SEQUENCE LISTING

<110> MacroGenics, Inc.
Loo, Deryk
Scribner, Juniper
Barat, Bhaswati
Diedrich, Gundo
Johnson, Leslie
Bonvini, Ezio

<120> ADAM9-Binding Molecules, and Methods of Use Thereof

<130> 1301.0147PCT

<150> US 62/438,516
<151> 2016-12-23

<160> 207

<170> PatentIn version 3.5

<210> 1
<211> 217
<212> PRT
<213> Homo sapiens

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<223> CH2-CH3 Domain of Human IgG1

<220>
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<223> Xaa is Lysine (K) or is Absent

<220>
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<222> (217)..(217)
<223> Xaa can be any naturally occurring amino acid

<400> 1

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

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
20 25 30

```
Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95

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

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215
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<210> 2
<211> 216
<212> PRT
<213> Homo sapiens

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<223> CH2-CH3 Domain of Human IgG2

<220>
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<222> (216)..(216)
<223> Xaa is Lysine (K) or is Absent

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


Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
            20                  25                  30


Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val
        35                  40                  45


Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
    50                  55                  60


Phe Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln
65                  70                  75                  80


Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly
                85                  90                  95


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


Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
        115                 120                 125
```

```
Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
    130                 135                 140

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

Lys Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
                165                 170                 175

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
            180                 185                 190

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
        195                 200                 205

Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215


<210>  3
<211>  217
<212>  PRT
<213>  Homo sapiens


<220>
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<223>  CH2-CH3 Domain of Human IgG3

<220>
<221>  MISC_FEATURE
<222>  (217)..(217)
<223>  Xaa is Lysine (K) or is Absent

<400>  3

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

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            20                  25                  30
```

```
Val Val Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Lys Trp Tyr
        35                  40                  45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60

Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95

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

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Ser Gly Gln Pro Glu Asn Asn
145                 150                 155                 160

Tyr Asn Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Ile
            180                 185                 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Phe Thr Gln
        195                 200                 205

Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215
```

<210> 4
<211> 217

<212> PRT
<213> Homo sapiens

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<223> CH2-CH3 Domain of Human IgG4

<220>
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<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 4

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


Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            20                  25                  30


Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr
        35                  40                  45


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60


Gln Phe Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95


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


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


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140
```

```
Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160


Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175


Tyr Ser Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val
            180                 185                 190


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205


Lys Ser Leu Ser Leu Ser Leu Gly Xaa
    210                 215


<210>  5
<211>  819
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<222>  (1)..(819)
<223>  Representative Human ADAM9 Polypeptide (NCBI Sequence NP_003807)

<220>
<221>  SIGNAL
<222>  (1)..(28)
<223>  Signal Sequence

<400>  5

Met Gly Ser Gly Ala Arg Phe Pro Ser Gly Thr Leu Arg Val Arg Trp
1               5                   10                  15


Leu Leu Leu Leu Gly Leu Val Gly Pro Val Leu Gly Ala Ala Arg Pro
            20                  25                  30


Gly Phe Gln Gln Thr Ser His Leu Ser Ser Tyr Glu Ile Ile Thr Pro
        35                  40                  45
```

```
Trp Arg Leu Thr Arg Glu Arg Arg Glu Ala Pro Arg Pro Tyr Ser Lys
    50                  55                  60

Gln Val Ser Tyr Val Ile Gln Ala Glu Gly Lys Glu His Ile Ile His
65                  70                  75                  80

Leu Glu Arg Asn Lys Asp Leu Leu Pro Glu Asp Phe Val Val Tyr Thr
                85                  90                  95

Tyr Asn Lys Glu Gly Thr Leu Ile Thr Asp His Pro Asn Ile Gln Asn
            100                 105                 110

His Cys His Tyr Arg Gly Tyr Val Glu Gly Val His Asn Ser Ser Ile
        115                 120                 125

Ala Leu Ser Asp Cys Phe Gly Leu Arg Gly Leu Leu His Leu Glu Asn
    130                 135                 140

Ala Ser Tyr Gly Ile Glu Pro Leu Gln Asn Ser Ser His Phe Glu His
145                 150                 155                 160

Ile Ile Tyr Arg Met Asp Asp Val Tyr Lys Glu Pro Leu Lys Cys Gly
                165                 170                 175

Val Ser Asn Lys Asp Ile Glu Lys Glu Thr Ala Lys Asp Glu Glu Glu
            180                 185                 190

Glu Pro Pro Ser Met Thr Gln Leu Leu Arg Arg Arg Arg Ala Val Leu
        195                 200                 205

Pro Gln Thr Arg Tyr Val Glu Leu Phe Ile Val Val Asp Lys Glu Arg
    210                 215                 220

Tyr Asp Met Met Gly Arg Asn Gln Thr Ala Val Arg Glu Glu Met Ile
225                 230                 235                 240
```

```
Leu Leu Ala Asn Tyr Leu Asp Ser Met Tyr Ile Met Leu Asn Ile Arg
                245                 250                 255

Ile Val Leu Val Gly Leu Glu Ile Trp Thr Asn Gly Asn Leu Ile Asn
            260                 265                 270

Ile Val Gly Gly Ala Gly Asp Val Leu Gly Asn Phe Val Gln Trp Arg
        275                 280                 285

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

Leu Lys Lys Gly Phe Gly Gly Thr Ala Gly Met Ala Phe Val Gly Thr
305                 310                 315                 320

Val Cys Ser Arg Ser His Ala Gly Gly Ile Asn Val Phe Gly Gln Ile
                325                 330                 335

Thr Val Glu Thr Phe Ala Ser Ile Val Ala His Glu Leu Gly His Asn
            340                 345                 350

Leu Gly Met Asn His Asp Asp Gly Arg Asp Cys Ser Cys Gly Ala Lys
        355                 360                 365

Ser Cys Ile Met Asn Ser Gly Ala Ser Gly Ser Arg Asn Phe Ser Ser
    370                 375                 380

Cys Ser Ala Glu Asp Phe Glu Lys Leu Thr Leu Asn Lys Gly Gly Asn
385                 390                 395                 400

Cys Leu Leu Asn Ile Pro Lys Pro Asp Glu Ala Tyr Ser Ala Pro Ser
                405                 410                 415

Cys Gly Asn Lys Leu Val Asp Ala Gly Glu Glu Cys Asp Cys Gly Thr
            420                 425                 430

Pro Lys Glu Cys Glu Leu Asp Pro Cys Cys Glu Gly Ser Thr Cys Lys
        435                 440                 445
```

```
Leu Lys Ser Phe Ala Glu Cys Ala Tyr Gly Asp Cys Cys Lys Asp Cys
    450                 455                 460

Arg Phe Leu Pro Gly Gly Thr Leu Cys Arg Gly Lys Thr Ser Glu Cys
465                 470                 475                 480

Asp Val Pro Glu Tyr Cys Asn Gly Ser Ser Gln Phe Cys Gln Pro Asp
                485                 490                 495

Val Phe Ile Gln Asn Gly Tyr Pro Cys Gln Asn Asn Lys Ala Tyr Cys
            500                 505                 510

Tyr Asn Gly Met Cys Gln Tyr Tyr Asp Ala Gln Cys Gln Val Ile Phe
        515                 520                 525

Gly Ser Lys Ala Lys Ala Ala Pro Lys Asp Cys Phe Ile Glu Val Asn
    530                 535                 540

Ser Lys Gly Asp Arg Phe Gly Asn Cys Gly Phe Ser Gly Asn Glu Tyr
545                 550                 555                 560

Lys Lys Cys Ala Thr Gly Asn Ala Leu Cys Gly Lys Leu Gln Cys Glu
                565                 570                 575

Asn Val Gln Glu Ile Pro Val Phe Gly Ile Val Pro Ala Ile Ile Gln
            580                 585                 590

Thr Pro Ser Arg Gly Thr Lys Cys Trp Gly Val Asp Phe Gln Leu Gly
        595                 600                 605

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

Ala Gly Lys Ile Cys Arg Asn Phe Gln Cys Val Asp Ala Ser Val Leu
625                 630                 635                 640
```

```
Asn Tyr Asp Cys Asp Val Gln Lys Lys Cys His Gly His Gly Val Cys
                645                 650                 655

Asn Ser Asn Lys Asn Cys His Cys Glu Asn Gly Trp Ala Pro Pro Asn
            660                 665                 670

Cys Glu Thr Lys Gly Tyr Gly Gly Ser Val Asp Ser Gly Pro Thr Tyr
        675                 680                 685

Asn Glu Met Asn Thr Ala Leu Arg Asp Gly Leu Leu Val Phe Phe Phe
    690                 695                 700

Leu Ile Val Pro Leu Ile Val Cys Ala Ile Phe Ile Phe Ile Lys Arg
705                 710                 715                 720

Asp Gln Leu Trp Arg Ser Tyr Phe Arg Lys Lys Arg Ser Gln Thr Tyr
                725                 730                 735

Glu Ser Asp Gly Lys Asn Gln Ala Asn Pro Ser Arg Gln Pro Gly Ser
            740                 745                 750

Val Pro Arg His Val Ser Pro Val Thr Pro Pro Arg Glu Val Pro Ile
        755                 760                 765

Tyr Ala Asn Arg Phe Ala Val Pro Thr Tyr Ala Ala Lys Gln Pro Gln
    770                 775                 780

Gln Phe Pro Ser Arg Pro Pro Pro Pro Gln Pro Lys Val Ser Ser Gln
785                 790                 795                 800

Gly Asn Leu Ile Pro Ala Arg Pro Ala Pro Ala Pro Pro Leu Tyr Ser
                805                 810                 815

Ser Leu Thr
```

<210> 6
<211> 819

<212> PRT
<213> Macaca fascicularis

<220>
<221> MISC_FEATURE
<222> (1)..(819)
<223> Representative Cynomolgus Monkey ADAM9 Polypeptide (NCBI Sequence XM_005563126.2)

<220>
<221> SIGNAL
<222> (1)..(28)
<223> Possible Signal Sequence

<400> 6

Met Gly Ser Gly Val Gly Ser Pro Ser Gly Thr Leu Arg Val Arg Trp
1 5 10 15

Leu Leu Leu Leu Cys Leu Val Gly Pro Val Leu Gly Ala Ala Arg Pro
20 25 30

Gly Phe Gln Gln Thr Ser His Leu Ser Ser Tyr Glu Ile Ile Thr Pro
35 40 45

Trp Arg Leu Thr Arg Glu Arg Arg Glu Ala Pro Arg Pro Tyr Ser Lys
50 55 60

Gln Val Ser Tyr Leu Ile Gln Ala Glu Gly Lys Glu His Ile Ile His
65 70 75 80

Leu Glu Arg Asn Lys Asp Leu Leu Pro Glu Asp Phe Val Val Tyr Thr
85 90 95

Tyr Asn Lys Glu Gly Thr Val Ile Thr Asp His Pro Asn Ile Gln Asn
100 105 110

His Cys His Phe Arg Gly Tyr Val Glu Gly Val Tyr Asn Ser Ser Val
115 120 125

Ala Leu Ser Asn Cys Phe Gly Leu Arg Gly Leu Leu His Leu Glu Asn

```
    130                 135                 140

Ala Ser Tyr Gly Ile Glu Pro Leu Gln Asn Ser Ser His Phe Glu His
145                 150                 155                 160

Ile Ile Tyr Arg Met Asp Asp Val His Lys Glu Pro Leu Lys Cys Gly
                165                 170                 175

Val Ser Asn Lys Asp Ile Glu Lys Glu Thr Thr Lys Asp Glu Glu Glu
            180                 185                 190

Glu Pro Pro Ser Met Thr Gln Leu Leu Arg Arg Arg Arg Ala Val Leu
        195                 200                 205

Pro Gln Thr Arg Tyr Val Glu Leu Phe Ile Val Val Asp Lys Glu Arg
    210                 215                 220

Tyr Asp Met Met Gly Arg Asn Gln Thr Ala Val Arg Glu Glu Met Ile
225                 230                 235                 240

Leu Leu Ala Asn Tyr Leu Asp Ser Met Tyr Ile Met Leu Asn Ile Arg
                245                 250                 255

Ile Val Leu Val Gly Leu Glu Ile Trp Thr Asn Gly Asn Leu Ile Asn
            260                 265                 270

Ile Ala Gly Gly Ala Gly Asp Val Leu Gly Asn Phe Val Gln Trp Arg
        275                 280                 285

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

Leu Lys Lys Gly Phe Gly Gly Thr Ala Gly Met Ala Phe Val Gly Thr
305                 310                 315                 320

Val Cys Ser Arg Ser His Ala Gly Gly Ile Asn Val Phe Gly His Ile
                325                 330                 335
```

```
Thr Val Glu Thr Phe Ala Ser Ile Val Ala His Glu Leu Gly His Asn
            340                 345                 350

Leu Gly Met Asn His Asp Asp Gly Arg Asp Cys Ser Cys Gly Ala Lys
        355                 360                 365

Ser Cys Ile Met Asn Ser Gly Ala Ser Gly Ser Arg Asn Phe Ser Ser
    370                 375                 380

Cys Ser Ala Glu Asp Phe Glu Lys Leu Thr Leu Asn Lys Gly Gly Asn
385                 390                 395                 400

Cys Leu Leu Asn Ile Pro Lys Pro Asp Glu Ala Tyr Ser Ala Pro Ser
                405                 410                 415

Cys Gly Asn Lys Leu Val Asp Ala Gly Glu Glu Cys Asp Cys Gly Thr
            420                 425                 430

Pro Lys Glu Cys Glu Leu Asp Pro Cys Cys Glu Gly Ser Thr Cys Lys
        435                 440                 445

Leu Lys Ser Phe Ala Glu Cys Ala Tyr Gly Asp Cys Cys Lys Asp Cys
    450                 455                 460

Arg Phe Leu Pro Gly Gly Thr Leu Cys Arg Gly Lys Thr Ser Glu Cys
465                 470                 475                 480

Asp Val Pro Glu Tyr Cys Asn Gly Ser Ser Gln Phe Cys Gln Pro Asp
                485                 490                 495

Val Phe Ile Gln Asn Gly Tyr Pro Cys Gln Asn Asn Lys Ala Tyr Cys
            500                 505                 510

Tyr Asn Gly Met Cys Gln Tyr Tyr Asp Ala Gln Cys Gln Val Ile Phe
        515                 520                 525

Gly Ser Lys Ala Lys Ala Ala Pro Lys Asp Cys Phe Ile Glu Val Asn
```

```
    530                 535                 540

Ser Lys Gly Asp Arg Phe Gly Asn Cys Gly Phe Ser Gly Asn Glu Tyr
545                 550                 555                 560

Lys Lys Cys Ala Thr Gly Asn Ala Leu Cys Gly Lys Leu Gln Cys Glu
                565                 570                 575

Asn Val Gln Glu Ile Pro Val Phe Gly Ile Val Pro Ala Ile Ile Gln
            580                 585                 590

Thr Pro Ser Arg Gly Thr Lys Cys Trp Gly Val Asp Phe Gln Leu Gly
        595                 600                 605

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

Ala Asp Lys Ile Cys Arg Asn Phe Gln Cys Val Asp Ala Ser Val Leu
625                 630                 635                 640

Asn Tyr Asp Cys Asp Ile Gln Lys Lys Cys His Gly His Gly Val Cys
                645                 650                 655

Asn Ser Asn Lys Asn Cys His Cys Glu Asn Gly Trp Ala Pro Pro Asn
            660                 665                 670

Cys Glu Thr Lys Gly Tyr Gly Gly Ser Val Asp Ser Gly Pro Thr Tyr
        675                 680                 685

Asn Glu Met Asn Thr Ala Leu Arg Asp Gly Leu Leu Val Phe Phe Phe
    690                 695                 700

Leu Ile Val Pro Leu Ile Val Cys Ala Ile Phe Ile Phe Ile Lys Arg
705                 710                 715                 720

Asp Gln Leu Trp Arg Arg Tyr Phe Arg Lys Lys Arg Ser Gln Thr Tyr
                725                 730                 735
```

```
Glu Ser Asp Gly Lys Asn Gln Ala Asn Pro Ser Arg Gln Pro Val Ser
            740                 745                 750

Val Pro Arg His Val Ser Pro Val Thr Pro Pro Arg Glu Val Pro Ile
        755                 760                 765

Tyr Ala Asn Arg Phe Pro Val Pro Thr Tyr Ala Ala Lys Gln Pro Gln
    770                 775                 780

Gln Phe Pro Ser Arg Pro Pro Pro Pro Gln Pro Lys Val Ser Ser Gln
785                 790                 795                 800

Gly Asn Leu Ile Pro Ala Arg Pro Ala Pro Ala Pro Pro Leu Tyr Ser
                805                 810                 815

Ser Leu Thr
```

<210> 7
<211> 123
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(123)
<223> VH Domain of Murine Anti-ADAM9 Antibody MAB-A

<400> 7

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

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

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
            100   105   110

Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser
        115   120

<210> 8
<211> 5
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(5)
<223> CDRH1 Domain of Anti-ADAM9 Antibody MAB-A

<400> 8

Ser Tyr Trp Met His
1   5

<210> 9
<211> 17
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(17)
<223> CDRH2 Domain of Anti-ADAM9 Antibody MAB-A

<400> 9

```
Glu Ile Ile Pro Ile Asn Gly His Thr Asn Tyr Asn Glu Lys Phe Lys
1               5                   10                  15


Ser
```

<210> 10
<211> 14
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(14)
<223> CDRH3 Domain of Anti-ADAM9 Antibody MAB-A

<400> 10

```
Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
1               5                   10
```

<210> 11
<211> 111
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(111)
<223> VL Domain of Murine Anti-ADAM9 Antibody MAB-A

<400> 11

```
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 Tyr Asp
            20                  25                  30


Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Ile Pro Gly Gln Pro Pro
        35                  40                  45
```

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

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

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

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

<210> 12
<211> 15
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(15)
<223> CDRL1 Domain of Anti-ADAM9 Antibody MAB-A

<400> 12

```
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Tyr Met Asn
1               5                   10                  15
```

<210> 13
<211> 7
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(7)
<223> CDRL2 Domain of Anti-ADAM9 Antibody MAB-A

<400> 13

```
Ala Ala Ser Asp Leu Glu Ser
1               5
```

<210> 14
<211> 9
<212> PRT
<213> Mus musculus

<220>
<221> MISC_FEATURE
<222> (1)..(9)
<223> CDRL3 Domain of Anti-ADAM9 Antibody MAB-A

<400> 14

Gln Gln Ser His Glu Asp Pro Phe Thr
1 5

<210> 15
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized/Optimized VH Domain of Murine Anti-ADAM9 Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (34)..(34)
<223> XAA is Methionine (M) or Isoleucine (I)

<220>
<221> MISC_FEATURE
<222> (55)..(55)
<223> XAA is Asparagine (N) or Phenylalanine (F)

<220>
<221> MISC_FEATURE
<222> (63)..(63)
<223> XAA is Lysine (K) or Arginine (R)

<220>
<221> MISC_FEATURE
<222> (65)..(65)
<223> XAA is Lysine (K) or Glutamine (Q)

<220>
<221> MISC_FEATURE
<222> (66)..(66)
<223> XAA is Serine (S) or Glycine (E)

<220>
<221> MISC_FEATURE
<222> (105)..(105)
<223> XAA is Proline (P), Phenylalanine (F), Tyrosine (Y), Tryptophan (W), Isoleuciine (I), Leucine (L), Valine (V), Threonine (T), Glycine (G) or Aspartate (D)

<220>
<221> MISC_FEATURE
<222> (106)..(106)
<223> XAA is Lysine (K), Arginine (R), Glycine (G), Asparagine (N), Histidine (H), or Serine (S)

<220>
<221> MISC_FEATURE
<222> (107)..(107)
<223> XAA is Phenylalanine (F), Methionine (M), Serine (S), Lysine (K) or Asparagine (N)

<220>
<221> MISC_FEATURE
<222> (108)..(108)
<223> XAA is Glycine (G) or Alanine (A)

<220>
<221> MISC_FEATURE
<222> (109)..(109)
<223> XAA is Valine (V), Threonine (T), Tryptophan (W) or Phenylalanine (F)

<220>
<221> MISC_FEATURE
<222> (109)..(109)
<223> XAA is Methionine (M), Leucine (L) or Lysine (K)

<220>
<221> misc_feature
<222> (110)..(110)
<223> Xaa can be any naturally occurring amino acid

<400> 15

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

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

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


Gly Glu Ile Ile Pro Ile Xaa Gly His Thr Asn Tyr Asn Glu Xaa Phe
    50                  55                  60


Xaa Xaa Arg Phe Thr Ile Ser Leu Asp Asn Ser Lys Asn Thr Leu Tyr
65                  70                  75                  80


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


Ala Arg Gly Gly Tyr Tyr Tyr Tyr Xaa Xaa Xaa Xaa Xaa Xaa Asp Tyr
            100                 105                 110


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210>  16
<211>  123
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH(1) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VH(1))

<400>  16

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


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


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


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

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


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


Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
            100                 105                 110


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210>  17
<211>  123
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH(2) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VH(2))

<400>  17

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


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


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


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


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


Leu Gln Met Gly Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
```

85 90 95

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 18
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(3) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(3))

<400> 18

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

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

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 19
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(4) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VH(4))

<400> 19

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

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

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
            100   105   110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 20
<211> 123
<212> PRT

<213> Artificial Sequence

<220>
<223> VH(2A) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2A))

<400> 20

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

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

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

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

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

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

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

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 21
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2B) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2B))

<400> 21

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


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


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


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


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


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


Ala Arg Gly Gly Tyr Tyr Tyr Tyr Ile Gly Lys Gly Val Leu Asp Tyr
            100                 105                 110


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210>  22
<211>  123
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH(2C) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VH(2C))

<400>  22

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


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

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


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


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


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


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


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210>  23
<211>  123
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH(2D) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VH(2D))

<400>  23

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


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


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


Gly Glu Ile Ile Pro Ile Phe Gly His Thr Asn Tyr Asn Glu Lys Phe
```

```
    50                  55                  60

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Thr Gly Lys Gly Val Leu Asp Tyr
            100                 105                 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 24
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2E) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2E))

<400> 24

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

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

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

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

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

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


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


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120
```

<210> 25
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2F) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2F))

<400> 25

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


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


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


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


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


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


Ala Arg Gly Gly Tyr Tyr Tyr Tyr Phe His Ser Gly Thr Leu Asp Tyr
            100                 105                 110
```

```
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210>  26
<211>  123
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH(2G) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VH(2G))

<400>  26

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


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


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


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


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


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


Ala Arg Gly Gly Tyr Tyr Tyr Tyr Phe Asn Lys Ala Val Leu Asp Tyr
            100                 105                 110


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115                 120


<210>  27
<211>  123
```

<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2H) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2H))

<400> 27

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

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

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Gly Ser Gly Val Leu Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 28
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2I) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2I))

<400> 28

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

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

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Pro Arg Gln Gly Phe Leu Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 29
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2J) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VH(2J))

<400> 29

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr

20 25 30

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Tyr Asn Ser Gly Thr Leu Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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

<220>
<223> FRH1 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody MAB-A

<400> 30

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

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

<210> 31
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> FRH2 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody
       MAB-A

<400> 31

Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Gly
1   5   10

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

<220>
<223> FRH3 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody
       MAB-A

<400> 32

Arg Phe Thr Ile Ser Leu Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln
1   5   10   15

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

<210> 33
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> FRH4 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody
       MAB-A

<400> 33

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
1   5   10

<210> 34
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH1 Domain of Anti-ADAM9-Antibody MAB-A

<400> 34

Ser Tyr Trp Ile His
1   5

<210> 35
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH2 Domain of Anti-ADAM9-Antibody MAB-A

<400> 35

Glu Ile Ile Pro Ile Phe Gly His Thr Asn Tyr Asn Glu Lys Phe Lys
1   5   10   15

Ser

<210> 36
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH2 Domain of Anti-ADAM9-Antibody MAB-A

<400> 36

Glu Ile Ile Pro Ile Phe Gly His Thr Asn Tyr Asn Glu Arg Phe Gln
1   5   10   15

Gly

<210> 37
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 37

Gly Gly Tyr Tyr Tyr Tyr Phe Asn Ser Gly Thr Leu Asp Tyr
1   5   10

<210> 38
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 38

Gly Gly Tyr Tyr Tyr Tyr Ile Gly Lys Gly Val Leu Asp Tyr
1   5   10

<210> 39
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 39

Gly Gly Tyr Tyr Tyr Tyr Pro Arg Phe Gly Trp Leu Asp Tyr
1   5   10

<210> 40
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 40

Gly Gly Tyr Tyr Tyr Tyr Thr Gly Lys Gly Val Leu Asp Tyr
1   5   10

<210> 41
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 41

Gly Gly Tyr Tyr Tyr Tyr Asp Ser Asn Ala Val Leu Asp Tyr
1   5   10

<210> 42
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 42

Gly Gly Tyr Tyr Tyr Tyr Phe His Ser Gly Thr Leu Asp Tyr
1   5   10

<210> 43
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 43

Gly Gly Tyr Tyr Tyr Tyr Phe Asn Lys Ala Val Leu Asp Tyr
1   5   10

<210> 44
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 44

Gly Gly Tyr Tyr Tyr Tyr Gly Gly Ser Gly Val Leu Asp Tyr
1 5 10

<210> 45
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 45

Gly Gly Tyr Tyr Tyr Tyr Pro Arg Gln Gly Phe Leu Asp Tyr
1 5 10

<210> 46
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<400> 46

Gly Gly Tyr Tyr Tyr Tyr Tyr Asn Ser Gly Thr Leu Asp Tyr
1 5 10

<210> 47
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus CDRH1 Domain of Anti-ADAM9 Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is Methionine (M) or Serine (S)

<400> 47

Ser Tyr Trp Xaa His
1   5

<210> 48
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus CDRH2 Domain of Anti-ADAM9-Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa is Asparagine (N) or Phenylalanine (F)

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa is Lysine (K) or Arginine (R)

<220>
<221> MISC_FEATURE
<222> (16)..(16)
<223> Xaa is Lysine (K) or Gluatamine (Q)

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Xaa is Serine (S) or Glycine (G)

<400> 48

Glu Ile Ile Pro Ile Xaa Gly His Thr Asn Tyr Asn Glu Xaa Phe Xaa
1   5   10   15

Xaa

<210> 49
<211> 14
<212> PRT
<213> Artificial Sequence

<220>

<223> Consensus CDRH3 Domain of Anti-ADAM9-Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa is Proline (P), Phenylalanine (F), Tyrosine (Y), Tryptophan (W), Isoleucine (I), Leucine (L), Valine (V), Threonine (T), Glycine (G) or Asparatate (D)

<220>
<221> MISC_FEATURE
<222> (8)..(8)
<223> Xaa is Lysine (K), Arginine (R), Glycine (G), Asparagine (N), Histidine (H), or Serine (S)

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa is Phenylalanine (F), Methionine (M), Serine (S), Lysine (K) or Asparagine (N)

<220>
<221> MISC_FEATURE
<222> (10)..(10)
<223> Xaa is Glycine (G) or Alanine (A)

<220>
<221> MISC_FEATURE
<222> (11)..(11)
<223> Xaa is Valine (V), Threonine (T), Tryptophan (W) or Phenylalanine (F)

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa is Methionine (M), Leucine (L) or Lysine (K)

<400> 49

Gly Gly Tyr Tyr Tyr Tyr Xaa Xaa Xaa Xaa Xaa Xaa Asp Tyr
1 5 10

<210> 50
<211> 453
<212> PRT
<213> Artificial Sequence

<220>

<223> Exemplary Humanized/Optimized IgG1 Heavy Chain of a
Derivative/Variant of MAB-A Containing the hMAB-A VH (2) Domain

<220>
<221> MISC_FEATURE
<222> (453)..(453)
<223> Xaa is Lysine (K) or is Absent

<400> 50

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

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

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

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

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

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

Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser Arg Asp Tyr Phe Asp Tyr
100 105 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
115 120 125

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

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

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

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

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

Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
    210                 215                 220

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

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255

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

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

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

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

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

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

Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln
```

```
        355                 360                 365

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

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

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

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

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

Leu Ser Pro Gly Xaa
    450
```

<210> 51
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> Exemplary Humanized/Optimized IgG1 Heavy Chain of a
       Derivative/Variant of MAB-A Containing the hMAB-A VH (2C) Domain

<220>
<221> MISC_FEATURE
<222> (453)..(453)
<223> Xaa is Lysine (K) or is Absent

<400> 51

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

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

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

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

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

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

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

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125

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

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

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

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

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

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

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


Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255


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


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


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


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


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


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


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


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


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


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


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

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

Leu Ser Pro Gly Xaa
    450

<210> 52
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> Exemplary Humanized/Optimized IgG1 Heavy Chain of a
       Derivative/Variant of MAB-A Containing the hMAB-A VH (2I) Domain

<220>
<221> MISC_FEATURE
<222> (453)..(453)
<223> Xaa is Lysine (K) or is Absent

<400> 52

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

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

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

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

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

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

```
Ala Arg Gly Gly Tyr Tyr Tyr Tyr Pro Arg Gln Gly Phe Leu Asp Tyr
            100                 105                 110

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125

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

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

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

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

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

Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
    210                 215                 220

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

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255

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

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

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

290 295 300

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

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

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

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

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

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

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

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

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

Leu Ser Pro Gly Xaa
450

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

<220>
<223> Humanized/Optimized VL Domain of Murine Anti-ADAM9 Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> Xaa is Lysine (K) or Arginine (R)

<220>
<221> MISC_FEATURE
<222> (32)..(32)
<223> Xaa is Aspartate (D) or Serine (S))

<220>
<221> MISC_FEATURE
<222> (37)..(37)
<223> Xaa is Methionine (M) or Leucine (L)

<220>
<221> MISC_FEATURE
<222> (96)..(96)
<223> Xaa is Histidine (H) or Tyrosine (Y)

<220>
<221> MISC_FEATURE
<222> (97)..(97)
<223> Xaa is Glutamate (E) or Serine (S)

<220>
<221> MISC_FEATURE
<222> (98)..(98)
<223> Xaa is Aspattate (D) or Threonine (T)

<400> 53

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

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

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

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

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


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


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

<210> 54
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> VL(1) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VL(1))

<400> 54

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


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


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


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


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


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


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

<210> 55
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> VL(2) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VL(2))

<400> 55

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

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

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

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

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

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

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

<210> 56
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> VL(3) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A (hMAB-A VL(3))

<400> 56

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


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


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


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


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


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


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


<210>  57
<211>  111
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VL(4) Domain of Humanized/Optimized Anti-ADAM9 Antibody hMAB-A
       (hMAB-A VL(4))

<400>  57

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


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


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

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


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


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


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


<210>  58
<211>  23
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FRL1 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody
       MAB-A

<400>  58

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


Glu Arg Ala Thr Ile Ser Cys
            20


<210>  59
<211>  15
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  FRL2 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody
       MAB-A

<400>  59

Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr
1               5                   10                  15
```

<210> 60
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> FRL3 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody MAB-A

<400> 60

Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15

Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala Thr Tyr Tyr Cys
20 25 30

<210> 61
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> FRL4 Domain of Humanized/Optimized Murine Anti-ADAM9 Antibody MAB-A

<400> 61

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
1 5 10

<210> 62
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRL1 Domain of Anti-ADAM9 Antibody MAB-A

<400> 62

Lys Ala Ser Gln Ser Val Asp Tyr Ser Gly Asp Ser Tyr Met Asn
1 5 10 15

<210> 63
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRL1 Domain of Anti-ADAM9 Antibody MAB-A

<400> 63

Arg Ala Ser Gln Ser Val Asp Tyr Ser Gly Asp Ser Tyr Met Asn
1   5   10   15

<210> 64
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRL1 Domain of Anti-ADAM9 Antibody MAB-A

<400> 64

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

<210> 65
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative CDRL2 Domain of Anti-ADAM9 Antibody MAB-A

<400> 65

Gln Gln Ser Tyr Ser Thr Pro Phe Thr
1   5

<210> 66
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus CDRL1 Domain of Anti-ADAM9 Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (1)..(1)
<223> Xaa is Lysine (K) or Arginine (R)

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa is Aspartate (D) or Serine (S)

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa is Methionine (M) or Leucine (L)

<400> 66

Xaa Ala Ser Gln Ser Val Asp Tyr Xaa Gly Asp Ser Tyr Xaa Asn
1   5   10   15

<210> 67
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus CDRL3 Domain of Anti-ADAM9 Antibody MAB-A

<220>
<221> MISC_FEATURE
<222> (4)..(4)
<223> Xaa is Histidine (H) or Tyrosine (Y)

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa is Glutamate (E) or Serine (S)

<220>
<221> MISC_FEATURE
<222> (6)..(6)
<223> Xaa is Aspartate (D) or Threonine (T)

<400> 67

Gln Gln Ser Xaa Xaa Xaa Pro Phe Thr
1   5

<210> 68
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> Exemplary Humanized/Optimized IgG1 Light Chain of a Derivative/Variant of MAB-A Containing the hMAB-A VL (2) Domain

<400> 68

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

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

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

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

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

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

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

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

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

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser

145 150 155 160

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
165 170 175

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

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

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 69
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Peferred Intervening Spacer Peptide (Linker 1)

<400> 69

Gly Gly Gly Ser Gly Gly Gly Gly
1 5

<210> 70
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Preferred Cysteine-Containing Spacer Peptide (Linker 2)

<400> 70

Gly Gly Cys Gly Gly Gly
1 5

<210> 71
<211> 4
<212> PRT

<213> Artificial Sequence

<220>
<223> Alternative Spacer Peptide (Linker 2)

<400> 71

Gly Gly Gly Ser
1

<210> 72
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative Spacer Peptide (Linker 2)

<400> 72

Leu Gly Gly Gly Ser Gly
1 5

<210> 73
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative Spacer Peptide (Linker 2)

<400> 73

Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly
1 5 10

<210> 74
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative Spacer Peptide (Linker 2)

<400> 74

Ala Ser Thr Lys Gly

1 5

<210> 75
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative Spacer Peptide (Linker 2)

<400> 75

Leu Glu Pro Lys Ser Ser
1 5

<210> 76
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Alternative Spacer Peptide (Linker 2)

<400> 76

Ala Pro Ser Ser Ser
1 5

<210> 77
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Heterodimer-Promoting Domain

<400> 77

Gly Val Glu Pro Lys Ser Cys
1 5

<210> 78
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Heterodimer-Promoting Domain

<400> 78

Val Glu Pro Lys Ser Cys
1   5

<210> 79
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Heterodimer-Promoting Domain

<400> 79

Ala Glu Pro Lys Ser Cys
1   5

<210> 80
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Heterodimer-Promoting Domain

<400> 80

Gly Phe Asn Arg Gly Glu Cys
1   5

<210> 81
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Heterodimer-Promoting Domain

<400> 81

Phe Asn Arg Gly Glu Cys
1   5

<210> 82
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> E-Coil Heterodimer-Promoting Domain

<400> 82

Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val
1 5 10 15

Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys
20 25

<210> 83
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> K-Coil Heterodimer-Promoting Domain

<400> 83

Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val
1 5 10 15

Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu
20 25

<210> 84
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Cysteine-Containing E-Coil Heterodimer-Promoting Domain

<400> 84

Glu Val Ala Ala Cys Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val
1 5 10 15

Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys
20 25

<210> 85
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Cysteine-Containing K-Coil Heterodimer-Promoting Domain

<400> 85

Lys Val Ala Ala Cys Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val
1 5 10 15

Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu
20 25

<210> 86
<211> 46
<212> PRT
<213> Streptococcus agalactiae

<220>
<221> MISC_FEATURE
<222> (1)..(46)
<223> Albumin-Binding Domain 3 (ABD3) of Protein G of Streptococcus strain G148

<400> 86

Leu Ala Glu Ala Lys Val Leu Ala Asn Arg Glu Leu Asp Lys Tyr Gly
1 5 10 15

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

Gly Val Lys Ala Leu Ile Asp Glu Ile Leu Ala Ala Leu Pro
35 40 45

<210> 87

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

<220>
<223> Deimmunized Albumin-Binding Domain 3 (ABD3) of Protein G of Streptococcus strain G148

<400> 87

Leu Ala Glu Ala Lys Val Leu Ala Asn Arg Glu Leu Asp Lys Tyr Gly
1 5 10 15

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

Gly Val Lys Ala Leu Ile Asp Glu Ile Leu Ala Ala Leu Pro
35 40 45

<210> 88
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Deimmunized Albumin-Binding Domain 3 (ABD3) of Protein G of Streptococcus strain G148

<400> 88

Leu Ala Glu Ala Lys Val Leu Ala Asn Arg Glu Leu Asp Lys Tyr Gly
1 5 10 15

Val Ser Asp Tyr Tyr Lys Asn Ala Ala Asn Asn Ala Lys Thr Val Glu
20 25 30

Gly Val Lys Ala Leu Ile Ala Glu Ile Leu Ala Ala Leu Pro
35 40 45

<210> 89
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Deimmunized Albumin-Binding Domain 3 (ABD3) of Protein G of
       Streptococcus strain G148

<400> 89

Leu Ala Glu Ala Lys Val Leu Ala Asn Arg Glu Leu Asp Lys Tyr Gly
1   5   10   15

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

Gly Val Lys Ala Leu Ile Ala Glu Ile Leu Ala Ala Leu Pro
        35   40   45

<210> 90
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 90

Ala Pro Ser Ser Ser Pro Met Glu
1   5

<210> 91
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 91

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

<210> 92
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 92

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

<210> 93
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 93

Asp Lys Thr His Thr Cys Pro Pro Cys Pro
1   5   10

<210> 94
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 94

Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro Cys Pro
1   5   10

<210> 95
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Linker

<400> 95

Leu Glu Pro Lys Ser Ser Asp Lys Thr His Thr Cys Pro Pro Cys Pro
1   5   10   15

<210> 96
<211> 15
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(15)
<223> IgG1 Hinge Domain

<400> 96

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
1 5 10 15

<210> 97
<211> 12
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(12)
<223> IgG2 Hinge Domain

<400> 97

Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro
1 5 10

<210> 98
<211> 12
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(12)
<223> IgG4 Hinge Domain

<400> 98

Glu Ser Lys Tyr Gly Pro Pro Cys Pro Ser Cys Pro

1 5 10

<210> 99
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant IgG4 Hinge Domain

<400> 99

Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro
1 5 10

<210> 100
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Intervening Spacer Peptide

<400> 100

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
1 5 10 15

<210> 101
<211> 107
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(107)
<223> Human IgG CL Kappa Domain

<400> 101

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

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

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


Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
    50                  55                  60


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


Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
                85                  90                  95


Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
            100                 105


<210>  102
<211>  104
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<222>  (1)..(104)
<223>  Human IgG CL Lambda Domain

<400>  102

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


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


Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser Pro Val
        35                  40                  45


Lys Ala Gly Val Glu Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr
    50                  55                  60
```

```
Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His
65                  70                  75                  80


Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys
                85                  90                  95


Thr Val Ala Pro Thr Glu Cys Ser
            100


<210>  103
<211>  98
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<222>  (1)..(98)
<223>  Human IgG1 CH1 Domain

<400>  103

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


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


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


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


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


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

Arg Val

<210> 104
<211> 98
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(98)
<223> Human IgG2 CH1 Domain

<400> 104

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


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


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


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


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


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

Thr Val

<210> 105
<211> 98
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(98)
<223> Human IgG4 CH1 Domain

<400> 105

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

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

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

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

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

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

Arg Val

<210> 106
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Human IgG1 CH2-CH3 Domain Containing L234A and L235A
       Substitutions

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 106

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


Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            20                  25                  30


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95


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


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


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160


Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190
```

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195   200   205

Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210   215

<210> 107
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> IgG1 CH2-CH3 Domain Containing S442C Substitution

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 107

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

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            20   25   30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35   40   45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50   55   60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65   70   75   80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85   90   95

Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln

```
            100                 105                 110

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Cys Leu Ser Pro Gly Xaa
    210                 215


<210>  108
<211>  217
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  IgG1 CH2-CH3 Domain Containing L234A, L235A and S442C
       Substitutions


<220>
<221>  MISC_FEATURE
<222>  (217)..(217)
<223>  Xaa is Lysine (K) or is Absent

<400>  108

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

```
Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            20                  25                  30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95

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

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205
```

Lys Ser Leu Cys Leu Ser Pro Gly Xaa
210 215

<210> 109
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> "Knob-Bearing" Variant Human IgG1 CH2-CH3 Domain Containing L234A and L235A Substitutions

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 109

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

Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
20 25 30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
35 40 45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
50 55 60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65 70 75 80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
85 90 95

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

Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met

```
        115                 120                 125


Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160


Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205


Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215


<210>  110
<211>  217
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  "Hole-Bearing" Variant Human IgG1 CH2-CH3 Domain Containing L234A
       and L235A Substitutions


<220>
<221>  MISC_FEATURE
<222>  (217)..(217)
<223>  Xaa is Lysine (K) or is Absent

<400>  110

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


Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val
            20                  25                  30
```

```
Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95

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

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

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

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215
```

<210> 111
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Lo-CD2a Anti-Human CD2 Antibody (ATCC Accession No: 11423)

<400> 111

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

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

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

Gly Arg Ile Asp Pro Glu Asp Gly Ser Ile Asp Tyr Val Glu Lys Phe
50 55 60

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

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

Ala Arg Gly Lys Phe Asn Tyr Arg Phe Ala Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

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

<220>
<223> VL Domain of Lo-CD2a Anti-Human CD2 Antibody (ATCC Accession No:

11423)

<400> 112

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

Gln Ser Val Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
20 25 30

Ser Gly Asn Thr Tyr Leu Asn Trp Leu Leu Gln Arg Thr Gly Gln Ser
35 40 45

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

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

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

Thr His Tyr Pro Tyr Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
100 105 110

<210> 113
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(1) Domain of Anti-Human CD3 Antibody CD3 mAb-1 (CD3 mAb-1VH(1))

<400> 113

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

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

```
Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


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


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


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


Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe
            100                 105                 110


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

<210> 114
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> VH(2) Domain of Anti-Human CD3 Antibody CD3 mAb-1 (CD3 mAb-1VH(2))

<400> 114

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


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


Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


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

```
Ser Val Lys Asp Arg Phe Thr Ile Ser Arg Asp Asp Ser Lys Asn Ser
65                  70                  75                  80


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


Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe
            100                 105                 110


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


<210>  115
<211>  110
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VL Domain of Anti-Human CD3 Antibody CD3 mAb-1

<400>  115

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


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


Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
        35                  40                  45


Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe
    50                  55                  60


Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala
65                  70                  75                  80


Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
                85                  90                  95
```

```
Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
            100                 105                 110


<210>  116
<211>  125
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH Domain of Anti-Human CD3 Antibody CD3 mAb-1(D65G)

<400>  116

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


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


Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


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


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


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


Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Ser Trp Phe
            100                 105                 110


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


<210>  117
<211>  125
```

<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human CD3 mAb-1 Low

<400> 117

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

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

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45

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

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

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

Tyr Cys Val Arg His Gly Asn Phe Gly Asn Ser Tyr Val Thr Trp Phe
            100   105   110

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

<210> 118
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human CD3 mAb-1 Fast

<400> 118

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


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


Ala Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45


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


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


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


Tyr Cys Val Arg His Lys Asn Phe Gly Asn Ser Tyr Val Thr Trp Phe
            100                 105                 110


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


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

<220>
<223>  VH Domain of Anti-Human CD3 mAb-1 OKT3

<400>  119

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>  120
<211>  107
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VL Domain of Anti-Human CD3 mAb-1 OKT3

<400>  120

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 Arg
            100                 105


<210>  121
<211>  120
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH Domain of Anti-Human CD8 mAb-1 OKT8

<400>  121

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


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


Asn Met His Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
        35                  40                  45


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


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


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


Ala Arg Asn Phe Arg Tyr Thr Tyr Trp Tyr Phe Asp Val Trp Gly Gln
            100                 105                 110
```

Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 122
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> VL Domain of Anti-Human CD8 mAb-1 OKT8

<400> 122

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

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

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

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

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

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

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

<210> 123
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human CD8 mAb-1 TRX2

<400> 123

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

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

Gly Met Asn Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

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

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

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

Ala Lys Pro His Tyr Asp Gly Tyr Tyr His Phe Phe Asp Ser Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 124
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> VL Domain of Anti-Human CD8 mAb-1 TRX2

<400> 124

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

Asp Arg Val Thr Ile Thr Cys Lys Gly Ser Gln Asp Ile Asn Asn Tyr
20 25 30

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


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


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


Glu Asp Ile Ala Thr Tyr Tyr Cys Tyr Gln Tyr Asn Asn Gly Tyr Thr
                85                  90                  95


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


<210>  125
<211>  118
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VH Domain of Anti-Human CD16 Antibody 3G8

<400>  125

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 Ala
        115


<210>  126
<211>  111
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VL Domain of Anti-Human CD16 Antibody 3G8

<400>  126

Asp Thr 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> 127
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human CD16 Antibody A9

<400> 127

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

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

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

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

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

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

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

Val Thr Val Ser Ser
        115

<210> 128
<211> 111
<212> PRT
<213> Artificial Sequence

<220>

<223> VL Domain of Anti-Human CD16 Antibody A9

<400> 128

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


Gly Glu Thr Val Thr Leu Thr Cys Arg Ser Asn Thr Gly Thr Val Thr
            20                  25                  30


Thr Ser Asn Tyr Ala Asn Trp Val Gln Glu Lys Pro Asp His Leu Phe
        35                  40                  45


Thr Gly Leu Ile Gly His Thr Asn Asn Arg Ala Pro Gly Val Pro Ala
    50                  55                  60


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


Gly Ala Gln Thr Glu Asp Glu Ala Ile Tyr Phe Cys Ala Leu Trp Tyr
                85                  90                  95


Asn Asn His Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 129
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human TCR Antibody BMA 031

<400> 129

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


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

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


Gly Tyr Ile Asn Pro Tyr Asn Asp Val Thr Lys Tyr Asn Glu Lys Phe
    50                  55                  60


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


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


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


Gly Thr Leu Val Thr Val Ser Ser
        115                 120


<210>  130
<211>  106
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  VL Domain of Anti-Human TCR Antibody BMA 031

<400>  130

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


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


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


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

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

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

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

<210> 131
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human NKG2D Antibody KYK-1.0

<400> 131

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

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

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

Ala Phe Ile Arg Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

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

Leu Val Thr Val Ser Ser
        115

<210> 132
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> VL Domain of Anti-Human NKG2D Antibody KYK-1.0

<400> 132

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

Thr Ala Arg Ile Pro Cys Gly Gly Asp Asp Ile Glu Thr Lys Ser Val
            20   25   30

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

Asp Asp Asp Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Phe Gly Ser
    50   55   60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Asp Asn Asn Asp Glu
                85   90   95

Trp Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
            100   105

<210> 133
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> VH Domain of Anti-Human NKG2D Antibody KYK-2.0

<400> 133

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

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

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

Ala Phe Ile Arg Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
50 55 60

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

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

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

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 134
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> VL Domain of Anti-Human NKG2D Antibody KYK-2.0

<400> 134

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

Ser Ile Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
20 25 30

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

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

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

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85   90   95

Asn Gly Pro Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105   110

<210> 135
<211> 278
<212> PRT
<213> Artificial Sequence

<220>
<223> First Polypeptide Chain of ADAM9 x CD3 Bispecific Two-Chain
       Diabody ("DART-1")

<400> 135

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

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

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

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

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser

```
65                  70                  75                  80

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

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

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

Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
    130                 135                 140

Gly Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln Ala Pro
145                 150                 155                 160

Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr Asn Asn
                165                 170                 175

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

Arg Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys
        195                 200                 205

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

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

Thr Val Ser Ser Gly Gly Cys Gly Gly Gly Glu Val Ala Ala Leu Glu
                245                 250                 255

Lys Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu
            260                 265                 270
```

Val Ala Ala Leu Glu Lys
        275

<210> 136
<211> 275
<212> PRT
<213> Artificial Sequence

<220>
<223> Second Polypeptide Chain of ADAM9 x CD3 Bispecific Two-Chain
       Diabody ("DART-1")

<400> 136

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

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

Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
        35   40   45

Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe
    50   55   60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala
65   70   75   80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
                85   90   95

Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly
            100   105   110

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

Leu Val Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
    130   135   140

```
Phe Thr Phe Ser Ser Tyr Trp Met His Trp Val Arg Gln Ala Pro Gly
145                 150                 155                 160


Lys Gly Leu Glu Trp Val Gly Glu Ile Ile Pro Ile Phe Gly His Thr
                165                 170                 175


Asn Tyr Asn Glu Lys Phe Lys Ser Arg Phe Thr Ile Ser Leu Asp Asn
            180                 185                 190


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


Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser
    210                 215                 220


Arg Asp Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser
225                 230                 235                 240


Ser Gly Gly Cys Gly Gly Gly Lys Val Ala Ala Leu Lys Glu Lys Val
                245                 250                 255


Ala Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala
            260                 265                 270


Leu Lys Glu
        275
```

<210> 137
<211> 507
<212> PRT
<213> Artificial Sequence

<220>
<223> First Polypeptide Chain of ADAM9 x CD3 Bispecific Three-Chain Diabody ("DART-2")

<220>
<221> MISC_FEATURE

<222> (507)..(507)
<223> Xaa is Lysine (K) or is Absent

<400> 137

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


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


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


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


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


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


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


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


Gly Leu Val Gln Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
    130                 135                 140


Gly Phe Thr Phe Ser Thr Tyr Ala Met Asn Trp Val Arg Gln Ala Pro
145                 150                 155                 160


Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Arg Ser Lys Tyr Asn Asn
                165                 170                 175


Tyr Ala Thr Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser
```

```
            180                 185                 190

Arg Asp Asp Ser Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys
        195                 200                 205

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

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

Thr Val Ser Ser Ala Ser Thr Lys Gly Glu Val Ala Ala Cys Glu Lys
                245                 250                 255

Glu Val Ala Ala Leu Glu Lys Glu Val Ala Ala Leu Glu Lys Glu Val
            260                 265                 270

Ala Ala Leu Glu Lys Gly Gly Gly Asp Lys Thr His Thr Cys Pro Pro
        275                 280                 285

Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro
    290                 295                 300

Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
305                 310                 315                 320

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn
                325                 330                 335

Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg
            340                 345                 350

Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val
        355                 360                 365

Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser
    370                 375                 380
```

```
Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys
385                 390                 395                 400


Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu
                405                 410                 415


Glu Met Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe
            420                 425                 430


Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
        435                 440                 445


Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe
    450                 455                 460


Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
465                 470                 475                 480


Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr
                485                 490                 495


Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Xaa
            500                 505


<210>  138
<211>  274
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Second Polypeptide Chain of ADAM9 x CD3 Bispecific Three-Chain
       Diabody ("DART-2")

<400>  138

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


Thr Val Thr Leu Thr Cys Arg Ser Ser Thr Gly Ala Val Thr Thr Ser
            20                  25                  30
```

```
Asn Tyr Ala Asn Trp Val Gln Gln Lys Pro Gly Gln Ala Pro Arg Gly
        35                  40                  45

Leu Ile Gly Gly Thr Asn Lys Arg Ala Pro Trp Thr Pro Ala Arg Phe
    50                  55                  60

Ser Gly Ser Leu Leu Gly Gly Lys Ala Ala Leu Thr Ile Thr Gly Ala
65                  70                  75                  80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Leu Trp Tyr Ser Asn
                85                  90                  95

Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gly Gly
            100                 105                 110

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

Leu Val Lys Pro Gly Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly
    130                 135                 140

Phe Thr Phe Ser Ser Tyr Trp Met His Trp Val Arg Gln Ala Pro Gly
145                 150                 155                 160

Lys Gly Leu Glu Trp Val Gly Glu Ile Ile Pro Ile Phe Gly His Thr
                165                 170                 175

Asn Tyr Asn Glu Lys Phe Lys Ser Arg Phe Thr Ile Ser Leu Asp Asn
            180                 185                 190

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

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Gly Tyr Tyr Tyr Tyr Gly Ser
    210                 215                 220
```

```
Arg Asp Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser
225                 230                 235                 240


Ser Ala Ser Thr Lys Gly Lys Val Ala Ala Cys Lys Glu Lys Val Ala
                245                 250                 255


Ala Leu Lys Glu Lys Val Ala Ala Leu Lys Glu Lys Val Ala Ala Leu
            260                 265                 270


Lys Glu
```

<210> 139
<211> 227
<212> PRT
<213> Artificial Sequence

<220>
<223> Third Polypeptide Chain of ADAM9 x CD3 Bispecific Three-Chain Diabody ("DART-2")

<220>
<221> MISC_FEATURE
<222> (227)..(227)
<223> Xaa is Lysine (K) or is Absent

<400> 139

```
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly
1               5                   10                  15


Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
            20                  25                  30


Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
        35                  40                  45


Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
    50                  55                  60


His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
```

65 70 75 80

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
85 90 95

Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
100 105 110

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

Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser
130 135 140

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

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
165 170 175

Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Val Ser Lys Leu Thr Val
180 185 190

Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
195 200 205

His Glu Ala Leu His Asn Arg Tyr Thr Gln Lys Ser Leu Ser Leu Ser
210 215 220

Pro Gly Xaa
225

<210> 140
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Sub-Domain Portion of CDRH3 Domain of anti-Human ADAM9 Antibody

MAB-A (2.2)

<400> 140

Gly Ser Arg Asp Tyr Phe
1 5

<210> 141
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 141

Asp Gly Glu Gly Val Met
1 5

<210> 142
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 142

Phe His Ser Gly Leu Leu
1 5

<210> 143
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 143

Phe Asn Ser Ala Thr Leu

1 5

<210> 144
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 144

Phe Asn Ser Gly Thr Leu
1 5

<210> 145
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 145

Phe Asn Ser Ser Thr Leu
1 5

<210> 146
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 146

Gly Lys Ser Lys Trp Leu
1 5

<210> 147
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 147

Gly Met Gly Gly Thr Leu
1 5

<210> 148
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 148

His Ala Lys Gly Gly Met
1 5

<210> 149
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 149

Ile Gly Glu Ala Val Leu
1 5

<210> 150
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9

Antibody hMAB-A (2.2)

<400> 150

Ile Gly Lys Gly Val Phe
1 5

<210> 151
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 151

Ile Gly Lys Gly Val Leu
1 5

<210> 152
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 152

Lys His Asp Ser Val Leu
1 5

<210> 153
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 153

Leu Asn Thr Ala Val Met

1 5

<210> 154
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 154

Asn Gly Glu Gly Thr Leu
1 5

<210> 155
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 155

Asn Gly Lys Asn Thr Leu
1 5

<210> 156
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 156

Asn Ser Ala Gly Ile Leu
1 5

<210> 157
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 157

Pro Lys Glu Gly Trp Met
1 5

<210> 158
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 158

Pro Lys Phe Gly Trp Lys
1 5

<210> 159
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 159

Pro Lys Met Gly Trp Val
1 5

<210> 160
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9

Antibody hMAB-A (2.2)

<400> 160

Pro Arg Leu Gly His Leu
1 5

<210> 161
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 161

Pro Ser Phe Gly Trp Ala
1 5

<210> 162
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 162

Gln Ala Lys Gly Thr Met
1 5

<210> 163
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 163

Arg Gly Met Gly Val Met

1 5

<210> 164
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 164

Arg Lys Glu Gly Trp Met
1 5

<210> 165
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 165

Thr Gly Lys Gly Val Leu
1 5

<210> 166
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 166

Thr Gly Met Gly Thr Leu
1 5

<210> 167
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 167

Thr Gly Asn Gly Val Met
1 5

<210> 168
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 168

Trp Asn Ala Gly Thr Phe
1 5

<210> 169
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 169

Tyr His His Thr Pro Leu
1 5

<210> 170
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9

Antibody hMAB-A (2.2)

<400> 170

Tyr Gln Ser Ala Thr Leu
1 5

<210> 171
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 171

Asp Gly Lys Ala Val Leu
1 5

<210> 172
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 172

Phe Asn Lys Ala Val Leu
1 5

<210> 173
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 173

Phe Asn Ser Gly Thr Trp

1 5

<210> 174
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 174

Phe Asn Thr Gly Val Phe
1 5

<210> 175
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 175

Gly Lys Ser Arg Phe His
1 5

<210> 176
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 176

Ile Gly Lys Asn Val Tyr
1 5

<210> 177
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 177

Met Gly Lys Gly Val Met
1 5

<210> 178
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 178

Asn Gly Glu Ser Val Phe
1 5

<210> 179
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 179

Pro Asp Phe Gly Trp Met
1 5

<210> 180
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9

Antibody hMAB-A (2.2)

<400> 180

Pro Gly Ser Gly Val Met
1 5

<210> 181
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 181

Pro Lys Asp Ala Trp Leu
1 5

<210> 182
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of anti-Human ADAM9
Antibody MAB-A

<400> 182

Pro Lys Phe Gly Trp Leu
1 5

<210> 183
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of anti-Human ADAM9
Antibody MAB-A

<400> 183

Pro Lys Ile Gly Trp His

1 5

<210> 184
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 184

Pro Lys Met Gly Trp Ala
1 5

<210> 185
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 185

Pro Lys Met Gly Trp Met
1 5

<210> 186
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 186

Pro Gln Met Gly Trp Leu
1 5

<210> 187
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 187

Pro Arg Phe Gly Trp Leu
1 5

<210> 188
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 188

Pro Arg Met Gly Phe Leu
1 5

<210> 189
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 189

Pro Arg Met Gly Phe Met
1 5

<210> 190
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9

Antibody hMAB-A (2.2)

<400> 190

Pro Ser Phe Gly Trp Met
1 5

<210> 191
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 191

Arg Arg Glu Gly Trp Met
1 5

<210> 192
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 192

Ser Gly Glu Gly Val Leu
1 5

<210> 193
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9
Antibody hMAB-A (2.2)

<400> 193

Ser Gly Asn Gly Val Met

1 5

<210> 194
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A (2.2)

<400> 194

Val Gly Lys Ala Val Leu
1 5

<210> 195
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A VH (2E)

<400> 195

Asp Ser Asn Ala Val Leu
1 5

<210> 196
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A VH (2F)

<400> 196

Phe His Ser Gly Thr Leu
1 5

<210> 197
<211> 6

<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A VH (2H)

<400> 197

Gly Gly Ser Gly Val Leu
1 5

<210> 198
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A VH (2I)

<400> 198

Pro Arg Gln Gly Phe Leu
1 5

<210> 199
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Variant of Sub-Domain Portion of CDRH3 Domain of Anti-Human ADAM9 Antibody hMAB-A VH (2J)

<400> 199

Tyr Asn Ser Gly Thr Leu
1 5

<210> 200
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Human IgG1 CH2-CH3 Domain Containing M252Y/S254T/T256E

Substitutions

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 200

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


Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro Glu Val Thr Cys Val
            20                  25                  30


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95


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


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


Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160
```

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
165 170 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
180 185 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Xaa
210 215

<210> 201
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Human IgG1 CH2-CH3 Domain Containing
L234A/L235A/M252Y/S254T/T256E Substitutions

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 201

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

Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro Glu Val Thr Cys Val
20 25 30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
35 40 45

Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
50 55 60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His

65 70 75 80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
85 90 95

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

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
130 135 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145 150 155 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
165 170 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
180 185 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
195 200 205

Lys Ser Leu Ser Leu Ser Pro Gly Xaa
210 215

<210> 202
<211> 453
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized/Optimized IgG1 Heavy Chain of hMAB-A VH (2I) Containing L234A/L235A Substitutions

<220>

<221> MISC_FEATURE
<222> (453)..(453)
<223> Xaa is Lysine (K) or is Absent

<400> 202

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


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


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


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


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


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


Ala Arg Gly Gly Tyr Tyr Tyr Tyr Pro Arg Gln Gly Phe Leu Asp Tyr
            100                 105                 110


Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly
        115                 120                 125


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


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


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

```
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
            180                 185                 190

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

Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Pro Lys
    210                 215                 220

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

Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
                245                 250                 255

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

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

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

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

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

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

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

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

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

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

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

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

Leu Ser Pro Gly Xaa
450

<210> 203
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> Human IgG1 CH2-CH3 Domain Containing L234A, L235A, M252Y, S254T, T256E and S442C Substitutions

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 203

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

Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro Glu Val Thr Cys Val
20 25 30

Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
35 40 45

```
Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60

Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80

Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95

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

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

Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140

Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175

Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190

Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205

Lys Ser Leu Cys Leu Ser Pro Gly Xaa
    210                 215
```

<210> 204
<211> 217
<212> PRT
<213> Artificial Sequence

<220>
<223> "Knob-Bearing" Variant Human IgG1 CH2-CH3 Domain Containing
L234A, L235A, M252Y, S254Tand T256E Substitutions

<220>
<221> MISC_FEATURE
<222> (217)..(217)
<223> Xaa is Lysine (K) or is Absent

<400> 204

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


Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro Glu Val Thr Cys Val
            20                  25                  30


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60


Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95


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


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


Thr Lys Asn Gln Val Ser Leu Trp Cys Leu Val Lys Gly Phe Tyr Pro
    130                 135                 140


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160
```

```
Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175


Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln
        195                 200                 205


Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215


<210>  205
<211>  217
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  "Hole-Bearing" Variant Human IgG1 CH2-CH3 Domain Containing
       L234A, L235A, M252Y, S254Tand T256E Substitutions


<220>
<221>  MISC_FEATURE
<222>  (217)..(217)
<223>  Xaa is Lysine (K) or is Absent

<400>  205

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


Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro Glu Val Thr Cys Val
            20                  25                  30


Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr
        35                  40                  45


Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu
    50                  55                  60
```

```
Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His
65                  70                  75                  80


Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys
                85                  90                  95


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


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


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


Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
145                 150                 155                 160


Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu
                165                 170                 175


Val Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val
            180                 185                 190


Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn Arg Tyr Thr Gln
        195                 200                 205


Lys Ser Leu Ser Leu Ser Pro Gly Xaa
    210                 215


<210>  206
<211>  62
<212>  PRT
<213>  Homo sapiens


<220>
<221>  MISC_FEATURE
<222>  (1)..(52)
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<223> IgG3 Hinge Domain

<400> 206

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Glu Leu Lys Thr Pro Leu Gly Asp Thr Thr His Thr Cys Pro Arg Cys
1               5                  10                  15


Pro Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro
            20                  25                  30


Glu Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu
        35                  40                  45


Pro Lys Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro
    50                  55                  60
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<210> 207
<211> 98
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<222> (1)..(98)
<223> Human IgG3 Domain

<400> 207

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


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


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


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


Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
```

65 70 75 80

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

Arg Val