SEQUENCE LISTING

<110> F. Hoffmann-La Roche AG

<120> Combination therapy of an afucosylated CD20 antibody with a CD79b antibody-drug conjugate

<130> 31511 and PR5608

<140>
<141>

<150> US 61/818821
<151> 2013-05-02

<160> 182

<170> PatentIn version 3.2

<210> 1
<211> 112
<212> PRT
<213> Mus sp.

<220>
<221> MISC_FEATURE
<223> amino acid sequence of variable region of the heavy chain (VH) of murine monoclonal anti-CD20 antibody B-Ly1

<400> 1

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

Ala Ser Gly Tyr Ala Phe Ser Tyr Ser Trp Met Asn Trp Val Lys Leu
20 25 30

Arg Pro Gly Gln Gly Leu Glu Trp Ile Gly Arg Ile Phe Pro Gly Asp
35 40 45

Gly Asp Thr Asp Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu Thr
50 55 60

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

Ser Val Asp Ser Ala Val Tyr Leu Cys Ala Arg Asn Val Phe Asp Gly
85 90 95

Tyr Trp Leu Val Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
100 105 110

<210> 2
<211> 103
<212> PRT
<213> Mus sp.

<220>
<221> MISC_FEATURE
<223> amino acid sequence of variable region of the light chain (VL) of murine monoclonal anti-CD20 antibody B-Ly1

<400> 2

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

Lys Ser Leu Leu His Ser Asn Gly Ile Thr Tyr Leu Tyr Trp Tyr Leu
            20                  25                  30

Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn
        35                  40                  45

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

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

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

Thr Lys Leu Glu Ile Lys Arg
            100
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<210> 3
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH2)

<400> 3

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

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

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 4
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH3)

<400> 4

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

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

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 5
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH4)

<400> 5

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 Val Ser Gly Tyr Ala Phe Ser Tyr Ser
20 25 30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 6
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH5)

<400> 6

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

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

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser

115

<210> 7
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH6)

<400> 7

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

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

Trp Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 8
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH7)

<400> 8

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

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

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

```
Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 9
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH8)

<400> 9

```
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 Thr Phe Thr Tyr Ser
            20                  25                  30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 10
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HH9)

<400> 10

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 Thr Phe Ser Tyr Ser
20 25 30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 11
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL8)

<400> 11

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 Tyr Ser
20 25 30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 12
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL10)

<400> 12

```
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 Ala Phe Ser Tyr Ser
            20                  25                  30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 13
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL11)

<400> 13

```
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 Tyr Ser
            20                  25                  30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 14
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL12)

<400> 14

```
Glu Val Gln Leu Val Glu Ser Gly Ala 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 Tyr Ser
            20                  25                  30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

Ala Arg Asn Val Phe Asp Gly Tyr Trp Leu Val Tyr Trp Gly Gln Gly
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eolf-seql

100 105 110

Thr Leu Val Thr Val Ser Ser
115

<210> 15
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL13)

<400> 15

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

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

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
115

<210> 16
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL14)

<400> 16

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

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

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 17
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL15)

<400> 17

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

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

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 18
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL16)

<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 Val Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Tyr Ser
            20                  25                  30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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

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

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

Thr Leu Val Thr Val Ser Ser
        115
```

<210> 19
<211> 119
<212> PRT
<213> Artificial

<220>
<223> amino acid sequences of variable region of the heavy chain (VH) of humanized B-Ly1 antibody (B-HL17)

<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 Tyr Ser
            20                  25                  30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly 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


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


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


Thr Leu Val Thr Val Ser Ser
        115


<210>  20
<211>  115
<212>  PRT
<213>  Artificial

<220>
<223>  amino acid sequences of variable region of the light chain (VL)
       of humanized B-Ly1 antibody B-KV1

<400>  20

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


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


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


Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Leu Val Ser Gly Val Pro
    50                  55                  60


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


Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Ala Gln Asn
                85                  90                  95


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


Arg Thr Val
        115


<210> 21
<211> 1270
<212> DNA
<213> Homo sapiens

<400> 21
 caggggacag gctgcagccg gtgcagttac acgttttcct ccaaggagcc 50
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tcggacgttg tcacgggttt ggggtcgggg acagagcagt gaccatggcc 100

aggctggcgt tgtctcctgt gcccagccac tggatggtgg cgttgctgct 150

gctgctctca gctgagccag taccagcagc cagatcggag gaccggtacc 200

ggaatcccaa aggtagtgct tgttcgcgga tctggcagag cccacgtttc 250

atagccagga aacggggctt cacggtgaaa atgcactgct acatgaacag 300

cgcctccggc aatgtgagct ggctctggaa gcaggagatg gacgagaatc 350

cccagcagct gaagctggaa aagggccgca tggaagagtc ccagaacgaa 400

tctctcgcca ccctcaccat ccaaggcatc cggtttgagg acaatggcat 450

ctacttctgt cagcagaagt gcaacaacac ctcggaggtc taccagggct 500

gcggcacaga gctgcgagtc atgggattca gcaccttggc acagctgaag 550

cagaggaaca cgctgaagga tggtatcatc atgatccaga cgctgctgat 600

catcctcttc atcatcgtgc ctatcttcct gctgctggac aaggatgaca 650

gcaaggctgg catggaggaa gatcacacct acgagggcct ggacattgac 700

cagacagcca cctatgagga catagtgacg ctgcggacag gggaagtgaa 750

gtggtctgta ggtgagcacc caggccagga gtgagagcca ggtcgcccca 800

tgacctgggt gcaggctccc tggcctcagt gactgcttcg gagctgcctg 850

gctcatggcc caaccccttt cctggacccc ccagctggcc tctgaagctg 900

gcccaccaga gctgccattt gtctccagcc cctggtcccc agctcttgcc 950

aaagggcctg gagtagaagg acaacagggc agcaacttgg agggagttct 1000

ctggggatgg acgggaccca gccttctggg ggtgctatga ggtgatccgt 1050

ccccacacat gggatggggg aggcagagac tggtccagag cccgcaaatg 1100

gactcggagc cgagggcctc ccagcagagc ttgggaaggg ccatggaccc 1150

aactgggccc cagaagagcc acaggaacat cattcctctc ccgcaaccac 1200

tcccacccca gggaggccct ggcctccagt gccttccccc gtggaataaa 1250

cggtgtgtcc tgagaaacca 1270

<210> 22
<211> 229
<212> PRT
<213> Homo sapiens

<400> 22

Met	Ala	Arg	Leu	Ala	Leu	Ser	Pro	Val	Pro	Ser	His	Trp	Met	Val	
1				5				10						15	
Ala	Leu	Leu	Leu	Leu	Leu	Ser	Ala	Glu	Pro	Val	Pro	Ala	Ala	Arg	
				20				25						30	
Ser	Glu	Asp	Arg	Tyr	Arg	Asn	Pro	Lys	Gly	Ser	Ala	Cys	Ser	Arg	
				35				40						45	
Ile	Trp	Gln	Ser	Pro	Arg	Phe	Ile	Ala	Arg	Lys	Arg	Gly	Phe	Thr	
				50				55						60	

```
Val Lys Met His Cys Tyr Met Asn Ser Ala Ser Gly Asn Val Ser
                65                  70                  75

Trp Leu Trp Lys Gln Glu Met Asp Glu Asn Pro Gln Gln Leu Lys
                80                  85                  90

Leu Glu Lys Gly Arg Met Glu Glu Ser Gln Asn Glu Ser Leu Ala
                95                 100                 105

Thr Leu Thr Ile Gln Gly Ile Arg Phe Glu Asp Asn Gly Ile Tyr
               110                 115                 120

Phe Cys Gln Gln Lys Cys Asn Asn Thr Ser Glu Val Tyr Gln Gly
               125                 130                 135

Cys Gly Thr Glu Leu Arg Val Met Gly Phe Ser Thr Leu Ala Gln
               140                 145                 150

Leu Lys Gln Arg Asn Thr Leu Lys Asp Gly Ile Ile Met Ile Gln
               155                 160                 165

Thr Leu Leu Ile Ile Leu Phe Ile Ile Val Pro Ile Phe Leu Leu
               170                 175                 180

Leu Asp Lys Asp Asp Ser Lys Ala Gly Met Glu Glu Asp His Thr
               185                 190                 195

Tyr Glu Gly Leu Asp Ile Asp Gln Thr Ala Thr Tyr Glu Asp Ile
               200                 205                 210

Val Thr Leu Arg Thr Gly Glu Val Lys Trp Ser Val Gly Glu His
               215                 220                 225

Pro Gly Gln Glu


<210> 23
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light Chain of Chimeric Antibody (chMA79b)

<400> 23
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu
   1               5                  10                  15

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

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

 Gln Pro Pro Lys Leu Phe Ile Tyr Ala Ala Ser Asn Leu Glu Ser
                50                  55                  60

 Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                65                  70                  75

 Thr Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr
                80                  85                  90

 Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Ala Gly
                95                 100                 105

 Thr Glu Leu Glu Leu Lys Arg Thr Val Ala Ala Pro Ser Val Phe
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110 115 120

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser
125 130 135

Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
140 145 150

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
155 160 165

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
170 175 180

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
185 190 195

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 24
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy Chain of Chimeric Antibody (chMA79b)

<400> 24
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

Asn Glu Ile Phe Lys Gly Lys Ala Thr Phe Thr Ala Asp Thr Ser
65 70 75

Ser Asn Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp
80 85 90

Ser Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Ser Thr
110 115 120

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
125 130 135

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
140 145 150

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
155 160 165

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
170 175 180

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
185 190 195

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
200 205 210

Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
215 220 225

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
230 235 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
260 265 270

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

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

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

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
320 325 330

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
335 340 345

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
350 355 360

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
365 370 375

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
380 385 390

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
395 400 405

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
410 415 420

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
425 430 435

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
440 445

<210> 25
<211> 108
<212> PRT
<213> Homo sapiens

<400> 25
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
                35                  40                  45

Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val Pro Ser
                50                  55                  60

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

Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
                80                  85                  90

Tyr Asn Ser Leu Pro Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
                95                 100                 105

Ile Lys Arg
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<210> 26
<211> 111
<212> PRT
<213> Artificial sequence

<220>
<223> Variable domain of Light Chain of Chimeric Antibody (chMA79b)

<400> 26

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

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

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

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

Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
                65                  70                  75

Leu Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr
                80                  85                  90

Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Ala Gly Thr
                95                 100                 105

Glu Leu Glu Leu Lys Arg
               110
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<210> 27
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> Variable Domain of LIght Chain of Humanized Antibody Graft (huMA79b graft)

<400> 27

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

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

Tyr Asp Gly Asp Ser Phe Leu Asn Trp Tyr Gln Gln Lys Pro Gly
                35                  40                  45
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Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser
50 55 60

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg
110

<210> 28
<211> 113
<212> PRT
<213> Homo sapiens

<400> 28
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Val Ser Val Ile Ser Gly Asp Gly Gly Ser Thr Tyr Tyr
50 55 60

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

Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Ala Arg Gly Phe Asp Tyr Trp Gly Gln
95 100 105

Gly Thr Leu Val Thr Val Ser Ser
110

<210> 29
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Variable domain of Heavy Chain of Chimeric Antibody (chMA79b)

<400> 29
Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Met Lys Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

Asn Glu Ile Phe Lys Gly Lys Ala Thr Phe Thr Ala Asp Thr Ser
65 70 75

Ser Asn Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp
80 85 90

Ser Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
110 115

<210> 30
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> Variable Domain of Heavy Chain of Humanized Antibody Graft (huMA79b graft)

<400> 30
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

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

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
110 115

<210> 31
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> HVR1-LC of huMA79b graft

<400> 31
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 32
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> HVR2-LC of huMA79b graft

<400> 32
Ala Ala Ser Asn Leu Glu Ser

5

<210> 33
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> HVR3-LC of huMA79b graft

<400> 33
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 34
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> HVR1-HC of huMA79b graft

<400> 34
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 35
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> HVR2-HC of huMA79b graft

<400> 35
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 36
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> HVR3-HC of huMA79b graft

<400> 36
Thr Arg Arg Val Pro Val Tyr Phe Asp Tyr
5 10

<210> 37
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-LC of Humanized Antibody Variant (huMA79b. V28)

<400> 37
Lys Ala Ser Gln Ser Val Asp Tyr Glu Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 38
<211> 10
<212> PRT

<213> Artificial sequence

<220>
<223> HVR3-HC of Humanized Antibody Variant (huMA79b. V28)

<400> 38
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
5 10

<210> 39
<211> 23
<212> PRT
<213> Homo sapiens

<400> 39
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

Gly Asp Arg Val Thr Ile Thr Cys
20

<210> 40
<211> 15
<212> PRT
<213> Homo sapiens

<400> 40
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 41
<211> 32
<212> PRT
<213> Homo sapiens

<400> 41
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
1 5 10 15

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

Tyr Cys

<210> 42
<211> 11
<212> PRT
<213> Homo sapiens

<400> 42
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 43
<211> 25
<212> PRT
<213> Homo sapiens

<400> 43
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
20 25

<210> 44
<211> 13

<212> PRT
<213> Homo sapiens

<400> 44
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
5 10

<210> 45
<211> 30
<212> PRT
<213> Homo sapiens

<400> 45
Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu
1 5 10 15

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

<210> 46
<211> 11
<212> PRT
<213> Homo sapiens

<400> 46
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 47
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-LC of Humanized Antibody Variant (huMA79b.v17)

<400> 47
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 48
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-LC of Humanized Antibody Variant (huMA79b.v17)

<400> 48
Ala Ala Ser Asn Leu Glu Ser
5

<210> 49
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> HVR3-LC of Humanized Antibody Variant (huMA79b.v17)

<400> 49
Gln Gln Ser Asn Glu Asp Pro Leu Thr
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<210> 50
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 50
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 51
<211> 18
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 51
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 52
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR-H3 of Humanized Antibody Variant (huMA79b.v17)

<400> 52
Thr Arg Arg Val Pro Val Tyr Phe Asp Tyr
5 10

<210> 53
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> LC-HC Variety Domain of Humanized Antibody Varient(huMA79b.v17)

<400> 53
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg
110

<210> 54
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> HC-Variable Domain of Humanized Antibody Variant (huMA79b.v17)

<400> 54
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
110 115

<210> 55
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 55
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 56
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 56
Ala Ala Ser Asn Leu Glu Ser
5

<210> 57
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> HVR3-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 57
Gln Gln Ser Asn Glu Asp Pro Leu Thr

5

<210> 58
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 58
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 59
<211> 18
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 59
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 60
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR3-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 60
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
5 10

<210> 61
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> LC-Variable Domain of Humanized Antibody Variant (huMA79b.v18)

<400> 61
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg
110

<210> 62
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> HC-Variable Domain of Humanized Antibody Variant (huMA79b.v18)

<400> 62
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
110 115

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

<220>
<223> HVR1-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 63
Lys Ala Ser Gln Ser Val Asp Tyr Glu Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 64
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 64
Ala Ala Ser Asn Leu Glu Ser
5

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

<220>
<223> HVR3-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 65
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 66
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 66
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 67
<211> 18
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-HLC of Humanized Antibody Variant (huMA79b.v28)

<400> 67
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 68
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR3-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 68
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
5 10

<210> 69
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> LC-variable domain of (huMA79b.v28)

<400> 69
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg
110

<210> 70
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> HC-Variable Domain of Humanized Antibody (huMA79b.v28)

<400> 70
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
110 115

<210> 71
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 71
Lys Ala Ser Gln Ser Val Asp Tyr Ser Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 72
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 72
Ala Ala Ser Asn Leu Glu Ser

5

<210> 73
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> HVR3-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 73
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 74
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR1-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 74
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 75
<211> 18
<212> PRT
<213> Artificial sequence

<220>
<223> HVR2-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 75
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 76
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> HVR3-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 76
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
5 10

<210> 77
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> LC -Variable Domain of Humanized Antibody Variant (huMA79b.v32)

<400> 77
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg
110

<210> 78
<211> 117
<212> PRT
<213> Artificial sequence

<220>
<223> HC-Variable Domain of Humanized Antibody Variant (huMA79b.v32)

<400> 78
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
110 115

<210> 79
<211> 893
<212> DNA
<213> Macaca fascicularis

<400> 79
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agggttaggg ataggcttac cttcgaaccg cgggccctct agactcgagc 100

ggccgccact gtgctggata tctgcagaat tgcccttggg gacagagcag 150

tgaccatggc caggctggcg ttgtctcctg tgtccagcca ctggctggtg 200

gcgttgctgc tgctgctctc agcagctgag ccagtgccag cagccaaatc 250

agaggacctg tacccgaatc ccaaaggtag tgcttgttct cggatctggc 300

agagcccacg tttcatagcc aggaaacggg gcttcacggt gaaaatgcac 350

tgctacgtga ccaacagcac cttcagcatc gtgagctggc tccggaagcg 400

ggagacggac aaggagcccc aacaggtgaa cctggagcag ggccacatgc 450

atcagaccca aaacagctct gtcaccaccc tcatcatcca agacatccgg 500

tttgaggaca acggcatcta cttctgtcag caggagtgca gcaagacctc 550

ggaggtctac cggggctgcg gcacggagct gcgagtcatg gggttcagca 600

ccttggcaca gctgaagcag aggaacacgc tgaaggatgg catcatcatg 650

atccagacgc tgctgatcat cctcttcatc atcgtgccca tcttcctgct 700

gctggacaag gatgacagca aggccggcat ggaggaagat cacacctacg 750

agggcctgga cattgaccag acggccacct acgaggacat agtgacgctg 800

cggacagggg aagtgaagtg gtctgtgggt gagcacccag gtcaggagtg 850

agagccagga cctccccacg gcctgggtgc aggctcccca gcc 893

<210> 80
<211> 231
<212> PRT
<213> Macaca fascicularis

<400> 80

Met	Ala	Arg	Leu	Ala	Leu	Ser	Pro	Val	Ser	Ser	His	Trp	Leu	Val
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Ala	Leu	Leu	Leu	Leu	Leu	Ser	Ala	Ala	Glu	Pro	Val	Pro	Ala	Ala
				20				25						30
Lys	Ser	Glu	Asp	Leu	Tyr	Pro	Asn	Pro	Lys	Gly	Ser	Ala	Cys	Ser
				35				40						45
Arg	Ile	Trp	Gln	Ser	Pro	Arg	Phe	Ile	Ala	Arg	Lys	Arg	Gly	Phe
				50				55						60
Thr	Val	Lys	Met	His	Cys	Tyr	Val	Thr	Asn	Ser	Thr	Phe	Ser	Ile
				65				70						75
Val	Ser	Trp	Leu	Arg	Lys	Arg	Glu	Thr	Asp	Lys	Glu	Pro	Gln	Gln
				80				85						90
Val	Asn	Leu	Glu	Gln	Gly	His	Met	His	Gln	Thr	Gln	Asn	Ser	Ser
				95				100						105
Val	Thr	Thr	Leu	Ile	Ile	Gln	Asp	Ile	Arg	Phe	Glu	Asp	Asn	Gly
				110				115						120
Ile	Tyr	Phe	Cys	Gln	Gln	Glu	Cys	Ser	Lys	Thr	Ser	Glu	Val	Tyr
				125				130						135
Arg	Gly	Cys	Gly	Thr	Glu	Leu	Arg	Val	Met	Gly	Phe	Ser	Thr	Leu
				140				145						150
Ala	Gln	Leu	Lys	Gln	Arg	Asn	Thr	Leu	Lys	Asp	Gly	Ile	Ile	Met
				155				160						165
Ile	Gln	Thr	Leu	Leu	Ile	Ile	Leu	Phe	Ile	Ile	Val	Pro	Ile	Phe
				170				175						180

Leu Leu Leu Asp Lys Asp Asp Ser Lys Ala Gly Met Glu Glu Asp
185 190 195

His Thr Tyr Glu Gly Leu Asp Ile Asp Gln Thr Ala Thr Tyr Glu
200 205 210

Asp Ile Val Thr Leu Arg Thr Gly Glu Val Lys Trp Ser Val Gly
215 220 225

Glu His Pro Gly Gln Glu
230

<210> 81
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Chimeric anti-cyno CD79b (ch10D10)- LC

<400> 81
Asp Ile Val Leu Thr Gln Ser Pro Pro Ser Leu Ala Val Ser Leu
1 5 10 15

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

Ser Tyr Gly Lys Thr Phe Met His Trp His Gln Gln Lys Pro Gly
35 40 45

Gln Pro Pro Lys Leu Leu Ile Tyr Arg Val Ser Asn Leu Glu Ser
50 55 60

Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Arg Thr Asp Phe
65 70 75

Thr Leu Thr Ile Asn Pro Val Glu Ala Asp Asp Val Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Phe Thr Phe Gly Gly Gly
95 100 105

Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
110 115 120

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser
125 130 135

Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
140 145 150

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
155 160 165

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
170 175 180

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
185 190 195

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 82
<211> 441

<212> PRT
<213> Artificial sequence

<220>
<223> Chimeric anti-cyno CD79b (ch10D10)- LC

<400> 82
Glu Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser
1 5 10 15

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

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

Leu Glu Trp Met Gly Asn Ile Trp Tyr Ser Gly Ser Thr Thr Tyr
50 55 60

Asn Pro Ser Leu Lys Ser Arg Ile Ser Ile Thr Arg Asp Thr Ser
65 70 75

Lys Asn Gln Phe Phe Leu Gln Leu Asn Ser Val Thr Ser Glu Asp
80 85 90

Thr Ala Thr Tyr Tyr Cys Ser Arg Met Asp Phe Trp Gly Gln Gly
95 100 105

Thr Thr Leu Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val
110 115 120

Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
125 130 135

Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr
140 145 150

Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
155 160 165

Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val
170 175 180

Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
185 190 195

Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val
200 205 210

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro
215 220 225

Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
230 235 240

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr
245 250 255

Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe
260 265 270

Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
275 280 285

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

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys

305 310 315

Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
320 325 330

Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
335 340 345

Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu
350 355 360

Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
365 370 375

Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro
380 385 390

Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu
395 400 405

Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
410 415 420

Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
425 430 435

Leu Ser Leu Ser Pro Gly
440

<210> 83
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 83
Glu Val Gln Leu Cys Glu Ser Gly Gly Gly
5 10

<210> 84
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 84
Leu Arg Leu Ser Cys Cys Ala Ser Gly Tyr Thr
5 10

<210> 85
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 85
Met Asn Ser Leu Arg Cys Glu Asp Thr Ala Val
5 10

<210> 86
<211> 11
<212> PRT

<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 86
Thr Leu Val Thr Val Cys Ser Ala Ser Thr Lys
5 10

<210> 87
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 87
Val Thr Val Ser Ser Cys Ser Thr Lys Gly Pro
5 10

<210> 88
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 88
Val Ser Ser Ala Ser Cys Lys Gly Pro Ser Val
5 10

<210> 89
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 89
Trp Tyr Val Asp Gly Cys Glu Val His Asn Ala
5 10

<210> 90
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b HC-variant

<400> 90
Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu
5 10

<210> 91
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 91
Pro Pro Val Leu Asp Cys Asp Gly Ser Phe Phe
5 10

<210> 92
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 92
Glu Val Gln Leu Cys Gln Ser Gly Ala Glu
5 10

<210> 93
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 93
Val Lys Ile Ser Cys Cys Ala Thr Gly Tyr Thr
5 10

<210> 94
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 94
Leu Ser Ser Leu Thr Cys Glu Asp Ser Ala Val
5 10

<210> 95
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 95
Thr Ser Val Thr Val Cys Ser Ala Ser Thr Lys
5 10

<210> 96
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 96
Val Thr Val Ser Ser Cys Ser Thr Lys Gly Pro
5 10

<210> 97
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 97
Val Ser Ser Ala Ser Cys Lys Gly Pro Ser Val
5 10

<210> 98
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 98
Trp Tyr Val Asp Gly Cys Glu Val His Asn Ala
5 10

<210> 99
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 99
Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu
5 10

<210> 100
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b HC-variant

<400> 100
Pro Pro Val Leu Asp Cys Asp Gly Ser Phe Phe
5 10

<210> 101
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 101
Glu Val Gln Leu Cys Glu Ser Gly Pro Gly
5 10

<210> 102
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 102
Leu Ser Leu Thr Cys Cys Val Thr Gly Tyr Ser
5 10

<210> 103
<211> 11
<212> PRT

<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 103
Leu Asn Ser Val Thr Cys Glu Asp Thr Ala Thr
5 10

<210> 104
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 104
Thr Thr Leu Thr Val Cys Ser Ala Ser Thr Lys
5 10

<210> 15
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 105
Leu Thr Val Ser Ser Cys Ser Thr Lys Gly Pro
5 10

<210> 106
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 106
Val Ser Ser Ala Ser Cys Lys Gly Pro Ser Val
5 10

<210> 107
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-anti-cynoCD79b (ch10D10)-HC-variant

<400> 107
Trp Tyr Val Asp Gly Cys Glu Val His Asn Ala
5 10

<210> 108
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 108
Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu
5 10

<210> 109
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 109
Pro Pro Val Leu Asp Cys Asp Gly Ser Phe Phe
5 10

<210> 110
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 110
Ser Leu Ser Ala Ser Cys Gly Asp Arg Val Thr
5 10

<210> 111
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 111
Glu Ile Lys Arg Thr Cys Ala Ala Pro Ser Val
5 10

<210> 112
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 112
Thr Val Ala Ala Pro Cys Val Phe Ile Phe Pro
5 10

<210> 113
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 113
Phe Ile Phe Pro Pro Cys Asp Glu Gln Leu Lys
5 10

<210> 114
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 114
Asp Glu Gln Leu Lys Cys Gly Thr Ala Ser Val
5 10

<210> 115
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 115
Val Thr Glu Gln Asp Cys Lys Asp Ser Thr Tyr
5 10

<210> 116
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-huMA79b LC-variant

<400> 116
Gly Leu Ser Ser Pro Cys Thr Lys Ser Phe Asn
5 10

<210> 117
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b LC-variant

<400> 117
Ser Leu Ala Val Ser Cys Gly Gln Arg Ala Thr
5 10

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

<220>
<223> Thio-chMA79b LC-variant

<400> 118
Glu Leu Lys Arg Thr Cys Ala Ala Pro Ser Val
5 10

<210> 119
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b LC-variant

<400> 119
Thr Val Ala Ala Pro Cys Val Phe Ile Phe Pro
5 10

<210> 120
<211> 11
<212> PRT

<213> Artificial sequence

<220>
<223> Thio-chMA79b LC-variant

<400> 120
Phe Ile Phe Pro Pro Cys Asp Glu Gln Leu Lys
5 10

<210> 121
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b LC-variant

<400> 121
Asp Glu Gln Leu Lys Cys Gly Thr Ala Ser Val
5 10

<210> 122
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b LC-variant

<400> 122
Val Thr Glu Gln Asp Cys Lys Asp Ser Thr Tyr
5 10

<210> 123
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-chMA79b LC-variant

<400> 123
Gly Leu Ser Ser Pro Cys Thr Lys Ser Phe Asn
5 10

<210> 124
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 124
Ser Leu Ala Val Ser Cys Gly Gln Arg Ala Thr
5 10

<210> 125
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 125
Glu Ile Lys Arg Thr Cys Ala Ala Pro Ser Val
5 10

<210> 126
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 126
Thr Val Ala Ala Pro Cys Val Phe Ile Phe Pro
5 10

<210> 127
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 127
Phe Ile Phe Pro Pro Cys Asp Glu Gln Leu Lys
5 10

<210> 128
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 128
Asp Glu Gln Leu Lys Cys Gly Thr Ala Ser Val
5 10

<210> 129
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 129
Val Thr Glu Gln Asp Cys Lys Asp Ser Thr Tyr
5 10

<210> 130
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-HC-variant

<400> 130
Gly Leu Ser Ser Pro Cys Thr Lys Ser Phe Asn
5 10

<210> 131
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-LC of Humanized Antibody Variant (huMA79b.v17)

<400> 131
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

Gly Asp Arg Val Thr Ile Thr Cys
20

<210> 132
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-LC Humanized Antibody variant huMA79b.v17)

<400> 132
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 133
<211> 32
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-LC of Humanized Antibody variant (huMA79b.v17)

<400> 133
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
1 5 10 15

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

Tyr Cys

<210> 134
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-LC of Humanized Antibody Variant (huMA79b.v17)

<400> 134
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 135
<211> 106
<212> PRT
<213> Artificial sequence

<220>
<223> CL1-LC ofHumanized Antibody Variant (huMA79b.v17)

<400> 135
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
20 25 30

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

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

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

Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His
80 85 90

Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
95 100 105

Cys

<210> 136
<211> 25
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 136
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
20 25

<210> 137
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 137
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 138
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 138
Arg Ala Thr Phe Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr Leu
1 5 10 15

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

<210> 139
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 139
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 140
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> CH1-HC of Humanized Antibody Varient (huMA79b.v17)

<400> 140
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser
1 5 10 15

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

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

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

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser
65 70 75

Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
80 85 90

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
95 100 105

Thr His Thr

<210> 141
<211> 221
<212> PRT
<213> Artificial Sequence

<220>
<223> Fc-HC of Humanized Antibody Variant (huMA79b.v17)

<400> 141
Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
1 5 10 15

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
20 25 30

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
35 40 45

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
50 55 60

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
65 70 75

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
80 85 90

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
95 100 105

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
110 115 120

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

125 130 135

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
140 145 150

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
155 160 165

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
170 175 180

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
185 190 195

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
200 205 210

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
215 220

<210> 142
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 142
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

Gly Asp Arg Val Thr Ile Thr Cys
20

<210> 143
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 143
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 144
<211> 32
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 144
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
1 5 10 15

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

Tyr Cys

<210> 145
<211> 11
<212> PRT

<213> Artificial sequence

<220>
<223> FR4-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 145
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 146
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy chain of huMA79bv.32

<400> 146
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
110 115 120

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
125 130 135

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
140 145 150

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
155 160 165

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
170 175 180

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
185 190 195

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
200 205 210

Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
215 220 225

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
230 235 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

```
 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
                 260                 265                 270

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

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

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

 Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
                 320                 325                 330

 Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
                 335                 340                 345

 Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
                 350                 355                 360

 Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
                 365                 370                 375

 Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
                 380                 385                 390

 Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
                 395                 400                 405

 Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
                 410                 415                 420

 Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
                 425                 430                 435

 Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
                 440                 445

<210> 147
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> CL1-LC of Humanized Antibody Variant (huMA79b.v18)

<400> 147
 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
                  20                  25                  30

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

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

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

 Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His
                  80                  85                  90

 Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
```

eolf-seql
95 100 105

Cys

<210> 148
<211> 25
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 148
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
20 25

<210> 149
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 149
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 150
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 150
Arg Ala Thr Phe Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr Leu
1 5 10 15

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

<210> 151
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 151
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 152
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> CH1-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 152

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

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

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

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

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser
                65                  70                  75

Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
                80                  85                  90

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
                95                 100                 105

Thr His Thr
```

<210> 153
<211> 221
<212> PRT
<213> Artificial Sequence

<220>
<223> Fc-HC of Humanized Antibody Variant (huMA79b.v18)

<400> 153

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

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                20                  25                  30

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
                35                  40                  45

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
                50                  55                  60

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
                65                  70                  75

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
                80                  85                  90

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
                95                 100                 105

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
               110                 115                 120

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
               125                 130                 135

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
               140                 145                 150

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
               155                 160                 165

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
               170                 175                 180
```

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
185 190 195

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
200 205 210

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
215 220

<210> 154
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 154
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

Gly Asp Arg Val Thr Ile Thr Cys
20

<210> 155
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 155
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 156
<211> 32
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 156
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
1 5 10 15

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

Tyr Cys

<210> 157
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 157
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 158

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

<220>
<223> CL1-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 158
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
20 25 30

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

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

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

Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His
80 85 90

Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
95 100 105

Cys

<210> 159
<211> 25
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 159
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
20 25

<210> 160
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 160
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 161
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 161

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

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

<210> 162
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 162
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 163
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> CH1-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 163
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser
1 5 10 15

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

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

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

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser
65 70 75

Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
80 85 90

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
95 100 105

Thr His Thr

<210> 164
<211> 221
<212> PRT
<213> Artificial Sequence

<220>
<223> Fc-HC of Humanized Antibody Variant (huMA79b.V28)

<400> 164
Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
1 5 10 15

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
20 25 30

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
35 40 45

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
50 55 60

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
65 70 75

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
80 85 90

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
95 100 105

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
110 115 120

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
125 130 135

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
140 145 150

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
155 160 165

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
170 175 180

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
185 190 195

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
200 205 210

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
215 220

<210> 165
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 165
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

Gly Asp Arg Val Thr Ile Thr Cys
20

<210> 166
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 166
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Phe Ile Tyr
1 5 10 15

<210> 167
<211> 32
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 167
Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
1 5 10 15

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

Tyr Cys

<210> 168
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 168
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 169
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> CL1-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 169
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
20 25 30

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

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

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

Ala Asp Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His
80 85 90

Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu
95 100 105

Cys

<210> 170
<211> 25
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 170

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

Gly Ser Leu Arg Leu Ser Cys Ala Ala Ser
20 25

<210> 171
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 171
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 172
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 172
Arg Ala Thr Phe Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr Leu
1 5 10 15

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

<210> 173
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 173
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 174
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> CH1-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 174
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser
1 5 10 15

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

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

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

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser
65 70 75

Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
80 85 90

Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
95 100 105

Thr His Thr

<210> 175
<211> 221
<212> PRT
<213> Artificial Sequence

<220>
<223> Fc-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 175
Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
1 5 10 15

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
20 25 30

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
35 40 45

Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
50 55 60

Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
65 70 75

Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn
80 85 90

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
95 100 105

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
110 115 120

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
125 130 135

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
140 145 150

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
155 160 165

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
170 175 180

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
185 190 195

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
200 205 210

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
215 220

<210> 176
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.17

<400> 176
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
110 115 120

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser
125 130 135

Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
140 145 150

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
155 160 165

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
170 175 180

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
185 190 195

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 177
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy chain of huMA79bv.17

<400> 177
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

```
Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
                50                  55                  60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
                95                 100                 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
               110                 115                 120

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
               125                 130                 135

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
               140                 145                 150

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
               155                 160                 165

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
               170                 175                 180

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
               185                 190                 195

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
               200                 205                 210

Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
               215                 220                 225

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
               230                 235                 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
               245                 250                 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
               260                 265                 270

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

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

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

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
               320                 325                 330

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
               335                 340                 345

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
               350                 355                 360

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
               365                 370                 375

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
               380                 385                 390
```

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
395 400 405

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
410 415 420

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
425 430 435

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
440 445

<210> 178
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.18

<400> 178
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
110 115 120

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser
125 130 135

Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
140 145 150

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
155 160 165

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
170 175 180

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
185 190 195

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 179

<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy chain of huMA79bv.18

<400> 179

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

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

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

 Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
                50                  55                  60

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

 Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
                80                  85                  90

 Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
                95                 100                 105

 Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
               110                 115                 120

 Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
               125                 130                 135

 Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
               140                 145                 150

 Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
               155                 160                 165

 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
               170                 175                 180

 Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
               185                 190                 195

 Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
               200                 205                 210

 Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
               215                 220                 225

 Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
               230                 235                 240

 Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
               245                 250                 255

 Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
               260                 265                 270

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

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

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

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
320 325 330

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
335 340 345

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
350 355 360

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
365 370 375

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
380 385 390

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
395 400 405

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
410 415 420

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
425 430 435

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
440 445

<210> 180
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.28

<400> 180
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
65 70 75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
80 85 90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
95 100 105

Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
110 115 120

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser
125 130 135

Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
140 145 150

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
155 160 165

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
170 175 180

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
185 190 195

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 181
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy chain of huMA79bv.28

<400> 181
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly
1 5 10 15

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

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

Glu Trp Ile Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr
50 55 60

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

Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp
80 85 90

Thr Ala Val Tyr Tyr Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
95 100 105

Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
110 115 120

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
125 130 135

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe
140 145 150

Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
155 160 165

Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr
170 175 180

Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr
185 190 195

Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
200 205 210

Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr

215 220 225

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val
230 235 240

Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
245 250 255

Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
260 265 270

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

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

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

Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala
320 325 330

Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu
335 340 345

Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
350 355 360

Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
365 370 375

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn
380 385 390

Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
395 400 405

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
410 415 420

Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His
425 430 435

Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
440 445

<210> 182
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.32

<400> 182
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val
1 5 10 15

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

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

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

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Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
                65                  70                  75

Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr
                80                  85                  90

Tyr Cys Gln Gln Ser Asn Glu Asp Pro Leu Thr Phe Gly Gln Gly
                95                 100                 105

Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe
               110                 115                 120

Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser
               125                 130                 135

Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val
               140                 145                 150

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
               155                 160                 165

Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
               170                 175                 180

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
               185                 190                 195

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr
               200                 205                 210

Lys Ser Phe Asn Arg Gly Glu Cys
               215
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