SEQUENCE LISTING

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<120> OLIGOMERIC PARTICLE REAGENTS AND METHODS OF USE THEREOF

<130> 735042008540

<140> Not Yet Assigned
<141> Concurrently Herewith

<150> US 62/491,245
<151> 2017-04-27

<160> 61

<170> PatentIn version 3.5

<210> 1
<211> 159
<212> PRT
<213> Streptomyces avidinii

<220>
<221> misc_feature
<223> Streptavidin

<400> 1

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

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

Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu Ser Ala Val Gly
35 40 45

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

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

```
Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
                85                  90                  95


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


Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp
        115                 120                 125


Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
    130                 135                 140


Lys Ala Gly Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
145                 150                 155


<210>  2
<211>  126
<212>  PRT
<213>  Streptomyces avidinii


<220>
<221>  misc_feature
<223>  Minimal streptavidin

<400>  2

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1               5                   10                  15


Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu Ser
            20                  25                  30


Ala Val Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
        35                  40                  45


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


Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65                  70                  75                  80


Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
                85                  90                  95
```

```
Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
            100                 105                 110


Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
        115                 120                 125


<210>  3
<211>  159
<212>  PRT
<213>  Streptomyces avidinii


<220>
<221>  misc_feature
<223>  Mutein Streptavidin Val44-Thr45-Ala46-Arg47

<400>  3

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


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


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


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


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


Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
                85                  90                  95


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


Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp
        115                 120                 125
```

```
Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
    130                 135                 140


Lys Ala Gly Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
145                 150                 155


<210>  4
<211>  126
<212>  PRT
<213>  Streptomyces avidinii


<220>
<221>  misc_feature
<223>  Mutein Streptavidin Val44-Thr45-Ala46-Arg47

<400>  4

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1               5                   10                  15


Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val Thr
            20                  25                  30


Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
        35                  40                  45


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


Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65                  70                  75                  80


Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
                85                  90                  95


Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
            100                 105                 110


Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
        115                 120                 125


<210>  5
<211>  159
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<212> PRT
<213> Streptomyces avidinii

<220>
<221> misc_feature
<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47

<400> 5

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

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

Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Ile Gly Ala Arg Gly
        35                  40                  45

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

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

Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
                85                  90                  95

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

Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val Gly His Asp
        115                 120                 125

Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser Ile Asp Ala Ala Lys
    130                 135                 140

Lys Ala Gly Val Asn Asn Gly Asn Pro Leu Asp Ala Val Gln Gln
145                 150                 155
```

<210> 6
<211> 126
<212> PRT
<213> Streptomyces avidinii

<220>
<221> misc_feature
<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47

<400> 6

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1 5 10 15

Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Ile Gly
20 25 30

Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
35 40 45

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

Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65 70 75 80

Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
85 90 95

Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
100 105 110

Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 7
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Streptavidin binding peptide, Strep-tag

<400> 7

Trp Arg His Pro Gln Phe Gly Gly
1 5

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

<220>
<223> Strep-tag

<400> 8

Trp Arg His Pro Gln Phe Gly Gly
1 5

<210> 9
<211> 3
<212> PRT
<213> Artificial Sequence

<220>
<223> Streptavidin Binding peptide

<220>
<221> VARIANT
<222> (3)..(3)
<223> Xaa is selected from glutamine, asparagine and methionine

<400> 9

His Pro Xaa
1

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

<220>
<223> Streptavidin-binding peptide

<400> 10

His Pro Gln Phe
1

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

<220>

<223> Streptavidin-binding peptide

<220>
<221> VARIANT
<222> (1)..(1)
<223> Xaa is Trp, Lys or Arg;

<220>
<221> VARIANT
<222> (2)..(2)
<223> Xaa is any amino acid

<220>
<221> VARIANT
<222> (7)..(7)
<223> Xaa is Gly or Glu

<220>
<221> VARIANT
<222> (8)..(8)
<223> Xaa is Gly, Lys or Arg

<400> 11

Xaa Xaa His Pro Gln Phe Xaa Xaa
1 5

<210> 12
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Streptavidin-binding peptide

<220>
<221> VARIANT
<222> (2)..(2)
<223> Xaa is any amino acid

<220>
<221> VARIANT
<222> (7)..(7)
<223> Xaa is Gly or Glu

<220>
<221> VARIANT
<222> (8)..(8)
<223> Xaa is Gly, Lys or Arg

<400> 12

Trp Xaa His Pro Gln Phe Xaa Xaa
1 5

<210> 13
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Sequential modules of streptavidin-binding peptide

<220>
<221> VARIANT
<222> (9)..(9)
<223> Xaa is any amino acid

<220>
<221> REPEAT
<222> (9)..(9)
<223> Xaa is repeated 8 or 12 times

<400> 13

Trp Ser His Pro Gln Phe Glu Lys Xaa Trp Ser His Pro Gln Phe Glu
1 5 10 15

Lys

<210> 14
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Sequential modules of streptavidin-binding peptide

<220>
<221> REPEAT
<222> (9)..(12)
<223> repeated 2 or 3 times

<400> 14

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Trp Ser His Pro
1 5 10 15

Gln Phe Glu Lys
            20

<210> 15
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Twin-Strep-tag

<400> 15

Ser Ala Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly
1   5   10   15

Gly Ser Gly Gly Gly Ser Trp Ser His Pro Gln Phe Glu Lys
            20   25   30

<210> 16
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Twin-Strep-tag

<400> 16

Ser Ala Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly
1   5   10   15

Gly Ser Gly Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys
            20   25   30

<210> 17
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Twin-Strep-tag

<400> 17

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly Ser
1   5   10   15

Gly Gly Gly Ser Trp Ser His Pro Gln Phe Glu Lys
            20   25

<210> 18
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Twin-Strep-tag

<400> 18

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly Ser
1   5   10   15

Trp Ser His Pro Gln Phe Glu Lys
            20

<210> 19
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Twin-Strep-tag

<400> 19

Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly Ser
1   5   10   15

Gly Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys
            20   25

<210> 20
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> HA-tag

<400> 20

Tyr Pro Tyr Asp Val Pro Asp Tyr Ala
1   5

<210> 21
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> VSV-G-tag

<400> 21

Tyr Thr Asp Ile Glu Met Asn Arg Leu Gly Lys
1 5 10

<210> 22
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> HSV-tag

<400> 22

Gln Pro Glu Leu Ala Pro Glu Asp Pro Glu Asp
1 5 10

<210> 23
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> T7 epitope

<400> 23

Ala Ser Met Thr Gly Gly Gln Gln Met Gly
1 5 10

<210> 24
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> HSV epitope

<400> 24

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1 5 10

<210> 25
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Myc epitope

<400> 25

Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu
1 5 10

<210> 26
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> V5-tag

<400> 26

Gly Lys Pro Ile Pro Asn Pro Leu Leu Gly Leu Asp Ser Thr
1 5 10

<210> 27
<211> 126
<212> PRT
<213> Streptomyces avidinii

<220>
<221> misc_feature
<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47 and Glu117, Gly120, Try121 (mutein m1-9)

<400> 27

Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1 5 10 15

Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val Thr
20 25 30

Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
35 40 45

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

Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65                  70                  75                  80

Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
                85                  90                  95

Leu Thr Ser Gly Thr Thr Glu Glu Asn Ala Gly Tyr Ser Thr Leu Val
            100                 105                 110

Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
        115                 120                 125
```

<210> 28
<211> 139
<212> PRT
<213> Streptomyces avidinii

<220>
<221> misc_feature
<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47 and Glu117, Gly120, Try121 (mutein m1-9)

<400> 28

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

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

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

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

Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr Val Ala Trp Lys
65                  70                  75                  80
```

```
Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser Gly Gln Tyr
                85                  90                  95


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


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


Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
    130                 135


<210>  29
<211>  253
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Variable Heavy chain of Fab fragment m13B8.2

<400>  29

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


Ser Gln Ser Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr
            20                  25                  30


Thr Phe Gly Val His Trp Val Arg Gln Ser Pro Gly Lys Gly Leu Glu
        35                  40                  45


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


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


Phe Phe Lys Leu Asn Ser Leu Gln Pro Asp Asp Thr Ala Ile Tyr Tyr
                85                  90                  95


Cys Ala Lys Asn Asp Pro Gly Thr Gly Phe Ala Tyr Trp Gly Gln Gly
            100                 105                 110
```

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


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


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


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


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


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


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


Ala Trp Ser His Pro Gln Phe Glu Lys Gly Gly Gly Ser Gly Gly Gly
225                 230                 235                 240


Ser Gly Gly Ser Ala Trp Ser His Pro Gln Phe Glu Lys
                245                 250


<210>  30
<211>  218
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Variable Light chain of Fab Fragment m13B8.2

<400>  30

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


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

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

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

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

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

Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Gly Ile
            100                 105                 110

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

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

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

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

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

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

Lys Ser Phe Asn Arg Gly Glu Cys Gly Ser
    210                 215
```

<210> 31
<211> 119
<212> PRT
<213> Artificial Sequence

<220>

<223> Variable Light chain of anti-CD3 antibody OKT3

<400> 31

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

Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Arg Tyr
            20   25   30

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

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

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

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

Ala Arg Tyr Tyr Asp Asp His Tyr Cys Leu Asp Tyr Trp Gly Gln Gly
            100   105   110

Thr Thr Leu Thr Val Ser Ser
        115

<210> 32
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Variable Light chain of anti-CD3 antibody OKT3

<400> 32

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

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

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

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

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

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

Phe Gly Ser Gly Thr Lys Leu Glu Ile Asn
            100                 105
```

<210> 33
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> Variable Heavy chain of anti-CD28 antibody CD28.3

<400> 33

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

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

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

Tyr Pro Gly Ser Asn Asp Ile Gln Tyr Asn Ala Lys Phe Lys Gly Lys
    50                  55                  60

Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Val Tyr Met Glu Leu
65                  70                  75                  80

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

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

Met Val Thr Val
115

<210> 34
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Variable Light chain of anti-CD28 antibody CD28.3

<400> 34

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

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

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

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

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

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

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

<210> 35
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> MAT tag

<400> 35

His Asn His Arg His Lys His Gly Gly Gly Cys
1 5 10

<210> 36
<211> 1145
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> LFA-1alpha

<400> 36

Tyr Asn Leu Asp Val Arg Gly Ala Arg Ser Phe Ser Pro Pro Arg Ala
1 5 10 15

Gly Arg His Phe Gly Tyr Arg Val Leu Gln Val Gly Asn Gly Val Ile
20 25 30

Val Gly Ala Pro Gly Glu Gly Asn Ser Thr Gly Ser Leu Tyr Gln Cys
35 40 45

Gln Ser Gly Thr Gly His Cys Leu Pro Val Thr Leu Arg Gly Ser Asn
50 55 60

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

Gly Ser Ile Leu Ala Cys Asp Pro Gly Leu Ser Arg Thr Cys Asp Gln
85 90 95

Asn Thr Tyr Leu Ser Gly Leu Cys Tyr Leu Phe Arg Gln Asn Leu Gln
100 105 110

Gly Pro Met Leu Gln Gly Arg Pro Gly Phe Gln Glu Cys Ile Lys Gly
115 120 125

Asn Val Asp Leu Val Phe Leu Phe Asp Gly Ser Met Ser Leu Gln Pro
130 135 140

```
Asp Glu Phe Gln Lys Ile Leu Asp Phe Met Lys Asp Val Met Lys Lys
145                 150                 155                 160


Leu Ser Asn Thr Ser Tyr Gln Phe Ala Ala Val Gln Phe Ser Thr Ser
                165                 170                 175


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


Asp Ala Leu Leu Lys His Val Lys His Met Leu Leu Leu Thr Asn Thr
        195                 200                 205


Phe Gly Ala Ile Asn Tyr Val Ala Thr Glu Val Phe Arg Glu Glu Leu
    210                 215                 220


Gly Ala Arg Pro Asp Ala Thr Lys Val Leu Ile Ile Ile Thr Asp Gly
225                 230                 235                 240


Glu Ala Thr Asp Ser Gly Asn Ile Asp Ala Ala Lys Asp Ile Ile Arg
                245                 250                 255


Tyr Ile Ile Gly Ile Gly Lys His Phe Gln Thr Lys Glu Ser Gln Glu
            260                 265                 270


Thr Leu His Lys Phe Ala Ser Lys Pro Ala Ser Glu Phe Val Lys Ile
        275                 280                 285


Leu Asp Thr Phe Glu Lys Leu Lys Asp Leu Phe Thr Glu Leu Gln Lys
    290                 295                 300


Lys Ile Tyr Val Ile Glu Gly Thr Ser Lys Gln Asp Leu Thr Ser Phe
305                 310                 315                 320


Asn Met Glu Leu Ser Ser Ser Gly Ile Ser Ala Asp Leu Ser Arg Gly
                325                 330                 335


His Ala Val Val Gly Ala Val Gly Ala Lys Asp Trp Ala Gly Gly Phe
            340                 345                 350


Leu Asp Leu Lys Ala Asp Leu Gln Asp Asp Thr Phe Ile Gly Asn Glu
        355                 360                 365
```

```
Pro Leu Thr Pro Glu Val Arg Ala Gly Tyr Leu Gly Tyr Thr Val Thr
    370                 375                 380

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

Arg Tyr Gln His Met Gly Arg Val Leu Leu Phe Gln Glu Pro Gln Gly
                405                 410                 415

Gly Gly His Trp Ser Gln Val Gln Thr Ile His Gly Thr Gln Ile Gly
            420                 425                 430

Ser Tyr Phe Gly Gly Glu Leu Cys Gly Val Asp Val Asp Gln Asp Gly
        435                 440                 445

Glu Thr Glu Leu Leu Leu Ile Gly Ala Pro Leu Phe Tyr Gly Glu Gln
    450                 455                 460

Arg Gly Gly Arg Val Phe Ile Tyr Gln Arg Arg Gln Leu Gly Phe Glu
465                 470                 475                 480

Glu Val Ser Glu Leu Gln Gly Asp Pro Gly Tyr Pro Leu Gly Arg Phe
                485                 490                 495

Gly Glu Ala Ile Thr Ala Leu Thr Asp Ile Asn Gly Asp Gly Leu Val
            500                 505                 510

Asp Val Ala Val Gly Ala Pro Leu Glu Glu Gln Gly Ala Val Tyr Ile
        515                 520                 525

Phe Asn Gly Arg His Gly Gly Leu Ser Pro Gln Pro Ser Gln Arg Ile
    530                 535                 540

Glu Gly Thr Gln Val Leu Ser Gly Ile Gln Trp Phe Gly Arg Ser Ile
545                 550                 555                 560

His Gly Val Lys Asp Leu Glu Gly Asp Gly Leu Ala Asp Val Ala Val
                565                 570                 575
```

```
Gly Ala Glu Ser Gln Met Ile Val Leu Ser Ser Arg Pro Val Val Asp
            580                 585                 590

Met Val Thr Leu Met Ser Phe Ser Pro Ala Glu Ile Pro Val His Glu
        595                 600                 605

Val Glu Cys Ser Tyr Ser Thr Ser Asn Lys Met Lys Glu Gly Val Asn
    610                 615                 620

Ile Thr Ile Cys Phe Gln Ile Lys Ser Leu Ile Pro Gln Phe Gln Gly
625                 630                 635                 640

Arg Leu Val Ala Asn Leu Thr Tyr Thr Leu Gln Leu Asp Gly His Arg
                645                 650                 655

Thr Arg Arg Arg Gly Leu Phe Pro Gly Gly Arg His Glu Leu Arg Arg
            660                 665                 670

Asn Ile Ala Val Thr Thr Ser Met Ser Cys Thr Asp Phe Ser Phe His
        675                 680                 685

Phe Pro Val Cys Val Gln Asp Leu Ile Ser Pro Ile Asn Val Ser Leu
    690                 695                 700

Asn Phe Ser Leu Trp Glu Glu Glu Gly Thr Pro Arg Asp Gln Arg Ala
705                 710                 715                 720

Gln Gly Lys Asp Ile Pro Pro Ile Leu Arg Pro Ser Leu His Ser Glu
                725                 730                 735

Thr Trp Glu Ile Pro Phe Glu Lys Asn Cys Gly Glu Asp Lys Lys Cys
            740                 745                 750

Glu Ala Asn Leu Arg Val Ser Phe Ser Pro Ala Arg Ser Arg Ala Leu
        755                 760                 765

Arg Leu Thr Ala Phe Ala Ser Leu Ser Val Glu Leu Ser Leu Ser Asn
    770                 775                 780

Leu Glu Glu Asp Ala Tyr Trp Val Gln Leu Asp Leu His Phe Pro Pro
785                 790                 795                 800
```

```
Gly Leu Ser Phe Arg Lys Val Glu Met Leu Lys Pro His Ser Gln Ile
                805                 810                 815

Pro Val Ser Cys Glu Glu Leu Pro Glu Glu Ser Arg Leu Leu Ser Arg
            820                 825                 830

Ala Leu Ser Cys Asn Val Ser Ser Pro Ile Phe Lys Ala Gly His Ser
        835                 840                 845

Val Ala Leu Gln Met Met Phe Asn Thr Leu Val Asn Ser Ser Trp Gly
    850                 855                 860

Asp Ser Val Glu Leu His Ala Asn Val Thr Cys Asn Asn Glu Asp Ser
865                 870                 875                 880

Asp Leu Leu Glu Asp Asn Ser Ala Thr Thr Ile Ile Pro Ile Leu Tyr
                885                 890                 895

Pro Ile Asn Ile Leu Ile Gln Asp Gln Glu Asp Ser Thr Leu Tyr Val
            900                 905                 910

Ser Phe Thr Pro Lys Gly Pro Lys Ile His Gln Val Lys His Met Tyr
        915                 920                 925

Gln Val Arg Ile Gln Pro Ser Ile His Asp His Asn Ile Pro Thr Leu
    930                 935                 940

Glu Ala Val Val Gly Val Pro Gln Pro Pro Ser Glu Gly Pro Ile Thr
945                 950                 955                 960

His Gln Trp Ser Val Gln Met Glu Pro Pro Val Pro Cys His Tyr Glu
                965                 970                 975

Asp Leu Glu Arg Leu Pro Asp Ala Ala Glu Pro Cys Leu Pro Gly Ala
            980                 985                 990

Leu Phe Arg Cys Pro Val Val Phe  Arg Gln Glu Ile Leu  Val Gln Val
        995                 1000                1005
```

Ile Gly Thr Leu Glu Leu Val Gly Glu Ile Glu Ala Ser Ser Met
    1010   1015   1020

Phe Ser Leu Cys Ser Ser Leu Ser Ile Ser Phe Asn Ser Ser Lys
    1025   1030   1035

His Phe His Leu Tyr Gly Ser Asn Ala Ser Leu Ala Gln Val Val
    1040   1045   1050

Met Lys Val Asp Val Val Tyr Glu Lys Gln Met Leu Tyr Leu Tyr
    1055   1060   1065

Val Leu Ser Gly Ile Gly Gly Leu Leu Leu Leu Leu Leu Ile Phe
    1070   1075   1080

Ile Val Leu Tyr Lys Val Gly Phe Phe Lys Arg Asn Leu Lys Glu
    1085   1090   1095

Lys Met Glu Ala Gly Arg Gly Val Pro Asn Gly Ile Pro Ala Glu
    1100   1105   1110

Asp Ser Glu Gln Leu Ala Ser Gly Gln Glu Ala Gly Asp Pro Gly
    1115   1120   1125

Cys Leu Lys Pro Leu His Glu Lys Asp Ser Glu Ser Gly Gly Gly
    1130   1135   1140

Lys Asp
    1145

<210> 37
<211> 747
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> LFA-1beta

<400> 37

Gln Glu Cys Thr Lys Phe Lys Val Ser Ser Cys Arg Glu Cys Ile Glu
1   5   10   15

```
Ser Gly Pro Gly Cys Thr Trp Cys Gln Lys Leu Asn Phe Thr Gly Pro
            20                  25                  30

Gly Asp Pro Asp Ser Ile Arg Cys Asp Thr Arg Pro Gln Leu Leu Met
        35                  40                  45

Arg Gly Cys Ala Ala Asp Asp Ile Met Asp Pro Thr Ser Leu Ala Glu
    50                  55                  60

Thr Gln Glu Asp His Asn Gly Gly Gln Lys Gln Leu Ser Pro Gln Lys
65                  70                  75                  80

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

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

Leu Ser Tyr Ser Met Leu Asp Asp Leu Arg Asn Val Lys Lys Leu Gly
        115                 120                 125

Gly Asp Leu Leu Arg Ala Leu Asn Glu Ile Thr Glu Ser Gly Arg Ile
    130                 135                 140

Gly Phe Gly Ser Phe Val Asp Lys Thr Val Leu Pro Phe Val Asn Thr
145                 150                 155                 160

His Pro Asp Lys Leu Arg Asn Pro Cys Pro Asn Lys Glu Lys Glu Cys
                165                 170                 175

Gln Pro Pro Phe Ala Phe Arg His Val Leu Lys Leu Thr Asn Asn Ser
            180                 185                 190

Asn Gln Phe Gln Thr Glu Val Gly Lys Gln Leu Ile Ser Gly Asn Leu
        195                 200                 205

Asp Ala Pro Glu Gly Gly Leu Asp Ala Met Met Gln Val Ala Ala Cys
    210                 215                 220
```

```
Pro Glu Glu Ile Gly Trp Arg Asn Val Thr Arg Leu Leu Val Phe Ala
225                 230                 235                 240

Thr Asp Asp Gly Phe His Phe Ala Gly Asp Gly Lys Leu Gly Ala Ile
                245                 250                 255

Leu Thr Pro Asn Asp Gly Arg Cys His Leu Glu Asp Asn Leu Tyr Lys
            260                 265                 270

Arg Ser Asn Glu Phe Asp Tyr Pro Ser Val Gly Gln Leu Ala His Lys
        275                 280                 285

Leu Ala Glu Asn Asn Ile Gln Pro Ile Phe Ala Val Thr Ser Arg Met
    290                 295                 300

Val Lys Thr Tyr Glu Lys Leu Thr Glu Ile Ile Pro Lys Ser Ala Val
305                 310                 315                 320

Gly Glu Leu Ser Glu Asp Ser Ser Asn Val Val Gln Leu Ile Lys Asn
                325                 330                 335

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

Pro Asp Thr Leu Lys Val Thr Tyr Asp Ser Phe Cys Ser Asn Gly Val
        355                 360                 365

Thr His Arg Asn Gln Pro Arg Gly Asp Cys Asp Gly Val Gln Ile Asn
    370                 375                 380

Val Pro Ile Thr Phe Gln Val Lys Val Thr Ala Thr Glu Cys Ile Gln
385                 390                 395                 400

Glu Gln Ser Phe Val Ile Arg Ala Leu Gly Phe Thr Asp Ile Val Thr
                405                 410                 415

Val Gln Val Leu Pro Gln Cys Glu Cys Arg Cys Arg Asp Gln Ser Arg
            420                 425                 430

Asp Arg Ser Leu Cys His Gly Lys Gly Phe Leu Glu Cys Gly Ile Cys
        435                 440                 445
```

```
Arg Cys Asp Thr Gly Tyr Ile Gly Lys Asn Cys Glu Cys Gln Thr Gln
    450                 455                 460

Gly Arg Ser Ser Gln Glu Leu Glu Gly Ser Cys Arg Lys Asp Asn Asn
465                 470                 475                 480

Ser Ile Ile Cys Ser Gly Leu Gly Asp Cys Val Cys Gly Gln Cys Leu
                485                 490                 495

Cys His Thr Ser Asp Val Pro Gly Lys Leu Ile Tyr Gly Gln Tyr Cys
            500                 505                 510

Glu Cys Asp Thr Ile Asn Cys Glu Arg Tyr Asn Gly Gln Val Cys Gly
        515                 520                 525

Gly Pro Gly Arg Gly Leu Cys Phe Cys Gly Lys Cys Arg Cys His Pro
    530                 535                 540

Gly Phe Glu Gly Ser Ala Cys Gln Cys Glu Arg Thr Thr Glu Gly Cys
545                 550                 555                 560

Leu Asn Pro Arg Arg Val Glu Cys Ser Gly Arg Gly Arg Cys Arg Cys
                565                 570                 575

Asn Val Cys Glu Cys His Ser Gly Tyr Gln Leu Pro Leu Cys Gln Glu
            580                 585                 590

Cys Pro Gly Cys Pro Ser Pro Cys Gly Lys Tyr Ile Ser Cys Ala Glu
        595                 600                 605

Cys Leu Lys Phe Glu Lys Gly Pro Phe Gly Lys Asn Cys Ser Ala Ala
    610                 615                 620

Cys Pro Gly Leu Gln Leu Ser Asn Asn Pro Val Lys Gly Arg Thr Cys
625                 630                 635                 640

Lys Glu Arg Asp Ser Glu Gly Cys Trp Val Ala Tyr Thr Leu Glu Gln
                645                 650                 655
```

```
Gln Asp Gly Met Asp Arg Tyr Leu Ile Tyr Val Asp Glu Ser Arg Glu
            660                 665                 670

Cys Val Ala Gly Pro Asn Ile Ala Ala Ile Val Gly Gly Thr Val Ala
        675                 680                 685

Gly Ile Val Leu Ile Gly Ile Leu Leu Leu Val Ile Trp Lys Ala Leu
    690                 695                 700

Ile His Leu Ser Asp Leu Arg Glu Tyr Arg Arg Phe Glu Lys Glu Lys
705                 710                 715                 720

Leu Lys Ser Gln Trp Asn Asn Asp Asn Pro Leu Phe Lys Ser Ala Thr
                725                 730                 735

Thr Thr Val Met Asn Pro Lys Phe Ala Glu Ser
            740                 745
```

<210> 38
<211> 344
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> L-selectin

<400> 38

```
Asp Phe Leu Ala His His Gly Thr Asp Cys Trp Thr Tyr His Tyr Ser
1               5                   10                  15

Glu Lys Pro Met Asn Trp Gln Arg Ala Arg Arg Phe Cys Arg Asp Asn
            20                  25                  30

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

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

Lys Ile Gly Gly Ile Trp Thr Trp Val Gly Thr Asn Lys Ser Leu Thr
65                  70                  75                  80
```

```
Glu Glu Ala Glu Asn Trp Gly Asp Gly Glu Pro Asn Asn Lys Lys Asn
                85                  90                  95

Lys Glu Asp Cys Val Glu Ile Tyr Ile Lys Arg Asn Lys Asp Ala Gly
            100                 105                 110

Lys Trp Asn Asp Asp Ala Cys His Lys Leu Lys Ala Ala Leu Cys Tyr
        115                 120                 125

Thr Ala Ser Cys Gln Pro Trp Ser Cys Ser Gly His Gly Glu Cys Val
    130                 135                 140

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

Pro Gln Cys Gln Phe Val Ile Gln Cys Glu Pro Leu Glu Ala Pro Glu
                165                 170                 175

Leu Gly Thr Met Asp Cys Thr His Pro Leu Gly Asn Phe Ser Phe Ser
            180                 185                 190

Ser Gln Cys Ala Phe Ser Cys Ser Glu Gly Thr Asn Leu Thr Gly Ile
        195                 200                 205

Glu Glu Thr Thr Cys Gly Pro Phe Gly Asn Trp Ser Ser Pro Glu Pro
    210                 215                 220

Thr Cys Gln Val Ile Gln Cys Glu Pro Leu Ser Ala Pro Asp Leu Gly
225                 230                 235                 240

Ile Met Asn Cys Ser His Pro Leu Ala Ser Phe Ser Phe Thr Ser Ala
                245                 250                 255

Cys Thr Phe Ile Cys Ser Glu Gly Thr Glu Leu Ile Gly Lys Lys Lys
            260                 265                 270

Thr Ile Cys Glu Ser Ser Gly Ile Trp Ser Asn Pro Ser Pro Ile Cys
        275                 280                 285
```

```
Gln Lys Leu Asp Lys Ser Phe Ser Met Ile Lys Glu Gly Asp Tyr Asn
    290                 295                 300

Pro Leu Phe Ile Pro Val Ala Val Met Val Thr Ala Phe Ser Gly Leu
305                 310                 315                 320

Ala Phe Ile Ile Trp Leu Ala Arg Arg Leu Lys Lys Gly Lys Lys Ser
                325                 330                 335

Lys Arg Ser Met Asn Asp Pro Tyr
            340
```

<210> 39
<211> 715
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> VCAM-1

<400> 39

```
Phe Lys Ile Glu Thr Thr Pro Glu Ser Arg Tyr Leu Ala Gln Ile Gly
1               5                   10                  15

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

Phe Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Asn Gly Lys Val Thr
        35                  40                  45

Asn Glu Gly Thr Thr Ser Thr Leu Thr Met Asn Pro Val Ser Phe Gly
    50                  55                  60

Asn Glu His Ser Tyr Leu Cys Thr Ala Thr Cys Glu Ser Arg Lys Leu
65                  70                  75                  80

Glu Lys Gly Ile Gln Val Glu Ile Tyr Ser Phe Pro Lys Asp Pro Glu
                85                  90                  95

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

```
Cys Ser Val Ala Asp Val Tyr Pro Phe Asp Arg Leu Glu Ile Asp Leu
        115                 120                 125

Leu Lys Gly Asp His Leu Met Lys Ser Gln Glu Phe Leu Glu Asp Ala
    130                 135                 140

Asp Arg Lys Ser Leu Glu Thr Lys Ser Leu Glu Val Thr Phe Thr Pro
145                 150                 155                 160

Val Ile Glu Asp Ile Gly Lys Val Leu Val Cys Arg Ala Lys Leu His
                165                 170                 175

Ile Asp Glu Met Asp Ser Val Pro Thr Val Arg Gln Ala Val Lys Glu
            180                 185                 190

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

Ser Thr Lys Leu Gln Glu Gly Gly Ser Val Thr Met Thr Cys Ser Ser
    210                 215                 220

Glu Gly Leu Pro Ala Pro Glu Ile Phe Trp Ser Lys Lys Leu Asp Asn
225                 230                 235                 240

Gly Asn Leu Gln His Leu Ser Gly Asn Ala Thr Leu Thr Leu Ile Ala
                245                 250                 255

Met Arg Met Glu Asp Ser Gly Ile Tyr Val Cys Glu Gly Val Asn Leu
            260                 265                 270

Ile Gly Lys Asn Arg Lys Glu Val Glu Leu Ile Val Gln Glu Lys Pro
        275                 280                 285

Phe Thr Val Glu Ile Ser Pro Gly Pro Arg Ile Ala Ala Gln Ile Gly
    290                 295                 300

Asp Ser Val Met Leu Thr Cys Ser Val Met Gly Cys Glu Ser Pro Ser
305                 310                 315                 320
```

```
Phe Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Ser Gly Lys Val Arg
                325                 330                 335

Ser Glu Gly Thr Asn Ser Thr Leu Thr Leu Ser Pro Val Ser Phe Glu
            340                 345                 350

Asn Glu His Ser Tyr Leu Cys Thr Val Thr Cys Gly His Lys Lys Leu
        355                 360                 365

Glu Lys Gly Ile Gln Val Glu Leu Tyr Ser Phe Pro Arg Asp Pro Glu
    370                 375                 380

Ile Glu Met Ser Gly Gly Leu Val Asn Gly Ser Ser Val Thr Val Ser
385                 390                 395                 400

Cys Lys Val Pro Ser Val Tyr Pro Leu Asp Arg Leu Glu Ile Glu Leu
                405                 410                 415

Leu Lys Gly Glu Thr Ile Leu Glu Asn Ile Glu Phe Leu Glu Asp Thr
            420                 425                 430

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

Thr Ile Glu Asp Thr Gly Lys Ala Leu Val Cys Gln Ala Lys Leu His
    450                 455                 460

Ile Asp Asp Met Glu Phe Glu Pro Lys Gln Arg Gln Ser Thr Gln Thr
465                 470                 475                 480

Leu Tyr Val Asn Val Ala Pro Arg Asp Thr Thr Val Leu Val Ser Pro
                485                 490                 495

Ser Ser Ile Leu Glu Glu Gly Ser Ser Val Asn Met Thr Cys Leu Ser
            500                 505                 510

Gln Gly Phe Pro Ala Pro Lys Ile Leu Trp Ser Arg Gln Leu Pro Asn
        515                 520                 525

Gly Glu Leu Gln Pro Leu Ser Glu Asn Ala Thr Leu Thr Leu Ile Ser
    530                 535                 540
```

```
Thr Lys Met Glu Asp Ser Gly Val Tyr Leu Cys Glu Gly Ile Asn Gln
545                 550                 555                 560


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


Lys Asp Ile Lys Leu Thr Ala Phe Pro Ser Glu Ser Val Lys Glu Gly
            580                 585                 590


Asp Thr Val Ile Ile Ser Cys Thr Cys Gly Asn Val Pro Glu Thr Trp
        595                 600                 605


Ile Ile Leu Lys Lys Lys Ala Glu Thr Gly Asp Thr Val Leu Lys Ser
    610                 615                 620


Ile Asp Gly Ala Tyr Thr Ile Arg Lys Ala Gln Leu Lys Asp Ala Gly
625                 630                 635                 640


Val Tyr Glu Cys Glu Ser Lys Asn Lys Val Gly Ser Gln Leu Arg Ser
                645                 650                 655


Leu Thr Leu Asp Val Gln Gly Arg Glu Asn Asn Lys Asp Tyr Phe Ser
            660                 665                 670


Pro Glu Leu Leu Val Leu Tyr Phe Ala Ser Ser Leu Ile Ile Pro Ala
        675                 680                 685


Ile Gly Met Ile Ile Tyr Phe Ala Arg Lys Ala Asn Met Lys Gly Ser
    690                 695                 700


Tyr Ser Leu Val Glu Ala Gln Lys Ser Lys Val
705                 710                 715


<210>  40
<211>  999
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
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<223> VLA-4

<400> 40

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Tyr Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His Asn
1               5                  10                  15

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

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

Val Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn Pro
    50                  55                  60

Gly Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu Pro
65                  70                  75                  80

Cys Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly Val
                85                  90                  95

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

His Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu Pro
        115                 120                 125

Thr Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu Ser
    130                 135                 140

Lys Arg Ile Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly Glu
145                 150                 155                 160

Asn Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys Asp
                165                 170                 175

Leu Ile Val Met Gly Ala Pro Gly Ser Ser Tyr Trp Thr Gly Ser Leu
            180                 185                 190

Phe Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys Ala Phe Leu Asp Lys
        195                 200                 205
```

```
Gln Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly Tyr Ser Val Gly Ala
    210                 215                 220

Gly His Phe Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala Pro
225                 230                 235                 240

Gln His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser Ile Asp Glu Lys
                245                 250                 255

Glu Leu Asn Ile Leu His Glu Met Lys Gly Lys Lys Leu Gly Ser Tyr
            260                 265                 270

Phe Gly Ala Ser Val Cys Ala Val Asp Leu Asn Ala Asp Gly Phe Ser
        275                 280                 285

Asp Leu Leu Val Gly Ala Pro Met Gln Ser Thr Ile Arg Glu Glu Gly
    290                 295                 300

Arg Val Phe Val Tyr Ile Asn Ser Gly Ser Gly Ala Val Met Asn Ala
305                 310                 315                 320

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

Glu Ser Ile Val Asn Leu Gly Asp Ile Asp Asn Asp Gly Phe Glu Asp
            340                 345                 350

Val Ala Ile Gly Ala Pro Gln Glu Asp Asp Leu Gln Gly Ala Ile Tyr
        355                 360                 365

Ile Tyr Asn Gly Arg Ala Asp Gly Ile Ser Ser Thr Phe Ser Gln Arg
    370                 375                 380

Ile Glu Gly Leu Gln Ile Ser Lys Ser Leu Ser Met Phe Gly Gln Ser
385                 390                 395                 400

Ile Ser Gly Gln Ile Asp Ala Asp Asn Asn Gly Tyr Val Asp Val Ala
                405                 410                 415
```

```
Val Gly Ala Phe Arg Ser Asp Ser Ala Val Leu Leu Arg Thr Arg Pro
            420                 425                 430

Val Val Ile Val Asp Ala Ser Leu Ser His Pro Glu Ser Val Asn Arg
        435                 440                 445

Thr Lys Phe Asp Cys Val Glu Asn Gly Trp Pro Ser Val Cys Ile Asp
    450                 455                 460

Leu Thr Leu Cys Phe Ser Tyr Lys Gly Lys Glu Val Pro Gly Tyr Ile
465                 470                 475                 480

Val Leu Phe Tyr Asn Met Ser Leu Asp Val Asn Arg Lys Ala Glu Ser
                485                 490                 495

Pro Pro Arg Phe Tyr Phe Ser Ser Asn Gly Thr Ser Asp Val Ile Thr
            500                 505                 510

Gly Ser Ile Gln Val Ser Ser Arg Glu Ala Asn Cys Arg Thr His Gln
        515                 520                 525

Ala Phe Met Arg Lys Asp Val Arg Asp Ile Leu Thr Pro Ile Gln Ile
    530                 535                 540

Glu Ala Ala Tyr His Leu Gly Pro His Val Ile Ser Lys Arg Ser Thr
545                 550                 555                 560

Glu Glu Phe Pro Pro Leu Gln Pro Ile Leu Gln Gln Lys Lys Glu Lys
                565                 570                 575

Asp Ile Met Lys Lys Thr Ile Asn Phe Ala Arg Phe Cys Ala His Glu
            580                 585                 590

Asn Cys Ser Ala Asp Leu Gln Val Ser Ala Lys Ile Gly Phe Leu Lys
        595                 600                 605

Pro His Glu Asn Lys Thr Tyr Leu Ala Val Gly Ser Met Lys Thr Leu
    610                 615                 620

Met Leu Asn Val Ser Leu Phe Asn Ala Gly Asp Asp Ala Tyr Glu Thr
625                 630                 635                 640
```

```
Thr Leu His Val Lys Leu Pro Val Gly Leu Tyr Phe Ile Lys Ile Leu
                645                 650                 655

Glu Leu Glu Glu Lys Gln Ile Asn Cys Glu Val Thr Asp Asn Ser Gly
            660                 665                 670

Val Val Gln Leu Asp Cys Ser Ile Gly Tyr Ile Tyr Val Asp His Leu
        675                 680                 685

Ser Arg Ile Asp Ile Ser Phe Leu Leu Asp Val Ser Ser Leu Ser Arg
    690                 695                 700

Ala Glu Glu Asp Leu Ser Ile Thr Val His Ala Thr Cys Glu Asn Glu
705                 710                 715                 720

Glu Glu Met Asp Asn Leu Lys His Ser Arg Val Thr Val Ala Ile Pro
                725                 730                 735

Leu Lys Tyr Glu Val Lys Leu Thr Val His Gly Phe Val Asn Pro Thr
            740                 745                 750

Ser Phe Val Tyr Gly Ser Asn Asp Glu Asn Glu Pro Glu Thr Cys Met
        755                 760                 765

Val Glu Lys Met Asn Leu Thr Phe His Val Ile Asn Thr Gly Asn Ser
    770                 775                 780

Met Ala Pro Asn Val Ser Val Glu Ile Met Val Pro Asn Ser Phe Ser
785                 790                 795                 800

Pro Gln Thr Asp Lys Leu Phe Asn Ile Leu Asp Val Gln Thr Thr Thr
                805                 810                 815

Gly Glu Cys His Phe Glu Asn Tyr Gln Arg Val Cys Ala Leu Glu Gln
            820                 825                 830

Gln Lys Ser Ala Met Gln Thr Leu Lys Gly Ile Val Arg Phe Leu Ser
        835                 840                 845
```

```
Lys Thr Asp Lys Arg Leu Leu Tyr Cys Ile Lys Ala Asp Pro His Cys
    850                 855                 860

Leu Asn Phe Leu Cys Asn Phe Gly Lys Met Glu Ser Gly Lys Glu Ala
865                 870                 875                 880

Ser Val His Ile Gln Leu Glu Gly Arg Pro Ser Ile Leu Glu Met Asp
                885                 890                 895

Glu Thr Ser Ala Leu Lys Phe Glu Ile Arg Ala Thr Gly Phe Pro Glu
            900                 905                 910

Pro Asn Pro Arg Val Ile Glu Leu Asn Lys Asp Glu Asn Val Ala His
        915                 920                 925

Val Leu Leu Glu Gly Leu His His Gln Arg Pro Lys Arg Tyr Phe Thr
    930                 935                 940

Ile Val Ile Ile Ser Ser Ser Leu Leu Leu Gly Leu Ile Val Leu Leu
945                 950                 955                 960

Leu Ile Ser Tyr Val Met Trp Lys Ala Gly Phe Phe Lys Arg Gln Tyr
                965                 970                 975

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

Asn Ser Lys Ser Asn Asp Asp
        995


<210>  41
<211>  133
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<223>  IL-2

<400>  41

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>  42
<211>  129
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<223>  IL-4

<400>  42

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> 43
<211> 152
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> IL-7

<400> 43

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>  44
<211>  160
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<223>  IL-10

<400>  44

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>  45
<211>  133
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<223>  IL-15

<400>  45

Gly Ile His Val Phe Ile Leu Gly Cys Phe Ser Ala Gly Leu Pro Lys
1               5                   10                  15


Thr Glu Ala Asn Trp Val Asn Val Ile Ser Asp Leu Lys Lys Ile Glu
            20                  25                  30


Asp Leu Ile Gln Ser Met His Ile Asp Ala Thr Leu Tyr Thr Glu Ser
        35                  40                  45


Asp Val His Pro Ser Cys Lys Val Thr Ala Met Lys Cys Phe Leu Leu
    50                  55                  60


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

```
Thr Val Glu Asn Leu Ile Ile Leu Ala Asn Asn Ser Leu Ser Ser Asn
                85                  90                  95


Gly Asn Val Thr Glu Ser Gly Cys Lys Glu Cys Glu Glu Leu Glu Glu
            100                 105                 110


Lys Asn Ile Lys Glu Phe Leu Gln Ser Phe Val His Ile Val Gln Met
        115                 120                 125


Phe Ile Asn Thr Ser
    130


<210>  46
<211>  132
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<223>  IL-17

<400>  46

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>  47
<211>  103
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<223>  CXCL9

<400>  47

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>  48
<211>  77
```

<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> CXCL10

<400> 48

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> 49
<211> 77
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> CCL19

<400> 49

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

Ile Pro Gly Tyr Ile Val Arg Asn Phe His Tyr Leu Leu Ile Lys Asp
            20   25   30

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

Leu Cys Ala Pro Pro Asp Gln Pro Trp Val Glu Arg Ile Ile Gln Arg
    50   55   60

Leu Gln Arg Thr Ser Ala Lys Met Lys Arg Arg Ser Ser
65   70   75

<210> 50
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> CCL21

<400> 50

Ser Asp Gly Gly Ala Gln Asp Cys Cys Leu Lys Tyr Ser Gln Arg Lys
1   5   10   15

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

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

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

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

Arg Lys Asp Arg Gly Ala Ser Lys Thr Gly Lys Lys Gly Lys Gly Ser
                85   90   95

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

<210> 51
<211> 127
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> CCL25

<400> 51

Gln Gly Val Phe Glu Asp Cys Cys Leu Ala Tyr His Tyr Pro Ile Gly
1 5 10 15

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

Gly Ser Cys Asn Leu Pro Ala Ala Ile Phe Tyr Leu Pro Lys Arg His
35 40 45

Arg Lys Val Cys Gly Asn Pro Lys Ser Arg Glu Val Gln Arg Ala Met
50 55 60

Lys Leu Leu Asp Ala Arg Asn Lys Val Phe Ala Lys Leu His His Asn
65 70 75 80

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

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

Ser Lys Arg Asn Val Ser Leu Leu Ile Ser Ala Asn Ser Gly Leu
115 120 125

<210> 52
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> anti-CD16 antibody 3G8 VH

<400> 52

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

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

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

Trp Leu Ala His Ile Trp Trp Asp Asp Asp Lys Arg Tyr Asn Pro Ala
    50                  55                  60

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

Phe Leu Lys Ile Ala Ser Val Asp Thr Ala Asp Thr Ala Thr Tyr Tyr
                85                  90                  95

Cys Ala Gln Ile Asn Pro Ala Trp Phe Ala Tyr Trp Gly Gln Gly Thr
            100                 105                 110

Leu Val Thr Val Ser Ser
        115
```

<210> 53
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> anti-CD16 antibody 3G8 VL

<400> 53

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

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

Gly Asp Ser Phe Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
        35                  40                  45

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

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

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

Glu Asp Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 54
<211> 1065
<212> PRT
<213> Artificial Sequence

<220>
<223> LFA-1alpha Extracellular domain (ECD)

<400> 54

Tyr Asn Leu Asp Val Arg Gly Ala Arg Ser Phe Ser Pro Pro Arg Ala
1 5 10 15

Gly Arg His Phe Gly Tyr Arg Val Leu Gln Val Gly Asn Gly Val Ile
20 25 30

Val Gly Ala Pro Gly Glu Gly Asn Ser Thr Gly Ser Leu Tyr Gln Cys
35 40 45

Gln Ser Gly Thr Gly His Cys Leu Pro Val Thr Leu Arg Gly Ser Asn
50 55 60

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

Gly Ser Ile Leu Ala Cys Asp Pro Gly Leu Ser Arg Thr Cys Asp Gln
85 90 95

Asn Thr Tyr Leu Ser Gly Leu Cys Tyr Leu Phe Arg Gln Asn Leu Gln
100 105 110

Gly Pro Met Leu Gln Gly Arg Pro Gly Phe Gln Glu Cys Ile Lys Gly
115 120 125

Asn Val Asp Leu Val Phe Leu Phe Asp Gly Ser Met Ser Leu Gln Pro
130 135 140

```
Asp Glu Phe Gln Lys Ile Leu Asp Phe Met Lys Asp Val Met Lys Lys
145                 150                 155                 160


Leu Ser Asn Thr Ser Tyr Gln Phe Ala Ala Val Gln Phe Ser Thr Ser
                165                 170                 175


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


Asp Ala Leu Leu Lys His Val Lys His Met Leu Leu Leu Thr Asn Thr
        195                 200                 205


Phe Gly Ala Ile Asn Tyr Val Ala Thr Glu Val Phe Arg Glu Glu Leu
    210                 215                 220


Gly Ala Arg Pro Asp Ala Thr Lys Val Leu Ile Ile Ile Thr Asp Gly
225                 230                 235                 240


Glu Ala Thr Asp Ser Gly Asn Ile Asp Ala Ala Lys Asp Ile Ile Arg
                245                 250                 255


Tyr Ile Ile Gly Ile Gly Lys His Phe Gln Thr Lys Glu Ser Gln Glu
            260                 265                 270


Thr Leu His Lys Phe Ala Ser Lys Pro Ala Ser Glu Phe Val Lys Ile
        275                 280                 285


Leu Asp Thr Phe Glu Lys Leu Lys Asp Leu Phe Thr Glu Leu Gln Lys
    290                 295                 300


Lys Ile Tyr Val Ile Glu Gly Thr Ser Lys Gln Asp Leu Thr Ser Phe
305                 310                 315                 320


Asn Met Glu Leu Ser Ser Ser Gly Ile Ser Ala Asp Leu Ser Arg Gly
                325                 330                 335


His Ala Val Val Gly Ala Val Gly Ala Lys Asp Trp Ala Gly Gly Phe
            340                 345                 350
```

```
Leu Asp Leu Lys Ala Asp Leu Gln Asp Asp Thr Phe Ile Gly Asn Glu
        355                 360                 365

Pro Leu Thr Pro Glu Val Arg Ala Gly Tyr Leu Gly Tyr Thr Val Thr
    370                 375                 380

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

Arg Tyr Gln His Met Gly Arg Val Leu Leu Phe Gln Glu Pro Gln Gly
                405                 410                 415

Gly Gly His Trp Ser Gln Val Gln Thr Ile His Gly Thr Gln Ile Gly
            420                 425                 430

Ser Tyr Phe Gly Gly Glu Leu Cys Gly Val Asp Val Asp Gln Asp Gly
        435                 440                 445

Glu Thr Glu Leu Leu Leu Ile Gly Ala Pro Leu Phe Tyr Gly Glu Gln
    450                 455                 460

Arg Gly Gly Arg Val Phe Ile Tyr Gln Arg Arg Gln Leu Gly Phe Glu
465                 470                 475                 480

Glu Val Ser Glu Leu Gln Gly Asp Pro Gly Tyr Pro Leu Gly Arg Phe
                485                 490                 495

Gly Glu Ala Ile Thr Ala Leu Thr Asp Ile Asn Gly Asp Gly Leu Val
            500                 505                 510

Asp Val Ala Val Gly Ala Pro Leu Glu Glu Gln Gly Ala Val Tyr Ile
        515                 520                 525

Phe Asn Gly Arg His Gly Gly Leu Ser Pro Gln Pro Ser Gln Arg Ile
    530                 535                 540

Glu Gly Thr Gln Val Leu Ser Gly Ile Gln Trp Phe Gly Arg Ser Ile
545                 550                 555                 560

His Gly Val Lys Asp Leu Glu Gly Asp Gly Leu Ala Asp Val Ala Val
                565                 570                 575
```

```
Gly Ala Glu Ser Gln Met Ile Val Leu Ser Ser Arg Pro Val Val Asp
            580                 585                 590

Met Val Thr Leu Met Ser Phe Ser Pro Ala Glu Ile Pro Val His Glu
        595                 600                 605

Val Glu Cys Ser Tyr Ser Thr Ser Asn Lys Met Lys Glu Gly Val Asn
    610                 615                 620

Ile Thr Ile Cys Phe Gln Ile Lys Ser Leu Ile Pro Gln Phe Gln Gly
625                 630                 635                 640

Arg Leu Val Ala Asn Leu Thr Tyr Thr Leu Gln Leu Asp Gly His Arg
                645                 650                 655

Thr Arg Arg Arg Gly Leu Phe Pro Gly Gly Arg His Glu Leu Arg Arg
            660                 665                 670

Asn Ile Ala Val Thr Thr Ser Met Ser Cys Thr Asp Phe Ser Phe His
        675                 680                 685

Phe Pro Val Cys Val Gln Asp Leu Ile Ser Pro Ile Asn Val Ser Leu
    690                 695                 700

Asn Phe Ser Leu Trp Glu Glu Glu Gly Thr Pro Arg Asp Gln Arg Ala
705                 710                 715                 720

Gln Gly Lys Asp Ile Pro Pro Ile Leu Arg Pro Ser Leu His Ser Glu
                725                 730                 735

Thr Trp Glu Ile Pro Phe Glu Lys Asn Cys Gly Glu Asp Lys Lys Cys
            740                 745                 750

Glu Ala Asn Leu Arg Val Ser Phe Ser Pro Ala Arg Ser Arg Ala Leu
        755                 760                 765

Arg Leu Thr Ala Phe Ala Ser Leu Ser Val Glu Leu Ser Leu Ser Asn
    770                 775                 780
```

```
Leu Glu Glu Asp Ala Tyr Trp Val Gln Leu Asp Leu His Phe Pro Pro
785                 790                 795                 800


Gly Leu Ser Phe Arg Lys Val Glu Met Leu Lys Pro His Ser Gln Ile
                805                 810                 815


Pro Val Ser Cys Glu Glu Leu Pro Glu Glu Ser Arg Leu Leu Ser Arg
            820                 825                 830


Ala Leu Ser Cys Asn Val Ser Ser Pro Ile Phe Lys Ala Gly His Ser
        835                 840                 845


Val Ala Leu Gln Met Met Phe Asn Thr Leu Val Asn Ser Ser Trp Gly
    850                 855                 860


Asp Ser Val Glu Leu His Ala Asn Val Thr Cys Asn Asn Glu Asp Ser
865                 870                 875                 880


Asp Leu Leu Glu Asp Asn Ser Ala Thr Thr Ile Ile Pro Ile Leu Tyr
                885                 890                 895


Pro Ile Asn Ile Leu Ile Gln Asp Gln Glu Asp Ser Thr Leu Tyr Val
            900                 905                 910


Ser Phe Thr Pro Lys Gly Pro Lys Ile His Gln Val Lys His Met Tyr
        915                 920                 925


Gln Val Arg Ile Gln Pro Ser Ile His Asp His Asn Ile Pro Thr Leu
    930                 935                 940


Glu Ala Val Val Gly Val Pro Gln Pro Pro Ser Glu Gly Pro Ile Thr
945                 950                 955                 960


His Gln Trp Ser Val Gln Met Glu Pro Pro Val Pro Cys His Tyr Glu
                965                 970                 975


Asp Leu Glu Arg Leu Pro Asp Ala Ala Glu Pro Cys Leu Pro Gly Ala
            980                 985                 990


Leu Phe Arg Cys Pro Val Val Phe  Arg Gln Glu Ile Leu  Val Gln Val
        995                 1000                1005
```

Ile Gly Thr Leu Glu Leu Val Gly Glu Ile Glu Ala Ser Ser Met
    1010   1015   1020

Phe Ser Leu Cys Ser Ser Leu Ser Ile Ser Phe Asn Ser Ser Lys
    1025   1030   1035

His Phe His Leu Tyr Gly Ser Asn Ala Ser Leu Ala Gln Val Val
    1040   1045   1050

Met Lys Val Asp Val Val Tyr Glu Lys Gln Met Leu
    1055   1060   1065

<210> 55
<211> 678
<212> PRT
<213> Artificial Sequence

<220>
<223> LFA-1beta Extracellular Domain (ECD)

<400> 55

Gln Glu Cys Thr Lys Phe Lys Val Ser Ser Cys Arg Glu Cys Ile Glu
1   5   10   15

Ser Gly Pro Gly Cys Thr Trp Cys Gln Lys Leu Asn Phe Thr Gly Pro
            20   25   30

Gly Asp Pro Asp Ser Ile Arg Cys Asp Thr Arg Pro Gln Leu Leu Met
        35   40   45

Arg Gly Cys Ala Ala Asp Asp Ile Met Asp Pro Thr Ser Leu Ala Glu
    50   55   60

Thr Gln Glu Asp His Asn Gly Gly Gln Lys Gln Leu Ser Pro Gln Lys
65   70   75   80

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

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

```
Leu Ser Tyr Ser Met Leu Asp Asp Leu Arg Asn Val Lys Lys Leu Gly
        115                 120                 125

Gly Asp Leu Leu Arg Ala Leu Asn Glu Ile Thr Glu Ser Gly Arg Ile
    130                 135                 140

Gly Phe Gly Ser Phe Val Asp Lys Thr Val Leu Pro Phe Val Asn Thr
145                 150                 155                 160

His Pro Asp Lys Leu Arg Asn Pro Cys Pro Asn Lys Glu Lys Glu Cys
                165                 170                 175

Gln Pro Pro Phe Ala Phe Arg His Val Leu Lys Leu Thr Asn Asn Ser
            180                 185                 190

Asn Gln Phe Gln Thr Glu Val Gly Lys Gln Leu Ile Ser Gly Asn Leu
        195                 200                 205

Asp Ala Pro Glu Gly Gly Leu Asp Ala Met Met Gln Val Ala Ala Cys
    210                 215                 220

Pro Glu Glu Ile Gly Trp Arg Asn Val Thr Arg Leu Leu Val Phe Ala
225                 230                 235                 240

Thr Asp Asp Gly Phe His Phe Ala Gly Asp Gly Lys Leu Gly Ala Ile
                245                 250                 255

Leu Thr Pro Asn Asp Gly Arg Cys His Leu Glu Asp Asn Leu Tyr Lys
            260                 265                 270

Arg Ser Asn Glu Phe Asp Tyr Pro Ser Val Gly Gln Leu Ala His Lys
        275                 280                 285

Leu Ala Glu Asn Asn Ile Gln Pro Ile Phe Ala Val Thr Ser Arg Met
    290                 295                 300

Val Lys Thr Tyr Glu Lys Leu Thr Glu Ile Ile Pro Lys Ser Ala Val
305                 310                 315                 320
```

```
Gly Glu Leu Ser Glu Asp Ser Ser Asn Val Val Gln Leu Ile Lys Asn
                325                 330                 335

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

Pro Asp Thr Leu Lys Val Thr Tyr Asp Ser Phe Cys Ser Asn Gly Val
        355                 360                 365

Thr His Arg Asn Gln Pro Arg Gly Asp Cys Asp Gly Val Gln Ile Asn
    370                 375                 380

Val Pro Ile Thr Phe Gln Val Lys Val Thr Ala Thr Glu Cys Ile Gln
385                 390                 395                 400

Glu Gln Ser Phe Val Ile Arg Ala Leu Gly Phe Thr Asp Ile Val Thr
                405                 410                 415

Val Gln Val Leu Pro Gln Cys Glu Cys Arg Cys Arg Asp Gln Ser Arg
            420                 425                 430

Asp Arg Ser Leu Cys His Gly Lys Gly Phe Leu Glu Cys Gly Ile Cys
        435                 440                 445

Arg Cys Asp Thr Gly Tyr Ile Gly Lys Asn Cys Glu Cys Gln Thr Gln
    450                 455                 460

Gly Arg Ser Ser Gln Glu Leu Glu Gly Ser Cys Arg Lys Asp Asn Asn
465                 470                 475                 480

Ser Ile Ile Cys Ser Gly Leu Gly Asp Cys Val Cys Gly Gln Cys Leu
                485                 490                 495

Cys His Thr Ser Asp Val Pro Gly Lys Leu Ile Tyr Gly Gln Tyr Cys
            500                 505                 510

Glu Cys Asp Thr Ile Asn Cys Glu Arg Tyr Asn Gly Gln Val Cys Gly
        515                 520                 525

Gly Pro Gly Arg Gly Leu Cys Phe Cys Gly Lys Cys Arg Cys His Pro
    530                 535                 540
```

```
Gly Phe Glu Gly Ser Ala Cys Gln Cys Glu Arg Thr Thr Glu Gly Cys
545                 550                 555                 560


Leu Asn Pro Arg Arg Val Glu Cys Ser Gly Arg Gly Arg Cys Arg Cys
                565                 570                 575


Asn Val Cys Glu Cys His Ser Gly Tyr Gln Leu Pro Leu Cys Gln Glu
            580                 585                 590


Cys Pro Gly Cys Pro Ser Pro Cys Gly Lys Tyr Ile Ser Cys Ala Glu
        595                 600                 605


Cys Leu Lys Phe Glu Lys Gly Pro Phe Gly Lys Asn Cys Ser Ala Ala
    610                 615                 620


Cys Pro Gly Leu Gln Leu Ser Asn Asn Pro Val Lys Gly Arg Thr Cys
625                 630                 635                 640


Lys Glu Arg Asp Ser Glu Gly Cys Trp Val Ala Tyr Thr Leu Glu Gln
                645                 650                 655


Gln Asp Gly Met Asp Arg Tyr Leu Ile Tyr Val Asp Glu Ser Arg Glu
            660                 665                 670


Cys Val Ala Gly Pro Asn
        675


<210>  56
<211>  674
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VCAM-1 Extracellular Domain (ECD)

<400>  56

Phe Lys Ile Glu Thr Thr Pro Glu Ser Arg Tyr Leu Ala Gln Ile Gly
1               5                   10                  15


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

```
Phe Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Asn Gly Lys Val Thr
        35                  40                  45

Asn Glu Gly Thr Thr Ser Thr Leu Thr Met Asn Pro Val Ser Phe Gly
    50                  55                  60

Asn Glu His Ser Tyr Leu Cys Thr Ala Thr Cys Glu Ser Arg Lys Leu
65                  70                  75                  80

Glu Lys Gly Ile Gln Val Glu Ile Tyr Ser Phe Pro Lys Asp Pro Glu
                85                  90                  95

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

Cys Ser Val Ala Asp Val Tyr Pro Phe Asp Arg Leu Glu Ile Asp Leu
        115                 120                 125

Leu Lys Gly Asp His Leu Met Lys Ser Gln Glu Phe Leu Glu Asp Ala
    130                 135                 140

Asp Arg Lys Ser Leu Glu Thr Lys Ser Leu Glu Val Thr Phe Thr Pro
145                 150                 155                 160

Val Ile Glu Asp Ile Gly Lys Val Leu Val Cys Arg Ala Lys Leu His
                165                 170                 175

Ile Asp Glu Met Asp Ser Val Pro Thr Val Arg Gln Ala Val Lys Glu
            180                 185                 190

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

Ser Thr Lys Leu Gln Glu Gly Gly Ser Val Thr Met Thr Cys Ser Ser
    210                 215                 220

Glu Gly Leu Pro Ala Pro Glu Ile Phe Trp Ser Lys Lys Leu Asp Asn
225                 230                 235                 240
```

```
Gly Asn Leu Gln His Leu Ser Gly Asn Ala Thr Leu Thr Leu Ile Ala
                245                 250                 255

Met Arg Met Glu Asp Ser Gly Ile Tyr Val Cys Glu Gly Val Asn Leu
            260                 265                 270

Ile Gly Lys Asn Arg Lys Glu Val Glu Leu Ile Val Gln Glu Lys Pro
        275                 280                 285

Phe Thr Val Glu Ile Ser Pro Gly Pro Arg Ile Ala Ala Gln Ile Gly
    290                 295                 300

Asp Ser Val Met Leu Thr Cys Ser Val Met Gly Cys Glu Ser Pro Ser
305                 310                 315                 320

Phe Ser Trp Arg Thr Gln Ile Asp Ser Pro Leu Ser Gly Lys Val Arg
                325                 330                 335

Ser Glu Gly Thr Asn Ser Thr Leu Thr Leu Ser Pro Val Ser Phe Glu
            340                 345                 350

Asn Glu His Ser Tyr Leu Cys Thr Val Thr Cys Gly His Lys Lys Leu
        355                 360                 365

Glu Lys Gly Ile Gln Val Glu Leu Tyr Ser Phe Pro Arg Asp Pro Glu
    370                 375                 380

Ile Glu Met Ser Gly Gly Leu Val Asn Gly Ser Ser Val Thr Val Ser
385                 390                 395                 400

Cys Lys Val Pro Ser Val Tyr Pro Leu Asp Arg Leu Glu Ile Glu Leu
                405                 410                 415

Leu Lys Gly Glu Thr Ile Leu Glu Asn Ile Glu Phe Leu Glu Asp Thr
            420                 425                 430

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

Thr Ile Glu Asp Thr Gly Lys Ala Leu Val Cys Gln Ala Lys Leu His
    450                 455                 460
```

```
Ile Asp Asp Met Glu Phe Glu Pro Lys Gln Arg Gln Ser Thr Gln Thr
465                 470                 475                 480

Leu Tyr Val Asn Val Ala Pro Arg Asp Thr Thr Val Leu Val Ser Pro
                485                 490                 495

Ser Ser Ile Leu Glu Glu Gly Ser Ser Val Asn Met Thr Cys Leu Ser
            500                 505                 510

Gln Gly Phe Pro Ala Pro Lys Ile Leu Trp Ser Arg Gln Leu Pro Asn
        515                 520                 525

Gly Glu Leu Gln Pro Leu Ser Glu Asn Ala Thr Leu Thr Leu Ile Ser
    530                 535                 540

Thr Lys Met Glu Asp Ser Gly Val Tyr Leu Cys Glu Gly Ile Asn Gln
545                 550                 555                 560

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

Lys Asp Ile Lys Leu Thr Ala Phe Pro Ser Glu Ser Val Lys Glu Gly
            580                 585                 590

Asp Thr Val Ile Ile Ser Cys Thr Cys Gly Asn Val Pro Glu Thr Trp
        595                 600                 605

Ile Ile Leu Lys Lys Lys Ala Glu Thr Gly Asp Thr Val Leu Lys Ser
    610                 615                 620

Ile Asp Gly Ala Tyr Thr Ile Arg Lys Ala Gln Leu Lys Asp Ala Gly
625                 630                 635                 640

Val Tyr Glu Cys Glu Ser Lys Asn Lys Val Gly Ser Gln Leu Arg Ser
                645                 650                 655

Leu Thr Leu Asp Val Gln Gly Arg Glu Asn Asn Lys Asp Tyr Phe Ser
            660                 665                 670
```

Pro Glu

<210> 57
<211> 294
<212> PRT
<213> Artificial Sequence

<220>
<223> L-selectin Extracellular Domain (ECD)

<400> 57

```
Trp Thr Tyr His Tyr Ser Glu Lys Pro Met Asn Trp Gln Arg Ala Arg
1               5                  10                  15


Arg Phe Cys Arg Asp Asn Tyr Thr Asp Leu Val Ala Ile Gln Asn Lys
            20                  25                  30


Ala Glu Ile Glu Tyr Leu Glu Lys Thr Leu Pro Phe Ser Arg Ser Tyr
        35                  40                  45


Tyr Trp Ile Gly Ile Arg Lys Ile Gly Gly Ile Trp Thr Trp Val Gly
    50                  55                  60


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


Pro Asn Asn Lys Lys Asn Lys Glu Asp Cys Val Glu Ile Tyr Ile Lys
                85                  90                  95


Arg Asn Lys Asp Ala Gly Lys Trp Asn Asp Asp Ala Cys His Lys Leu
            100                 105                 110


Lys Ala Ala Leu Cys Tyr Thr Ala Ser Cys Gln Pro Trp Ser Cys Ser
        115                 120                 125


Gly His Gly Glu Cys Val Glu Ile Ile Asn Asn Tyr Thr Cys Asn Cys
    130                 135                 140


Asp Val Gly Tyr Tyr Gly Pro Gln Cys Gln Phe Val Ile Gln Cys Glu
145                 150                 155                 160
```

```
Pro Leu Glu Ala Pro Glu Leu Gly Thr Met Asp Cys Thr His Pro Leu
                165                 170                 175


Gly Asn Phe Ser Phe Ser Ser Gln Cys Ala Phe Ser Cys Ser Glu Gly
            180                 185                 190


Thr Asn Leu Thr Gly Ile Glu Glu Thr Thr Cys Gly Pro Phe Gly Asn
        195                 200                 205


Trp Ser Ser Pro Glu Pro Thr Cys Gln Val Ile Gln Cys Glu Pro Leu
    210                 215                 220


Ser Ala Pro Asp Leu Gly Ile Met Asn Cys Ser His Pro Leu Ala Ser
225                 230                 235                 240


Phe Ser Phe Thr Ser Ala Cys Thr Phe Ile Cys Ser Glu Gly Thr Glu
                245                 250                 255


Leu Ile Gly Lys Lys Lys Thr Ile Cys Glu Ser Ser Gly Ile Trp Ser
            260                 265                 270


Asn Pro Ser Pro Ile Cys Gln Lys Leu Asp Lys Ser Phe Ser Met Ile
        275                 280                 285


Lys Glu Gly Asp Tyr Asn
    290


<210>  58
<211>  943
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VLA-4 Extracellular Domain (ECD)

<400>  58

Asn Val Asp Thr Glu Ser Ala Leu Leu Tyr Gln Gly Pro His Asn Thr
1               5                   10                  15


Leu Phe Gly Tyr Ser Val Val Leu His Ser His Gly Ala Asn Arg Trp
            20                  25                  30
```

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

Ile Asn Pro Gly Ala Ile Tyr Arg Cys Arg Ile Gly Lys Asn Pro Gly
    50                  55                  60

Gln Thr Cys Glu Gln Leu Gln Leu Gly Ser Pro Asn Gly Glu Pro Cys
65                  70                  75                  80

Gly Lys Thr Cys Leu Glu Glu Arg Asp Asn Gln Trp Leu Gly Val Thr
                85                  90                  95

Leu Ser Arg Gln Pro Gly Glu Asn Gly Ser Ile Val Thr Cys Gly His
            100                 105                 110

Arg Trp Lys Asn Ile Phe Tyr Ile Lys Asn Glu Asn Lys Leu Pro Thr
        115                 120                 125

Gly Gly Cys Tyr Gly Val Pro Pro Asp Leu Arg Thr Glu Leu Ser Lys
    130                 135                 140

Arg Ile Ala Pro Cys Tyr Gln Asp Tyr Val Lys Lys Phe Gly Glu Asn
145                 150                 155                 160

Phe Ala Ser Cys Gln Ala Gly Ile Ser Ser Phe Tyr Thr Lys Asp Leu
                165                 170                 175

Ile Val Met Gly Ala Pro Gly Ser Ser Tyr Trp Thr Gly Ser Leu Phe
            180                 185                 190

Val Tyr Asn Ile Thr Thr Asn Lys Tyr Lys Ala Phe Leu Asp Lys Gln
        195                 200                 205

Asn Gln Val Lys Phe Gly Ser Tyr Leu Gly Tyr Ser Val Gly Ala Gly
    210                 215                 220

His Phe Arg Ser Gln His Thr Thr Glu Val Val Gly Gly Ala Pro Gln
225                 230                 235                 240

His Glu Gln Ile Gly Lys Ala Tyr Ile Phe Ser Ile Asp Glu Lys Glu
                245                 250                 255
```

```
Leu Asn Ile Leu His Glu Met Lys Gly Lys Lys Leu Gly Ser Tyr Phe
            260                 265                 270

Gly Ala Ser Val Cys Ala Val Asp Leu Asn Ala Asp Gly Phe Ser Asp
        275                 280                 285

Leu Leu Val Gly Ala Pro Met Gln Ser Thr Ile Arg Glu Glu Gly Arg
    290                 295                 300

Val Phe Val Tyr Ile Asn Ser Gly Ser Gly Ala Val Met Asn Ala Met
305                 310                 315                 320

Glu Thr Asn Leu Val Gly Ser Asp Lys Tyr Ala Ala Arg Phe Gly Glu
                325                 330                 335

Ser Ile Val Asn Leu Gly Asp Ile Asp Asn Asp Gly Phe Glu Asp Val
            340                 345                 350

Ala Ile Gly Ala Pro Gln Glu Asp Asp Leu Gln Gly Ala Ile Tyr Ile
        355                 360                 365

Tyr Asn Gly Arg Ala Asp Gly Ile Ser Ser Thr Phe Ser Gln Arg Ile
    370                 375                 380

Glu Gly Leu Gln Ile Ser Lys Ser Leu Ser Met Phe Gly Gln Ser Ile
385                 390                 395                 400

Ser Gly Gln Ile Asp Ala Asp Asn Asn Gly Tyr Val Asp Val Ala Val
                405                 410                 415

Gly Ala Phe Arg Ser Asp Ser Ala Val Leu Leu Arg Thr Arg Pro Val
            420                 425                 430

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

Lys Phe Asp Cys Val Glu Asn Gly Trp Pro Ser Val Cys Ile Asp Leu
    450                 455                 460
```

```
Thr Leu Cys Phe Ser Tyr Lys Gly Lys Glu Val Pro Gly Tyr Ile Val
465                 470                 475                 480

Leu Phe Tyr Asn Met Ser Leu Asp Val Asn Arg Lys Ala Glu Ser Pro
                485                 490                 495

Pro Arg Phe Tyr Phe Ser Ser Asn Gly Thr Ser Asp Val Ile Thr Gly
            500                 505                 510

Ser Ile Gln Val Ser Ser Arg Glu Ala Asn Cys Arg Thr His Gln Ala
        515                 520                 525

Phe Met Arg Lys Asp Val Arg Asp Ile Leu Thr Pro Ile Gln Ile Glu
    530                 535                 540

Ala Ala Tyr His Leu Gly Pro His Val Ile Ser Lys Arg Ser Thr Glu
545                 550                 555                 560

Glu Phe Pro Pro Leu Gln Pro Ile Leu Gln Gln Lys Lys Glu Lys Asp
                565                 570                 575

Ile Met Lys Lys Thr Ile Asn Phe Ala Arg Phe Cys Ala His Glu Asn
            580                 585                 590

Cys Ser Ala Asp Leu Gln Val Ser Ala Lys Ile Gly Phe Leu Lys Pro
        595                 600                 605

His Glu Asn Lys Thr Tyr Leu Ala Val Gly Ser Met Lys Thr Leu Met
    610                 615                 620

Leu Asn Val Ser Leu Phe Asn Ala Gly Asp Asp Ala Tyr Glu Thr Thr
625                 630                 635                 640

Leu His Val Lys Leu Pro Val Gly Leu Tyr Phe Ile Lys Ile Leu Glu
                645                 650                 655

Leu Glu Glu Lys Gln Ile Asn Cys Glu Val Thr Asp Asn Ser Gly Val
            660                 665                 670

Val Gln Leu Asp Cys Ser Ile Gly Tyr Ile Tyr Val Asp His Leu Ser
        675                 680                 685
```

```
Arg Ile Asp Ile Ser Phe Leu Leu Asp Val Ser Ser Leu Ser Arg Ala
    690                 695                 700

Glu Glu Asp Leu Ser Ile Thr Val His Ala Thr Cys Glu Asn Glu Glu
705                 710                 715                 720

Glu Met Asp Asn Leu Lys His Ser Arg Val Thr Val Ala Ile Pro Leu
                725                 730                 735

Lys Tyr Glu Val Lys Leu Thr Val His Gly Phe Val Asn Pro Thr Ser
            740                 745                 750

Phe Val Tyr Gly Ser Asn Asp Glu Asn Glu Pro Glu Thr Cys Met Val
        755                 760                 765

Glu Lys Met Asn Leu Thr Phe His Val Ile Asn Thr Gly Asn Ser Met
    770                 775                 780

Ala Pro Asn Val Ser Val Glu Ile Met Val Pro Asn Ser Phe Ser Pro
785                 790                 795                 800

Gln Thr Asp Lys Leu Phe Asn Ile Leu Asp Val Gln Thr Thr Thr Gly
                805                 810                 815

Glu Cys His Phe Glu Asn Tyr Gln Arg Val Cys Ala Leu Glu Gln Gln
            820                 825                 830

Lys Ser Ala Met Gln Thr Leu Lys Gly Ile Val Arg Phe Leu Ser Lys
        835                 840                 845

Thr Asp Lys Arg Leu Leu Tyr Cys Ile Lys Ala Asp Pro His Cys Leu
    850                 855                 860

Asn Phe Leu Cys Asn Phe Gly Lys Met Glu Ser Gly Lys Glu Ala Ser
865                 870                 875                 880

Val His Ile Gln Leu Glu Gly Arg Pro Ser Ile Leu Glu Met Asp Glu
                885                 890                 895
```

Thr Ser Ala Leu Lys Phe Glu Ile Arg Ala Thr Gly Phe Pro Glu Pro
900 905 910

Asn Pro Arg Val Ile Glu Leu Asn Lys Asp Glu Asn Val Ala His Val
915 920 925

Leu Leu Glu Gly Leu His His Gln Arg Pro Lys Arg Tyr Phe Thr
930 935 940

<210> 59
<211> 127
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MISC_FEATURE
<223> Minimal streptavidin

<400> 59

Met Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr
1 5 10 15

Phe Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Glu
20 25 30

Ser Ala Val Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr
35 40 45

Asp Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr
50 55 60

Val Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp
65 70 75 80

Ser Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp
85 90 95

Leu Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu
100 105 110

Val Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 60
<211> 127
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MISC_FEATURE
<223> Mutein Streptavidin Val44-Thr45-Ala46-Arg47

<400> 60

Met Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr
1 5 10 15

Phe Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Val
20 25 30

Thr Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr
35 40 45

Asp Ser Ala Pro Ala Thr Asp Gly Ser Gly Thr Ala Leu Gly Trp Thr
50 55 60

Val Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp
65 70 75 80

Ser Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp
85 90 95

Leu Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu
100 105 110

Val Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
115 120 125

<210> 61
<211> 126
<212> PRT
<213> Streptomyces avidinii

<220>
<221> MISC_FEATURE

<223> Mutein Streptavidin Ile44-Gly45-Ala-46-Arg47

<400> 61

```
Glu Ala Gly Ile Thr Gly Thr Trp Tyr Asn Gln Leu Gly Ser Thr Phe
1               5                  10                  15


Ile Val Thr Ala Gly Ala Asp Gly Ala Leu Thr Gly Thr Tyr Ile Gly
            20                  25                  30


Ala Arg Gly Asn Ala Glu Ser Arg Tyr Val Leu Thr Gly Arg Tyr Asp
        35                  40                  45


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


Ala Trp Lys Asn Asn Tyr Arg Asn Ala His Ser Ala Thr Thr Trp Ser
65                  70                  75                  80


Gly Gln Tyr Val Gly Gly Ala Glu Ala Arg Ile Asn Thr Gln Trp Leu
                85                  90                  95


Leu Thr Ser Gly Thr Thr Glu Ala Asn Ala Trp Lys Ser Thr Leu Val
            100                 105                 110


Gly His Asp Thr Phe Thr Lys Val Lys Pro Ser Ala Ala Ser
        115                 120                 125
```