Glu Asn Met Asn Cys Ala Tyr Leu His Asn

```
    130                 135                 140

Gly Lys Ile His Pro Ala Ser Cys Lys Glu Arg His Tyr Leu Ile Cys
145                 150                 155                 160

Glu Arg Asn Ala Gly Met Thr Arg Val Asp Gln Leu Leu Gly Gly Gly
                165                 170                 175

Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile
            180                 185                 190

Ala His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val
        195                 200                 205

Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His
    210                 215                 220

Ala Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala
225                 230                 235                 240

Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly
                245                 250                 255

Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu
            260                 265                 270

Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu
        275                 280                 285

Gln His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu
    290                 295                 300

Ala Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met
305                 310                 315                 320

Gly His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala
                325                 330                 335
```

```
Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln
            340                 345                 350

Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp
        355                 360                 365

Gly Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys
    370                 375                 380

Cys Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala
385                 390                 395                 400

Val Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile
                405                 410                 415

Thr Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His
            420                 425                 430

Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr
        435                 440                 445

Met Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys
    450                 455                 460

Asp Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His
465                 470                 475                 480

Asp Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu
                485                 490                 495

Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu
            500                 505                 510

Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val
        515                 520                 525

Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys
```

```
    530                 535                 540

Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala
545                 550                 555                 560

Glu Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn
                565                 570                 575

Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile
            580                 585                 590

Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu
        595                 600                 605

Val Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr
    610                 615                 620

Leu Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala
625                 630                 635                 640

Ile Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu
                645                 650                 655

His Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys
            660                 665                 670

Phe Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys
        675                 680                 685

Ala Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys
    690                 695                 700

Glu Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His
705                 710                 715                 720

Lys Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe
                725                 730                 735
```

```
Ala Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys
            740                 745                 750

Phe Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu
        755                 760                 765

Ala Gly Gly Gly Ser Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile
    770                 775                 780

Pro Leu Phe Met Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro Glu Cys
785                 790                 795                 800

Asn Cys Pro His Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp Leu Lys
                805                 810                 815

Leu Lys Ser Val Pro Met Val Pro Pro Gly Ile Lys Tyr Leu Tyr Leu
            820                 825                 830

Arg Asn Asn Gln Ile Asp His Ile Asp Glu Lys Ala Phe Glu Asn Val
        835                 840                 845

Thr Asp Leu Gln Trp Leu Ile Leu Asp His Asn Leu Leu Glu Asn Ser
    850                 855                 860

Lys Ile Lys Gly Lys Val Phe Ser Lys Leu Lys Gln Leu Lys Lys Leu
865                 870                 875                 880

His Ile Asn Tyr Asn Asn Leu Thr Glu Ser Val Gly Pro Leu Pro Lys
                885                 890                 895

Ser Leu Gln Asp Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys Leu Gly
            900                 905                 910

Ser Phe Asp Gly Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln His Asn
        915                 920                 925

Gln Leu Lys Glu Asp Ala Val Ser Ala Ser Leu Lys Gly Leu Lys Ser
```

```
    930                 935                 940

Leu Glu Tyr Leu Asp Leu Ser Phe Asn Gln Met Ser Lys Leu Pro Ala
945                 950                 955                 960

Gly Leu Pro Thr Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn Lys Ile
                965                 970                 975

Ser Asn Ile Pro Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu Gln Tyr
            980                 985                 990

Leu Arg Leu Ser His Asn Glu Leu  Ala Asp Ser Gly Val  Pro Gly Asn
        995                 1000                1005

Ser Phe  Asn Ile Ser Ser Leu  Leu Glu Leu Asp Leu  Ser Tyr Asn
    1010                1015                1020

Lys Leu  Lys Ser Ile Pro Thr  Val Asn Glu Asn Leu  Glu Asn Tyr
    1025                1030                1035

Tyr Leu  Glu Val Asn Glu Leu  Glu Lys Phe Asp Val  Lys Ser Phe
    1040                1045                1050

Cys Lys  Ile Leu Gly Pro Leu  Ser Tyr Ser Lys Ile  Lys His Leu
    1055                1060                1065

Arg Leu  Asp Gly Asn Pro Leu  Thr Gln Ser Ser Leu  Pro Pro Asp
    1070                1075                1080

Met Tyr  Glu Cys Leu Arg Val  Ala Asn Glu Ile Thr  Val Asn Gly
    1085                1090                1095

Gly Gly  Ser His His His His  His His
    1100                1105
```

<210> 174
<211> 775
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic: CLEC2- MSA

<400> 174

```
Gln Gln Lys Tyr Leu Leu Ala Glu Lys Glu Asn Leu Ser Ala Thr Leu
1               5                   10                  15


Gln Gln Leu Ala Lys Lys Phe Cys Gln Glu Leu Ile Arg Gln Ser Glu
            20                  25                  30


Ile Lys Thr Lys Ser Thr Phe Glu His Lys Cys Ser Pro Cys Ala Thr
        35                  40                  45


Lys Trp Arg Tyr His Gly Asp Ser Cys Tyr Gly Phe Phe Arg Arg Asn
    50                  55                  60


Leu Thr Trp Glu Glu Ser Lys Gln Tyr Cys Thr Glu Gln Asn Ala Thr
65                  70                  75                  80


Leu Val Lys Thr Ala Ser Gln Ser Thr Leu Asp Tyr Ile Ala Glu Arg
                85                  90                  95


Ile Thr Ser Val Arg Trp Ile Gly Leu Ser Arg Gln Asn Ser Lys Lys
            100                 105                 110


Asp Trp Met Trp Glu Asp Ser Ser Val Leu Arg Lys Asn Gly Ile Asn
        115                 120                 125


Leu Ser Gly Asn Thr Glu Glu Asn Met Asn Cys Ala Tyr Leu His Asn
    130                 135                 140


Gly Lys Ile His Pro Ala Ser Cys Lys Glu Arg His Tyr Leu Ile Cys
145                 150                 155                 160


Glu Arg Asn Ala Gly Met Thr Arg Val Asp Gln Leu Leu Gly Gly Gly
                165                 170                 175
```

```
Ser Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile
            180                 185                 190

Ala His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val
        195                 200                 205

Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His
    210                 215                 220

Ala Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala
225                 230                 235                 240

Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly
                245                 250                 255

Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu
            260                 265                 270

Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu
        275                 280                 285

Gln His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu
    290                 295                 300

Ala Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met
305                 310                 315                 320

Gly His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala
                325                 330                 335

Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln
            340                 345                 350

Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp
        355                 360                 365

Gly Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys
```

```
    370                 375                 380

Cys Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala
385                 390                 395                 400

Val Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile
                405                 410                 415

Thr Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His
            420                 425                 430

Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr
        435                 440                 445

Met Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys
    450                 455                 460

Asp Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His
465                 470                 475                 480

Asp Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu
                485                 490                 495

Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu
            500                 505                 510

Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val
        515                 520                 525

Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys
    530                 535                 540

Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala
545                 550                 555                 560

Glu Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn
                565                 570                 575
```

```
Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile
            580                 585                 590

Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu
        595                 600                 605

Val Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr
    610                 615                 620

Leu Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala
625                 630                 635                 640

Ile Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu
                645                 650                 655

His Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys
            660                 665                 670

Phe Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys
        675                 680                 685

Ala Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys
    690                 695                 700

Glu Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His
705                 710                 715                 720

Lys Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe
                725                 730                 735

Ala Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys
            740                 745                 750

Phe Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu
        755                 760                 765

Ala His His His His His His
```

770 775

<210> 175
<211> 1061
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFNg-MSA-lumican

<400> 175

His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu Asn Asn Tyr Phe Asn
1 5 10 15

Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu Phe Leu Asp Ile Trp
20 25 30

Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile Leu Gln Ser Gln Ile
35 40 45

Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu Lys Asp Asn Gln Ala
50 55 60

Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His Leu Ile Thr Thr Phe
65 70 75 80

Phe Ser Asn Ser Lys Ala Lys Lys Asp Ala Phe Met Ser Ile Ala Lys
85 90 95

Phe Glu Val Asn Asn Pro Gln Val Gln Arg Gln Ala Phe Asn Glu Leu
100 105 110

Ile Arg Val Val His Gln Leu Leu Pro Glu Ser Ser Leu Arg Lys Arg
115 120 125

Lys Arg Ser Arg Cys Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser
130 135 140

Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly

```
145                 150                 155                 160

Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp
                165                 170                 175

Glu His Ala Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys
            180                 185                 190

Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu
        195                 200                 205

Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly
    210                 215                 220

Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys
225                 230                 235                 240

Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg
                245                 250                 255

Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr
            260                 265                 270

Phe Met Gly His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe
        275                 280                 285

Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu
    290                 295                 300

Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys
305                 310                 315                 320

Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg
                325                 330                 335

Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala
            340                 345                 350
```

```
Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala
        355                 360                 365

Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys
    370                 375                 380

Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala
385                 390                 395                 400

Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr
                405                 410                 415

Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val
            420                 425                 430

Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe
        435                 440                 445

Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val
    450                 455                 460

Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr
465                 470                 475                 480

Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu
                485                 490                 495

Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val
            500                 505                 510

Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys
        515                 520                 525

Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn
    530                 535                 540

Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro
```

```
545                 550                 555                 560

Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys
                565                 570                 575

Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu
            580                 585                 590

Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val
        595                 600                 605

Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg
    610                 615                 620

Pro Cys Phe Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu
625                 630                 635                 640

Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro
                645                 650                 655

Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val
            660                 665                 670

Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp
        675                 680                 685

Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp
    690                 695                 700

Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp
705                 710                 715                 720

Ala Leu Ala Gly Gly Gly Ser Gly Gly Gly Ser Gln Tyr Tyr Asp Tyr
                725                 730                 735

Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser Pro Asn Cys Ala Pro
            740                 745                 750
```

```
Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala Met Tyr Cys Asp Asp
        755                 760                 765

Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro Gly Ile Lys Tyr Leu
    770                 775                 780

Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp Glu Lys Ala Phe Glu
785                 790                 795                 800

Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp His Asn Leu Leu Glu
                805                 810                 815

Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys Leu Lys Gln Leu Lys
            820                 825                 830

Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu Ser Val Gly Pro Leu
        835                 840                 845

Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn Asn Lys Ile Ser Lys
    850                 855                 860

Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr Phe Ile Tyr Leu Gln
865                 870                 875                 880

His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala Ser Leu Lys Gly Leu
                885                 890                 895

Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn Gln Met Ser Lys Leu
            900                 905                 910

Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu Tyr Leu Asp Asn Asn
        915                 920                 925

Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys Arg Phe Thr Gly Leu
    930                 935                 940

Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala Asp Ser Gly Val Pro
```

945 950 955 960

Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu Leu Asp Leu Ser Tyr
965 970 975

Asn Lys Leu Lys Ser Ile Pro Thr Val Asn Glu Asn Leu Glu Asn Tyr
980 985 990

Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp Val Lys Ser Phe Cys
995 1000 1005

Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile Lys His Leu Arg
1010 1015 1020

Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro Pro Asp Met
1025 1030 1035

Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn Gly Gly
1040 1045 1050

Gly Ser His His His His His His
1055 1060

<210> 176
<211> 1210
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFNg IFNg MSA- lumican

<400> 176

His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu Asn Asn Tyr Phe Asn
1 5 10 15

Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu Phe Leu Asp Ile Trp
20 25 30

Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile Leu Gln Ser Gln Ile

```
        35                  40                  45

Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu Lys Asp Asn Gln Ala
    50                  55                  60

Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His Leu Ile Thr Thr Phe
65                  70                  75                  80

Phe Ser Asn Ser Lys Ala Lys Lys Asp Ala Phe Met Ser Ile Ala Lys
                85                  90                  95

Phe Glu Val Asn Asn Pro Gln Val Gln Arg Gln Ala Phe Asn Glu Leu
            100                 105                 110

Ile Arg Val Val His Gln Leu Leu Pro Glu Ser Ser Leu Arg Lys Arg
        115                 120                 125

Lys Arg Ser Arg Cys Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
    130                 135                 140

Ser Gly Gly Gly Ser His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu
145                 150                 155                 160

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

Phe Leu Asp Ile Trp Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile
            180                 185                 190

Leu Gln Ser Gln Ile Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu
        195                 200                 205

Lys Asp Asn Gln Ala Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His
    210                 215                 220

Leu Ile Thr Thr Phe Phe Ser Asn Ser Lys Ala Lys Lys Asp Ala Phe
225                 230                 235                 240
```

```
Met Ser Ile Ala Lys Phe Glu Val Asn Asn Pro Gln Val Gln Arg Gln
                245                 250                 255

Ala Phe Asn Glu Leu Ile Arg Val Val His Gln Leu Leu Pro Glu Ser
            260                 265                 270

Ser Leu Arg Lys Arg Lys Arg Ser Arg Cys Gly Ser Gly Gly Gly Ser
        275                 280                 285

Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu
    290                 295                 300

Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln
305                 310                 315                 320

Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp
                325                 330                 335

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys
            340                 345                 350

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu
        355                 360                 365

Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro
    370                 375                 380

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu
385                 390                 395                 400

Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys
                405                 410                 415

Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg
            420                 425                 430

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln
```

```
        435                 440                 445

Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser
    450                 455                 460

Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser
465                 470                 475                 480

Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu
                485                 490                 495

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro
            500                 505                 510

Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys
        515                 520                 525

Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
    530                 535                 540

Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser
545                 550                 555                 560

Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His
                565                 570                 575

Cys Leu Ser Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala
            580                 585                 590

Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala
        595                 600                 605

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

Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys
625                 630                 635                 640
```

```
Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala
                645                 650                 655

Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro
            660                 665                 670

Lys Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu
        675                 680                 685

Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro
    690                 695                 700

Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg
705                 710                 715                 720

Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys
                725                 730                 735

Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His
            740                 745                 750

Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser
        755                 760                 765

Leu Val Glu Arg Arg Pro Cys Phe Ser Ala Leu Thr Val Asp Glu Thr
    770                 775                 780

Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp
785                 790                 795                 800

Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala
                805                 810                 815

Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu
            820                 825                 830

Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys
```

```
        835                 840                 845

Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val
    850                 855                 860

Thr Arg Cys Lys Asp Ala Leu Ala Gly Gly Gly Ser Gly Gly Gly Ser
865                 870                 875                 880

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
                885                 890                 895

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            900                 905                 910

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        915                 920                 925

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    930                 935                 940

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
945                 950                 955                 960

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                965                 970                 975

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            980                 985                 990

Ser Val Gly Pro Leu Pro Lys Ser  Leu Gln Asp Leu Gln  Leu Thr Asn
        995                 1000                1005

Asn Lys  Ile Ser Lys Leu Gly  Ser Phe Asp Gly Leu  Val Asn Leu
    1010                1015                1020

Thr Phe  Ile Tyr Leu Gln His  Asn Gln Leu Lys Glu  Asp Ala Val
    1025                1030                1035
```

```
Ser Ala  Ser Leu Lys Gly Leu  Lys Ser Leu Glu Tyr  Leu Asp Leu
    1040                1045                1050

Ser Phe  Asn Gln Met Ser Lys  Leu Pro Ala Gly Leu  Pro Thr Ser
    1055                1060                1065

Leu Leu  Thr Leu Tyr Leu Asp  Asn Asn Lys Ile Ser  Asn Ile Pro
    1070                1075                1080

Asp Glu  Tyr Phe Lys Arg Phe  Thr Gly Leu Gln Tyr  Leu Arg Leu
    1085                1090                1095

Ser His  Asn Glu Leu Ala Asp  Ser Gly Val Pro Gly  Asn Ser Phe
    1100                1105                1110

Asn Ile  Ser Ser Leu Leu Glu  Leu Asp Leu Ser Tyr  Asn Lys Leu
    1115                1120                1125

Lys Ser  Ile Pro Thr Val Asn  Glu Asn Leu Glu Asn  Tyr Tyr Leu
    1130                1135                1140

Glu Val  Asn Glu Leu Glu Lys  Phe Asp Val Lys Ser  Phe Cys Lys
    1145                1150                1155

Ile Leu  Gly Pro Leu Ser Tyr  Ser Lys Ile Lys His  Leu Arg Leu
    1160                1165                1170

Asp Gly  Asn Pro Leu Thr Gln  Ser Ser Leu Pro Pro  Asp Met Tyr
    1175                1180                1185

Glu Cys  Leu Arg Val Ala Asn  Glu Ile Thr Val Asn  Gly Gly Gly
    1190                1195                1200

Ser His  His His His His His
    1205                1210
```

<210> 177

<211> 878
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: IFNg IFNg MSA

<400> 177

```
His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu Asn Asn Tyr Phe Asn
1               5                  10                  15


Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu Phe Leu Asp Ile Trp
            20                  25                  30


Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile Leu Gln Ser Gln Ile
        35                  40                  45


Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu Lys Asp Asn Gln Ala
    50                  55                  60


Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His Leu Ile Thr Thr Phe
65                  70                  75                  80


Phe Ser Asn Ser Lys Ala Lys Lys Asp Ala Phe Met Ser Ile Ala Lys
                85                  90                  95


Phe Glu Val Asn Asn Pro Gln Val Gln Arg Gln Ala Phe Asn Glu Leu
            100                 105                 110


Ile Arg Val Val His Gln Leu Leu Pro Glu Ser Ser Leu Arg Lys Arg
        115                 120                 125


Lys Arg Ser Arg Cys Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
    130                 135                 140


Ser Gly Gly Gly Ser His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu
145                 150                 155                 160


Asn Asn Tyr Phe Asn Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu
```

```
                165                 170                 175

Phe Leu Asp Ile Trp Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile
            180                 185                 190

Leu Gln Ser Gln Ile Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu
        195                 200                 205

Lys Asp Asn Gln Ala Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His
    210                 215                 220

Leu Ile Thr Thr Phe Phe Ser Asn Ser Lys Ala Lys Lys Asp Ala Phe
225                 230                 235                 240

Met Ser Ile Ala Lys Phe Glu Val Asn Asn Pro Gln Val Gln Arg Gln
                245                 250                 255

Ala Phe Asn Glu Leu Ile Arg Val Val His Gln Leu Leu Pro Glu Ser
            260                 265                 270

Ser Leu Arg Lys Arg Lys Arg Ser Arg Cys Gly Ser Gly Gly Gly Ser
        275                 280                 285

Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu
    290                 295                 300

Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln
305                 310                 315                 320

Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp
                325                 330                 335

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys
            340                 345                 350

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu
        355                 360                 365
```

```
Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro
    370                 375                 380

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu
385                 390                 395                 400

Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys
                405                 410                 415

Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg
            420                 425                 430

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln
        435                 440                 445

Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser
    450                 455                 460

Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser
465                 470                 475                 480

Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu
                485                 490                 495

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro
            500                 505                 510

Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys
        515                 520                 525

Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
    530                 535                 540

Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser
545                 550                 555                 560

Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His
```

```
                565                 570                 575

Cys Leu Ser Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala
            580                 585                 590

Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala
        595                 600                 605

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

Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys
625                 630                 635                 640

Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala
                645                 650                 655

Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro
            660                 665                 670

Lys Asn Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu
        675                 680                 685

Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro
    690                 695                 700

Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg
705                 710                 715                 720

Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys
                725                 730                 735

Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His
            740                 745                 750

Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser
        755                 760                 765
```

```
Leu Val Glu Arg Arg Pro Cys Phe Ser Ala Leu Thr Val Asp Glu Thr
    770                 775                 780

Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp
785                 790                 795                 800

Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala
                805                 810                 815

Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu
            820                 825                 830

Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys
        835                 840                 845

Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val
    850                 855                 860

Thr Arg Cys Lys Asp Ala Leu Ala His His His His His His
865                 870                 875
```

<210> 178
<211> 1055
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican MSA - IFNg

<400> 178

```
Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1               5                   10                  15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
            20                  25                  30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
        35                  40                  45
```

```
Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
    50                  55                  60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65                  70                  75                  80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
                85                  90                  95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
            100                 105                 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
        115                 120                 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val Asn Glu
```

```
                245                 250                 255

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335

His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445
```

```
Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
```

```
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735

Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845
```

```
Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu Asn
        915                 920                 925

Asn Tyr Phe Asn Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu Phe
    930                 935                 940

Leu Asp Ile Trp Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile Leu
945                 950                 955                 960

Gln Ser Gln Ile Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu Lys
                965                 970                 975

Asp Asn Gln Ala Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His Leu
            980                 985                 990

Ile Thr Thr Phe Phe Ser Asn Ser  Lys Ala Lys Lys Asp  Ala Phe Met
        995                 1000                1005

Ser Ile  Ala Lys Phe Glu Val  Asn Asn Pro Gln Val  Gln Arg Gln
    1010                1015                1020

Ala Phe  Asn Glu Leu Ile Arg  Val Val His Gln Leu  Leu Pro Glu
    1025                1030                1035

Ser Ser  Leu Arg Lys Arg Lys  Arg Ser Arg Cys His  His His His
```

1040 1045 1050

His His
1055

<210> 179
<211> 1204
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Lumican MSA IFNg - IFNg

<400> 179

Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser
1 5 10 15

Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala
20 25 30

Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro
35 40 45

Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp
50 55 60

Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp
65 70 75 80

His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys
85 90 95

Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu
100 105 110

Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn
115 120 125

Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr

```
    130                 135                 140

Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala
145                 150                 155                 160

Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn
                165                 170                 175

Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu
            180                 185                 190

Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys
        195                 200                 205

Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala
    210                 215                 220

Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu
225                 230                 235                 240

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

Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp
            260                 265                 270

Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile
        275                 280                 285

Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro
    290                 295                 300

Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315                 320

Gly Gly Gly Ser Gly Gly Gly Ser Glu Ala His Lys Ser Glu Ile Ala
                325                 330                 335
```

```
His Arg Tyr Asn Asp Leu Gly Glu Gln His Phe Lys Gly Leu Val Leu
            340                 345                 350

Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys Ser Tyr Asp Glu His Ala
        355                 360                 365

Lys Leu Val Gln Glu Val Thr Asp Phe Ala Lys Thr Cys Val Ala Asp
    370                 375                 380

Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu His Thr Leu Phe Gly Asp
385                 390                 395                 400

Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu Asn Tyr Gly Glu Leu Ala
                405                 410                 415

Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg Asn Glu Cys Phe Leu Gln
            420                 425                 430

His Lys Asp Asp Asn Pro Ser Leu Pro Pro Phe Glu Arg Pro Glu Ala
        435                 440                 445

Glu Ala Met Cys Thr Ser Phe Lys Glu Asn Pro Thr Thr Phe Met Gly
    450                 455                 460

His Tyr Leu His Glu Val Ala Arg Arg His Pro Tyr Phe Tyr Ala Pro
465                 470                 475                 480

Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn Glu Ile Leu Thr Gln Cys
                485                 490                 495

Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu Thr Pro Lys Leu Asp Gly
            500                 505                 510

Val Lys Glu Lys Ala Leu Val Ser Ser Val Arg Gln Arg Met Lys Cys
        515                 520                 525

Ser Ser Met Gln Lys Phe Gly Glu Arg Ala Phe Lys Ala Trp Ala Val
```

```
    530                 535                 540

Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala Asp Phe Ala Glu Ile Thr
545                 550                 555                 560

Lys Leu Ala Thr Asp Leu Thr Lys Val Asn Lys Glu Cys Cys His Gly
                565                 570                 575

Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala Glu Leu Ala Lys Tyr Met
            580                 585                 590

Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys Leu Gln Thr Cys Cys Asp
        595                 600                 605

Lys Pro Leu Leu Lys Lys Ala His Cys Leu Ser Glu Val Glu His Asp
    610                 615                 620

Thr Met Pro Ala Asp Leu Pro Ala Ile Ala Ala Asp Phe Val Glu Asp
625                 630                 635                 640

Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala Lys Asp Val Phe Leu Gly
                645                 650                 655

Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His Pro Asp Tyr Ser Val Ser
            660                 665                 670

Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu Ala Thr Leu Glu Lys Cys
        675                 680                 685

Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr Gly Thr Val Leu Ala Glu
    690                 695                 700

Phe Gln Pro Leu Val Glu Glu Pro Lys Asn Leu Val Lys Thr Asn Cys
705                 710                 715                 720

Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly Phe Gln Asn Ala Ile Leu
                725                 730                 735
```

```
Val Arg Tyr Thr Gln Lys Ala Pro Gln Val Ser Thr Pro Thr Leu Val
            740                 745                 750

Glu Ala Ala Arg Asn Leu Gly Arg Val Gly Thr Lys Cys Cys Thr Leu
        755                 760                 765

Pro Glu Asp Gln Arg Leu Pro Cys Val Glu Asp Tyr Leu Ser Ala Ile
    770                 775                 780

Leu Asn Arg Val Cys Leu Leu His Glu Lys Thr Pro Val Ser Glu His
785                 790                 795                 800

Val Thr Lys Cys Cys Ser Gly Ser Leu Val Glu Arg Arg Pro Cys Phe
                805                 810                 815

Ser Ala Leu Thr Val Asp Glu Thr Tyr Val Pro Lys Glu Phe Lys Ala
            820                 825                 830

Glu Thr Phe Thr Phe His Ser Asp Ile Cys Thr Leu Pro Glu Lys Glu
        835                 840                 845

Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala Glu Leu Val Lys His Lys
    850                 855                 860

Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr Val Met Asp Asp Phe Ala
865                 870                 875                 880

Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala Asp Lys Asp Thr Cys Phe
                885                 890                 895

Ser Thr Glu Gly Pro Asn Leu Val Thr Arg Cys Lys Asp Ala Leu Ala
            900                 905                 910

Gly Gly Gly Ser His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu Asn
        915                 920                 925

Asn Tyr Phe Asn Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu Phe
```

```
    930                 935                 940

Leu Asp Ile Trp Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile Leu
945                 950                 955                 960

Gln Ser Gln Ile Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu Lys
                965                 970                 975

Asp Asn Gln Ala Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His Leu
            980                 985                 990

Ile Thr Thr Phe Phe Ser Asn Ser  Lys Ala Lys Lys Asp  Ala Phe Met
        995                 1000                1005

Ser Ile  Ala Lys Phe Glu Val  Asn Asn Pro Gln Val  Gln Arg Gln
    1010                1015                1020

Ala Phe  Asn Glu Leu Ile Arg  Val Val His Gln Leu  Leu Pro Glu
    1025                1030                1035

Ser Ser  Leu Arg Lys Arg Lys  Arg Ser Arg Cys Gly  Gly Gly Ser
    1040                1045                1050

Gly Gly  Gly Ser Gly Gly Gly  Ser Gly Gly Gly Ser  His Gly Thr
    1055                1060                1065

Val Ile  Glu Ser Leu Glu Ser  Leu Asn Asn Tyr Phe  Asn Ser Ser
    1070                1075                1080

Gly Ile  Asp Val Glu Glu Lys  Ser Leu Phe Leu Asp  Ile Trp Arg
    1085                1090                1095

Asn Trp  Gln Lys Asp Gly Asp  Met Lys Ile Leu Gln  Ser Gln Ile
    1100                1105                1110

Ile Ser  Phe Tyr Leu Arg Leu  Phe Glu Val Leu Lys  Asp Asn Gln
    1115                1120                1125
```

```
Ala Ile  Ser Asn Asn Ile Ser  Val Ile Glu Ser His  Leu Ile Thr
    1130                1135                1140


Thr Phe  Phe Ser Asn Ser Lys  Ala Lys Lys Asp Ala  Phe Met Ser
    1145                1150                1155


Ile Ala  Lys Phe Glu Val Asn  Asn Pro Gln Val Gln  Arg Gln Ala
    1160                1165                1170


Phe Asn  Glu Leu Ile Arg Val  Val His Gln Leu Leu  Pro Glu Ser
    1175                1180                1185


Ser Leu  Arg Lys Arg Lys Arg  Ser Arg Cys His His  His His His
    1190                1195                1200


His
```

<210> 180
<211> 876
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: MSA- IFNg - IFNg

<400> 180

```
Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu
1               5                   10                  15


Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln
            20                  25                  30


Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp
        35                  40                  45


Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys
    50                  55                  60
```

```
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu
65                  70                  75                  80

Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro
                85                  90                  95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu
            100                 105                 110

Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys
        115                 120                 125

Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg
    130                 135                 140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln
145                 150                 155                 160

Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser
                165                 170                 175

Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser
            180                 185                 190

Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro
    210                 215                 220

Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys
225                 230                 235                 240

Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser
```

```
            260                 265                 270

Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His
        275                 280                 285

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

Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys
            340                 345                 350

Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala
        355                 360                 365

Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro
    370                 375                 380

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

Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg
            420                 425                 430

Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys
        435                 440                 445

Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His
    450                 455                 460
```

```
Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser
465                 470                 475                 480

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

Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp
            500                 505                 510

Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu
    530                 535                 540

Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys
545                 550                 555                 560

Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val
                565                 570                 575

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

Ile Glu Ser Leu Glu Ser Leu Asn Asn Tyr Phe Asn Ser Ser Gly Ile
        595                 600                 605

Asp Val Glu Glu Lys Ser Leu Phe Leu Asp Ile Trp Arg Asn Trp Gln
    610                 615                 620

Lys Asp Gly Asp Met Lys Ile Leu Gln Ser Gln Ile Ile Ser Phe Tyr
625                 630                 635                 640

Leu Arg Leu Phe Glu Val Leu Lys Asp Asn Gln Ala Ile Ser Asn Asn
                645                 650                 655

Ile Ser Val Ile Glu Ser His Leu Ile Thr Thr Phe Phe Ser Asn Ser
```

```
            660                 665                 670

Lys Ala Lys Lys Asp Ala Phe Met Ser Ile Ala Lys Phe Glu Val Asn
        675                 680                 685

Asn Pro Gln Val Gln Arg Gln Ala Phe Asn Glu Leu Ile Arg Val Val
    690                 695                 700

His Gln Leu Leu Pro Glu Ser Ser Leu Arg Lys Arg Lys Arg Ser Arg
705                 710                 715                 720

Cys Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
                725                 730                 735

Ser His Gly Thr Val Ile Glu Ser Leu Glu Ser Leu Asn Asn Tyr Phe
            740                 745                 750

Asn Ser Ser Gly Ile Asp Val Glu Glu Lys Ser Leu Phe Leu Asp Ile
        755                 760                 765

Trp Arg Asn Trp Gln Lys Asp Gly Asp Met Lys Ile Leu Gln Ser Gln
    770                 775                 780

Ile Ile Ser Phe Tyr Leu Arg Leu Phe Glu Val Leu Lys Asp Asn Gln
785                 790                 795                 800

Ala Ile Ser Asn Asn Ile Ser Val Ile Glu Ser His Leu Ile Thr Thr
                805                 810                 815

Phe Phe Ser Asn Ser Lys Ala Lys Lys Asp Ala Phe Met Ser Ile Ala
            820                 825                 830

Lys Phe Glu Val Asn Asn Pro Gln Val Gln Arg Gln Ala Phe Asn Glu
        835                 840                 845

Leu Ile Arg Val Val His Gln Leu Leu Pro Glu Ser Ser Leu Arg Lys
    850                 855                 860
```

```
Arg Lys Arg Ser Arg Cys His His His His His His
865                 870                 875


<210>  181
<211>  129
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: LAIR  (H)6

<400>  181

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1               5                   10                  15


Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
            20                  25                  30


Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
        35                  40                  45


Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
    50                  55                  60


Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65                  70                  75                  80


Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
                85                  90                  95


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


Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr His His His His His
        115                 120                 125


His
```

<210> 182
<211> 319
<212> PRT
<213> Mus musculus

<220>
<221> misc_feature
<222> (1)..(319)
<223> Lumican (murine)

<400> 182

```
Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln Ile Ser Pro
1               5                   10                  15


Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro Thr Ala Met
            20                  25                  30


Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val Pro Pro Gly
        35                  40                  45


Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His Ile Asp Glu
    50                  55                  60


Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile Leu Asp His
65                  70                  75                  80


Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe Ser Lys Leu
                85                  90                  95


Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu Thr Glu Ser
            100                 105                 110


Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu Thr Asn Asn
        115                 120                 125


Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn Leu Thr Phe
    130                 135                 140
```

```
Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val Ser Ala Ser
145                 150                 155                 160


Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser Phe Asn Gln
                165                 170                 175


Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu Thr Leu Tyr
            180                 185                 190


Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr Phe Lys Arg
        195                 200                 205


Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu Leu Ala Asp
    210                 215                 220


Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu Leu Glu Leu
225                 230                 235                 240


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


Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys Phe Asp Val
            260                 265                 270


Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser Lys Ile Lys
        275                 280                 285


His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser Leu Pro Pro
    290                 295                 300


Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr Val Asn
305                 310                 315


<210>  183
<211>  584
<212>  PRT
<213>  Mus musculus
```

<220>
<221> misc_feature
<222> (1)..(584)
<223> murine MSA

<400> 183

```
Glu Ala His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu
1               5                  10                  15


Gln His Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln
            20                  25                  30


Lys Cys Ser Tyr Asp Glu His Ala Lys Leu Val Gln Glu Val Thr Asp
        35                  40                  45


Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys
    50                  55                  60


Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu
65                  70                  75                  80


Arg Glu Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro
                85                  90                  95


Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu
            100                 105                 110


Pro Pro Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys
        115                 120                 125


Glu Asn Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg
    130                 135                 140


Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln
145                 150                 155                 160


Tyr Asn Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser
                165                 170                 175
```

```
Cys Leu Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser
            180                 185                 190

Ser Val Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu
        195                 200                 205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro
    210                 215                 220

Asn Ala Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys
225                 230                 235                 240

Val Asn Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
                245                 250                 255

Arg Ala Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser
            260                 265                 270

Ser Lys Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His
        275                 280                 285

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

Ile Ala Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala
305                 310                 315                 320

Glu Ala Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg
                325                 330                 335

Arg His Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys
            340                 345                 350

Tyr Glu Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala
        355                 360                 365

Cys Tyr Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro
```

```
    370                 375                 380

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

Tyr Gly Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg
            420                 425                 430

Val Gly Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys
        435                 440                 445

Val Glu Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser
465                 470                 475                 480

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

Tyr Val Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp
            500                 505                 510

Ile Cys Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Ala Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu
    530                 535                 540

Lys Thr Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys
545                 550                 555                 560

Ala Ala Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val
                565                 570                 575
```

Thr Arg Cys Lys Asp Ala Leu Ala
            580

<210> 184
<211> 213
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 3/23 LC murine kappa

<400> 184

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

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

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

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

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

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

Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg Ala Asp Ala Ala Pro
            100   105   110

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

Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile Asn
    130   135   140

```
Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu Asn
145                 150                 155                 160


Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser Ser
                165                 170                 175


Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr Thr
            180                 185                 190


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


Asn Arg Asn Glu Cys
    210


<210>  185
<211>  786
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: 3/23 HC-lumican

<400>  185

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


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


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


Ala Ser Ile Asn Tyr Glu Gly Ser Ser Thr Tyr Tyr Gly Glu Ser Val
    50                  55                  60


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

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

Val Arg His Asp Asn Tyr Phe Asp Tyr Trp Gly Gln Gly Val Leu Val
            100                 105                 110

Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala
        115                 120                 125

Pro Val Cys Gly Gly Thr Thr Gly Ser Ser Val Thr Leu Gly Cys Leu
    130                 135                 140

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

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

Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Asn Thr Trp Pro
            180                 185                 190

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

Val Asp Lys Lys Ile Glu Pro Arg Val Pro Ile Thr Gln Asn Pro Cys
    210                 215                 220

Pro Pro Leu Lys Glu Cys Pro Pro Cys Ala Ala Pro Asp Ala Ala Gly
225                 230                 235                 240

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

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

Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val
```

```
        275                 280                 285

His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu
    290                 295                 300

Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly
305                 310                 315                 320

Lys Glu Phe Lys Cys Lys Val Asn Asn Arg Ala Leu Gly Ser Pro Ile
                325                 330                 335

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

Tyr Val Leu Pro Pro Pro Ala Glu Glu Met Thr Lys Lys Glu Phe Ser
        355                 360                 365

Leu Thr Cys Met Ile Thr Gly Phe Leu Pro Ala Glu Ile Ala Val Asp
    370                 375                 380

Trp Thr Ser Asn Gly Arg Thr Glu Gln Asn Tyr Lys Asn Thr Ala Thr
385                 390                 395                 400

Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val
                405                 410                 415

Gln Lys Ser Thr Trp Glu Arg Gly Ser Leu Phe Ala Cys Ser Val Val
            420                 425                 430

His Glu Gly Leu His Asn His Leu Thr Thr Lys Thr Ile Ser Arg Ser
        435                 440                 445

Leu Gly Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
    450                 455                 460

Gly Ser Gln Tyr Tyr Asp Tyr Asp Ile Pro Leu Phe Met Tyr Gly Gln
465                 470                 475                 480
```

```
Ile Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro His Ser Tyr Pro
                485                 490                 495

Thr Ala Met Tyr Cys Asp Asp Leu Lys Leu Lys Ser Val Pro Met Val
            500                 505                 510

Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His
        515                 520                 525

Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile
    530                 535                 540

Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Lys Val Phe
545                 550                 555                 560

Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn Tyr Asn Asn Leu
                565                 570                 575

Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Gln Asp Leu Gln Leu
            580                 585                 590

Thr Asn Asn Lys Ile Ser Lys Leu Gly Ser Phe Asp Gly Leu Val Asn
        595                 600                 605

Leu Thr Phe Ile Tyr Leu Gln His Asn Gln Leu Lys Glu Asp Ala Val
    610                 615                 620

Ser Ala Ser Leu Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser
625                 630                 635                 640

Phe Asn Gln Met Ser Lys Leu Pro Ala Gly Leu Pro Thr Ser Leu Leu
                645                 650                 655

Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr
            660                 665                 670

Phe Lys Arg Phe Thr Gly Leu Gln Tyr Leu Arg Leu Ser His Asn Glu
```

675 680 685

Leu Ala Asp Ser Gly Val Pro Gly Asn Ser Phe Asn Ile Ser Ser Leu
690 695 700

Leu Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Ser Ile Pro Thr Val
705 710 715 720

Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Glu Leu Glu Lys
725 730 735

Phe Asp Val Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser
740 745 750

Lys Ile Lys His Leu Arg Leu Asp Gly Asn Pro Leu Thr Gln Ser Ser
755 760 765

Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Ile Thr
770 775 780

Val Asn
785

<210> 186
<211> 869
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR-MSA-IL2

<400> 186

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1 5 10 15

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
20 25 30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr

```
        35                  40                  45

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
    50                  55                  60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65                  70                  75                  80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
                85                  90                  95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr Gly Gly Ser Glu Ala
        115                 120                 125

His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu Gln His
    130                 135                 140

Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys
145                 150                 155                 160

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

Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu
            180                 185                 190

His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu
        195                 200                 205

Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg
    210                 215                 220

Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu Pro Pro
225                 230                 235                 240
```

```
Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys Glu Asn
                245                 250                 255

Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg Arg His
            260                 265                 270

Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn
        275                 280                 285

Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu
    290                 295                 300

Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser Ser Val
305                 310                 315                 320

Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu Arg Ala
                325                 330                 335

Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala
            340                 345                 350

Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys Val Asn
        355                 360                 365

Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala
    370                 375                 380

Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys
385                 390                 395                 400

Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His Cys Leu
                405                 410                 415

Ser Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala Ile Ala
            420                 425                 430

Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala
```

```
        435                 440                 445

Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His
    450                 455                 460

Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu
465                 470                 475                 480

Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr
                485                 490                 495

Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro Lys Asn
            500                 505                 510

Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly
        515                 520                 525

Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln Val
    530                 535                 540

Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg Val Gly
545                 550                 555                 560

Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys Val Glu
                565                 570                 575

Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His Glu Lys
            580                 585                 590

Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser Leu Val
        595                 600                 605

Glu Arg Arg Pro Cys Phe Ser Ala Leu Thr Val Asp Glu Thr Tyr Val
    610                 615                 620

Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp Ile Cys
625                 630                 635                 640
```

```
Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala
                645                 650                 655

Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr
            660                 665                 670

Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala
        675                 680                 685

Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val Thr Arg
    690                 695                 700

Cys Lys Asp Ala Leu Ala Gly Gly Gly Ser Ala Pro Thr Ser Ser Ser
705                 710                 715                 720

Thr Ser Ser Ser Thr Ala Glu Ala Gln Gln Gln Gln Gln Gln Gln Gln
                725                 730                 735

Gln Gln Gln Gln His Leu Glu Gln Leu Leu Met Asp Leu Gln Glu Leu
            740                 745                 750

Leu Ser Arg Met Glu Asn Tyr Arg Asn Leu Lys Leu Pro Arg Met Leu
        755                 760                 765

Thr Phe Lys Phe Tyr Leu Pro Lys Gln Ala Thr Glu Leu Lys Asp Leu
    770                 775                 780

Gln Cys Leu Glu Asp Glu Leu Gly Pro Leu Arg His Val Leu Asp Leu
785                 790                 795                 800

Thr Gln Ser Lys Ser Phe Gln Leu Glu Asp Ala Glu Asn Phe Ile Ser
                805                 810                 815

Asn Ile Arg Val Thr Val Val Lys Leu Lys Gly Ser Asp Asn Thr Phe
            820                 825                 830

Glu Cys Gln Phe Asp Asp Glu Ser Ala Thr Val Val Asp Phe Leu Arg
```

835 840 845

Arg Trp Ile Ala Phe Cys Gln Ser Ile Ile Ser Thr Ser Pro Gln His
850 855 860

His His His His His
865

<210> 187
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.w.A

<400> 187

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1 5 10 15

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

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Gly Gly Ser Thr
35 40 45

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
50 55 60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65 70 75 80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
85 90 95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr

115 120

<210> 188
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.w.B

<400> 188

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1 5 10 15

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
20 25 30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
35 40 45

Ser Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
50 55 60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65 70 75 80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
85 90 95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
115 120

<210> 189
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.w.C

<400> 189

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1   5   10   15

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
            20   25   30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
        35   40   45

Phe Met Gly Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
    50   55   60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65   70   75   80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
                85   90   95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
        115   120

<210> 190
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.d.D

<400> 190

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1   5   10   15

```
Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
            20                  25                  30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Ala Lys Asp Gly Ser Thr
        35                  40                  45

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
    50                  55                  60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65                  70                  75                  80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
                85                  90                  95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
        115                 120
```

<210> 191
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.w.E

<400> 191

```
Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1               5                   10                  15

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
            20                  25                  30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
        35                  40                  45
```

```
Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Leu Glu
    50                  55                  60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65                  70                  75                  80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
                85                  90                  95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
        115                 120
```

<210> 192
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.w.F

<400> 192

```
Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1               5                   10                  15

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
            20                  25                  30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
        35                  40                  45

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
    50                  55                  60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65                  70                  75                  80
```

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ala Lys Thr Leu Glu Leu Lys
85 90 95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
115 120

<210> 193
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR30.2.K1.B

<400> 193

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1 5 10 15

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

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
35 40 45

Phe Met Glu Lys Ser Thr Ala Pro Tyr Lys Thr Glu Asp Glu Phe Glu
50 55 60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65 70 75 80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
85 90 95

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

Asp Thr Leu Trp Leu Lys Thr Tyr Ser Ile Tyr
        115   120

<210> 194
<211> 720
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LAIR-MSA

<400> 194

Gln Glu Gly Ser Leu Pro Asp Ile Thr Ile Phe Pro Asn Ser Ser Leu
1   5   10   15

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
            20   25   30

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
        35   40   45

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
    50   55   60

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
65   70   75   80

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
                85   90   95

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

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr Gly Gly Ser Glu Ala
        115   120   125

His Lys Ser Glu Ile Ala His Arg Tyr Asn Asp Leu Gly Glu Gln His
    130   135   140

```
Phe Lys Gly Leu Val Leu Ile Ala Phe Ser Gln Tyr Leu Gln Lys Cys
145                 150                 155                 160

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

Lys Thr Cys Val Ala Asp Glu Ser Ala Ala Asn Cys Asp Lys Ser Leu
            180                 185                 190

His Thr Leu Phe Gly Asp Lys Leu Cys Ala Ile Pro Asn Leu Arg Glu
        195                 200                 205

Asn Tyr Gly Glu Leu Ala Asp Cys Cys Thr Lys Gln Glu Pro Glu Arg
    210                 215                 220

Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Ser Leu Pro Pro
225                 230                 235                 240

Phe Glu Arg Pro Glu Ala Glu Ala Met Cys Thr Ser Phe Lys Glu Asn
                245                 250                 255

Pro Thr Thr Phe Met Gly His Tyr Leu His Glu Val Ala Arg Arg His
            260                 265                 270

Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Tyr Tyr Ala Glu Gln Tyr Asn
        275                 280                 285

Glu Ile Leu Thr Gln Cys Cys Ala Glu Ala Asp Lys Glu Ser Cys Leu
    290                 295                 300

Thr Pro Lys Leu Asp Gly Val Lys Glu Lys Ala Leu Val Ser Ser Val
305                 310                 315                 320

Arg Gln Arg Met Lys Cys Ser Ser Met Gln Lys Phe Gly Glu Arg Ala
                325                 330                 335

Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Thr Phe Pro Asn Ala
```

```
            340                 345                 350

Asp Phe Ala Glu Ile Thr Lys Leu Ala Thr Asp Leu Thr Lys Val Asn
        355                 360                 365

Lys Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp Arg Ala
    370                 375                 380

Glu Leu Ala Lys Tyr Met Cys Glu Asn Gln Ala Thr Ile Ser Ser Lys
385                 390                 395                 400

Leu Gln Thr Cys Cys Asp Lys Pro Leu Leu Lys Lys Ala His Cys Leu
                405                 410                 415

Ser Glu Val Glu His Asp Thr Met Pro Ala Asp Leu Pro Ala Ile Ala
            420                 425                 430

Ala Asp Phe Val Glu Asp Gln Glu Val Cys Lys Asn Tyr Ala Glu Ala
        435                 440                 445

Lys Asp Val Phe Leu Gly Thr Phe Leu Tyr Glu Tyr Ser Arg Arg His
    450                 455                 460

Pro Asp Tyr Ser Val Ser Leu Leu Leu Arg Leu Ala Lys Lys Tyr Glu
465                 470                 475                 480

Ala Thr Leu Glu Lys Cys Cys Ala Glu Ala Asn Pro Pro Ala Cys Tyr
                485                 490                 495

Gly Thr Val Leu Ala Glu Phe Gln Pro Leu Val Glu Glu Pro Lys Asn
            500                 505                 510

Leu Val Lys Thr Asn Cys Asp Leu Tyr Glu Lys Leu Gly Glu Tyr Gly
        515                 520                 525

Phe Gln Asn Ala Ile Leu Val Arg Tyr Thr Gln Lys Ala Pro Gln Val
    530                 535                 540
```

```
Ser Thr Pro Thr Leu Val Glu Ala Ala Arg Asn Leu Gly Arg Val Gly
545                 550                 555                 560


Thr Lys Cys Cys Thr Leu Pro Glu Asp Gln Arg Leu Pro Cys Val Glu
                565                 570                 575


Asp Tyr Leu Ser Ala Ile Leu Asn Arg Val Cys Leu Leu His Glu Lys
            580                 585                 590


Thr Pro Val Ser Glu His Val Thr Lys Cys Cys Ser Gly Ser Leu Val
        595                 600                 605


Glu Arg Arg Pro Cys Phe Ser Ala Leu Thr Val Asp Glu Thr Tyr Val
    610                 615                 620


Pro Lys Glu Phe Lys Ala Glu Thr Phe Thr Phe His Ser Asp Ile Cys
625                 630                 635                 640


Thr Leu Pro Glu Lys Glu Lys Gln Ile Lys Lys Gln Thr Ala Leu Ala
                645                 650                 655


Glu Leu Val Lys His Lys Pro Lys Ala Thr Ala Glu Gln Leu Lys Thr
            660                 665                 670


Val Met Asp Asp Phe Ala Gln Phe Leu Asp Thr Cys Cys Lys Ala Ala
        675                 680                 685


Asp Lys Asp Thr Cys Phe Ser Thr Glu Gly Pro Asn Leu Val Thr Arg
    690                 695                 700


Cys Lys Asp Ala Leu Ala Gly Gly Gly Ser His His His His His His
705                 710                 715                 720


<210>  195
<211>  476
<212>  PRT
<213>  Artificial Sequence
```

<220>
<223> Synthetic: 4420 HC-LAIR

<400> 195

```
Asp Val Lys Leu Asp Glu Thr Gly Gly Gly Leu Val Gln Pro Gly Arg
1               5                   10                  15


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


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


Ala Gln Ile Arg Asn Lys Pro Tyr Asn Tyr Glu Thr Tyr Tyr Ser Asp
    50                  55                  60


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


Val Tyr Leu Gln Met Asn Asn Leu Arg Val Glu Asp Met Gly Ile Tyr
                85                  90                  95


Tyr Cys Thr Gly Ser Tyr Tyr Gly Met Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110


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


Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
    130                 135                 140


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


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


Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
```

```
            180                 185                 190

Pro Ser Gln Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
        195                 200                 205

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
    210                 215                 220

Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
225                 230                 235                 240

Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
                245                 250                 255

Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
            260                 265                 270

Val Asp Asp Val Glu Val His Thr Ala Gln Thr Lys Pro Arg Glu Glu
        275                 280                 285

Gln Ile Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
    290                 295                 300

Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
305                 310                 315                 320

Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
                325                 330                 335

Pro Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            340                 345                 350

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

Leu Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser
    370                 375                 380
```

```
Asp Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser
385                 390                 395                 400


Thr Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe
                405                 410                 415


Glu Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile
            420                 425                 430


Tyr Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu
        435                 440                 445


Lys Val Ile Lys Glu Asn Val Ile Gln Thr Pro Ala Pro Gly Pro Thr
    450                 455                 460


Ser Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
465                 470                 475


<210>  196
<211>  475
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Synthetic: 3/23 HC-LAIR

<400>  196

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


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


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


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

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

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

Val Arg His Asp Asn Tyr Phe Asp Tyr Trp Gly Gln Gly Val Leu Val
            100                 105                 110

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

Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu
    130                 135                 140

Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly
145                 150                 155                 160

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

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

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

Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile
    210                 215                 220

Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro
225                 230                 235                 240

Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val
                245                 250                 255

Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val
```

```
            260                 265                 270

Asp Asp Val Glu Val His Thr Ala Gln Thr Lys Pro Arg Glu Glu Gln
        275                 280                 285

Ile Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln
    290                 295                 300

Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala
305                 310                 315                 320

Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro
                325                 330                 335

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
            340                 345                 350

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

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
    370                 375                 380

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
385                 390                 395                 400

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
                405                 410                 415

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
            420                 425                 430

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
        435                 440                 445

Val Ile Lys Glu Asn Val Ile Gln Thr Pro Ala Pro Gly Pro Thr Ser
    450                 455                 460
```

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
465 470 475

<210> 197
<211> 479
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: LOB12.3 HC-LAIR

<400> 197

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

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ile Phe Ser Tyr Phe
20 25 30

Asp Met Ala Trp Val Arg Gln Ala Pro Thr Lys Gly Leu Glu Trp Val
35 40 45

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

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

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

Ala Arg Arg Ser Tyr Gly Gly Tyr Ser Glu Ile Asp Tyr Trp Gly Gln
100 105 110

Gly Val Met Val Thr Val Ser Ser Ala Thr Thr Lys Gly Pro Ser Val
115 120 125

Tyr Pro Leu Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr
130 135 140

```
Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr
145                 150                 155                 160


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


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


Ser Thr Trp Pro Ser Gln Thr Val Thr Cys Asn Val Ala His Pro Ala
        195                 200                 205


Ser Ser Thr Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys
    210                 215                 220


Lys Pro Cys Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe
225                 230                 235                 240


Pro Pro Lys Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val
                245                 250                 255


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


Ser Trp Phe Val Asp Asp Val Glu Val His Thr Ala Gln Thr Lys Pro
        275                 280                 285


Arg Glu Glu Gln Ile Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro
    290                 295                 300


Ile Met His Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val
305                 310                 315                 320


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


Lys Gly Arg Pro Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
```

340 345 350

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

Asn Ser Ser Leu Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys
370 375 380

Ser Tyr Ser Asp Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys
385 390 395 400

Asp Gly Ser Thr Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu
405 410 415

Asp Glu Phe Glu Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr
420 425 430

Ser Cys Ile Tyr Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr
435 440 445

Leu Glu Leu Lys Val Ile Lys Glu Asn Val Ile Gln Thr Pro Ala Pro
450 455 460

Gly Pro Thr Ser Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
465 470 475

<210> 198
<211> 476
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: OX86 HC-LAIR

<400> 198

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Gly Tyr

```
            20                  25                  30

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

Gly Arg Met Arg Tyr Asp Gly Asp Thr Tyr Tyr Asn Ser Val Leu Lys
    50                  55                  60

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

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

Arg Asp Gly Arg Gly Asp Ser Phe Asp Tyr Trp Gly Gln Gly Val Met
            100                 105                 110

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

Ala Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys
    130                 135                 140

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

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

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Pro Ser Ser Thr Trp
            180                 185                 190

Pro Ser Gln Thr Val Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
        195                 200                 205

Lys Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys
    210                 215                 220
```

```
Ile Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys
225                 230                 235                 240


Pro Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val
                245                 250                 255


Val Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe
            260                 265                 270


Val Asp Asp Val Glu Val His Thr Ala Gln Thr Lys Pro Arg Glu Glu
        275                 280                 285


Gln Ile Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His
    290                 295                 300


Gln Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala
305                 310                 315                 320


Ala Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg
                325                 330                 335


Pro Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            340                 345                 350


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


Leu Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser
    370                 375                 380


Asp Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser
385                 390                 395                 400


Thr Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe
                405                 410                 415


Glu Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile
```

420 425 430

Tyr Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu
435 440 445

Lys Val Ile Lys Glu Asn Val Ile Gln Thr Pro Ala Pro Gly Pro Thr
450 455 460

Ser Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
465 470 475

<210> 199
<211> 475
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: 2C11 HC-LAIR

<400> 199

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

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

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

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

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

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

Ala Arg Phe Asp Trp Asp Lys Asn Tyr Trp Gly Gln Gly Thr Met Val

```
            100                 105                 110

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

Pro Gly Ser Ala Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu
    130                 135                 140

Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Val Thr Trp Asn Ser Gly
145                 150                 155                 160

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

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

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

Val Asp Lys Lys Ile Val Pro Arg Asp Cys Gly Cys Lys Pro Cys Ile
    210                 215                 220

Cys Thr Val Pro Glu Val Ser Ser Val Phe Ile Phe Pro Pro Lys Pro
225                 230                 235                 240

Lys Asp Val Leu Thr Ile Thr Leu Thr Pro Lys Val Thr Cys Val Val
                245                 250                 255

Val Asp Ile Ser Lys Asp Asp Pro Glu Val Gln Phe Ser Trp Phe Val
            260                 265                 270

Asp Asp Val Glu Val His Thr Ala Gln Thr Lys Pro Arg Glu Glu Gln
        275                 280                 285

Ile Asn Ser Thr Phe Arg Ser Val Ser Glu Leu Pro Ile Met His Gln
    290                 295                 300
```

```
Asp Trp Leu Asn Gly Lys Glu Phe Lys Cys Arg Val Asn Ser Ala Ala
305                 310                 315                 320

Phe Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Arg Pro
                325                 330                 335

Lys Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
            340                 345                 350

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

Met Ile Ser Gln Gly Thr Phe Val Thr Val Val Cys Ser Tyr Ser Asp
    370                 375                 380

Lys His Asp Leu Tyr Asn Met Val Arg Leu Glu Lys Asp Gly Ser Thr
385                 390                 395                 400

Phe Met Glu Lys Ser Thr Glu Pro Tyr Lys Thr Glu Asp Glu Phe Glu
                405                 410                 415

Ile Gly Pro Val Asn Glu Thr Ile Thr Gly His Tyr Ser Cys Ile Tyr
            420                 425                 430

Ser Lys Gly Ile Thr Trp Ser Glu Arg Ser Lys Thr Leu Glu Leu Lys
        435                 440                 445

Val Ile Lys Glu Asn Val Ile Gln Thr Pro Ala Pro Gly Pro Thr Ser
    450                 455                 460

Asp Thr Ser Trp Leu Lys Thr Tyr Ser Ile Tyr
465                 470                 475
```

<210> 200
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Linker

<220>
<221> misc_feature
<222> (12)..(26)
<223> "Glu Ala Ala Ala Lys" may or may not be present

<400> 200

Ala Glu Ala Ala Ala Lys Glu Ala Ala Ala Lys Glu Ala Ala Ala Lys
1   5   10   15

Glu Ala Ala Ala Lys Glu Ala Ala Ala Lys Ala
            20   25

<210> 201
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Linker

<400> 201

Gly Gly Ser Gly
1

<210> 202
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Linker

<220>
<221> misc_feature
<222> (5)..(20)
<223> "Gly Gly Ser Gly" may or may not be present

<400> 202

Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser Gly

1 5 10 15

Gly Gly Ser Gly
20

<210> 203
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Linker

<400> 203

Gly Ser Ala Thr
1

<210> 204
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic: Linker

<220>
<221> misc_feature
<222> (7)..(30)
<223> "Gly Gly Ser Gly Gly Ser" may or may not be present

<400> 204

Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly
1 5 10 15

Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser Gly Gly Ser
20 25 30

<210> 205
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: lipophilic-CpG oligonucleotide

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5 lipophilic compound, such as diacyl lipid

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipophilic compound, such as diacyl lipid

<220>
<221> misc_feature
<222> (2)..(5)
<223> g may or may not be present

<400> 205
gggggtccat gacgttcctg acgtt 25

<210> 206
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: oligonucleotide linker

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipo

<400> 206
ttttttttt cg 12

<210> 207
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: oligonucleotide linker

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipo

<400> 207
ggtttttttt cg 12

<210> 208
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: oligonucleotide linker

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipo

<400> 208
ggggtttttt cg 12

<210> 209
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: oligonucleotide linker

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipo

<400> 209
gggggtttt cg 12

<210> 210
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: oligonucleotide linker

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipo

<400> 210
ggggggggtt cg 12

<210> 211
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic: oligonucleotide linker

<220>
<221> misc_feature
<222> (1)..(1)
<223> 5' lipo

<400> 211
gggggggggg cg 12

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

<220>
<223> Synthetic: soluble collagen peptide mimic

<220>
<221> misc_feature
<222> (3)..(3)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (6)..(6)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (9)..(9)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (12)..(12)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (15)..(15)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (18)..(18)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (21)..(21)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (24)..(24)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (27)..(27)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (30)..(30)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (33)..(33)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (36)..(36)
<223> Xaa is a hydroxyproline amino acid

<220>
<221> misc_feature
<222> (37)..(37)
<223> NH2 group at 3' end

<400> 212

Gly Cys Xaa Gly Pro Xaa Gly Pro Xaa Gly Pro Xaa Gly Pro Xaa Gly
1   5   10   15

Pro Xaa Gly Pro Xaa Gly Pro Xaa Gly Pro Xaa Gly Pro Xaa Gly Pro
            20   25   30

Xaa Gly Cys Xaa Gly
        35