Sequence Listing

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<120> ANTI-CD79B ANTIBODIES AND IMMUNOCONJUGATES AND METHODS OF USE

<130> P5111R1 WO

<150> US 60/950,052
<151> 2007-07-16

<150> US 61/025,137
<151> 2008-01-31

<150> US 61/032,790
<151> 2008-02-29

<150> US 61/054,709
<151> 2008-05-20

<160> 310

<210> 1
<211> 1270
<212> DNA
<213> Homo sapiens

<400> 1
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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> 2
<211> 229
<212> PRT
<213> Homo sapiens

<400> 2

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> 3
<211> 929
<212> DNA
<213> Artificial sequence

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

<400> 3
cactcccagc tccaactgca cctcggttct atcgattgaa ttccaccatg 50

ggatggtcat gtatcatcct ttttctagta gcaactgcaa ctggagtaca 100

ttcagatatc gtgctgaccc aatctccagc ttctttggct gtgtctctgg 150

ggcagagggc caccatctcc tgcaaggcca gccaaagtgt tgattatgat 200

ggtgatagtt ttttgaactg gtaccaacag aaaccaggac agccacccaa 250

actcttcatc tatgctgcat ccaatctaga atctgggatc ccagccaggt 300

ttagtggcag tgggtctggg acagacttca ccctcaacat ccatcctgtg 350

gaggaggagg atgctgcaac ctattactgt cagcaaagta atgaggatcc 400

gctcacgttc ggggcaggca ccgagctgga actcaaacgg accgtggctg 450

caccatctgt cttcatcttc ccgccatctg atgagcagtt gaaatctgga 500

actgcctctg ttgtgtgcct gctgaataac ttctatccca gagaggccaa 550

agtacagtgg aaggtggata acgccctcca atcgggtaac tcccaggaga 600

gtgtcacaga gcaggacagc aaggacagca cctacagcct cagcagcacc 650

ctgacgctga gcaaagcaga ctacgagaaa cacaaagtct acgcctgcga 700

agtcacccat cagggcctga gctcgcccgt cacaaagagc ttcaacaggg 750

gagagtgtta agcttggccg ccatggccca acttgtttat tgcagcttat 800

aatggttaca aataaagcaa tagcatcaca aatttcacaa ataaagcatt 850

tttttcactg cattctagtt gtggtttgtc caaactcatc aatgtatctt 900

atcatgtctg gatcgggaat taattcggc 929

<210> 4
<211> 218
<212> PRT

<213> Artificial sequence

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

<400> 4

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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 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
            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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<210> 5
<211> 1469
<212> DNA
<213> Artificial sequence

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

<400> 5

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ttctagtagc aactgcaact ggagtacatt cagaagttca gctgcagcag 100
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tctggggctg aactgatgaa gcctggggcc tcagtgaaga tatcctgcaa 150

ggctactggc tacacattca gtagttactg gatagagtgg gtaaagcaga 200

ggcctggaca tggccttgag tggattggag agattttacc tggaggtggt 250

gatactaact acaatgagat tttcaagggc aaggccacat tcactgcaga 300

tacatcctcc aacacagcct acatgcaact cagcagcctg acatctgagg 350

actctgccgt ctattactgt acaagacgag taccggttta ctttgactac 400

tggggccaag gaacctcagt caccgtctcc tcagcctcca ccaagggccc 450

atcggtcttc cccctggcac cctcctccaa gagcacctct gggggcacag 500

cggccctggg ctgcctggtc aaggactact tccccgaacc ggtgacggtg 550

tcgtggaact caggcgccct gaccagcggc gtgcacacct tcccggctgt 600

cctacagtcc tcaggactct actccctcag cagcgtggtg actgtgccct 650

ctagcagctt gggcacccag acctacatct gcaacgtgaa tcacaagccc 700

agcaacacca aggtggacaa gaaagttgag cccaaatctt gtgacaaaac 750

tcacacatgc ccaccgtgcc cagcacctga actcctgggg ggaccgtcag 800

tcttcctctt cccccaaaa cccaaggaca ccctcatgat ctcccggacc 850

cctgaggtca catgcgtggt ggtggacgtg agccacgaag accctgaggt 900

caagttcaac tggtacgtgg acggcgtgga ggtgcataat gccaagacaa 950

agccgcggga ggagcagtac aacagcacgt accgtgtggt cagcgtcctc 1000

accgtcctgc accaggactg gctgaatggc aaggagtaca agtgcaaggt 1050

ctccaacaaa gccctcccag ccccatcga gaaaaccatc tccaaagcca 1100

aagggcagcc ccgagaacca caggtgtaca ccctgccccc atcccgggaa 1150

gagatgacca agaaccaggt cagcctgacc tgcctggtca aaggcttcta 1200

tcccagcgac atcgccgtgg agtgggagag caatgggcag ccggagaaca 1250

actacaagac cacgcctccc gtgctggact ccgacggctc cttcttcctc 1300

tacagcaagc tcaccgtgga caagagcagg tggcagcagg ggaacgtctt 1350

ctcatgctcc gtgatgcatg aggctctgca caaccactac acgcagaaga 1400

gcctctccct gtctccgggt aaatgagtgc gacggcccta gagtcgacct 1450

gcagaagctt ggccgccat 1469

<210> 6
<211> 446
<212> PRT
<213> Artificial sequence

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

<400> 6

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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
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<210> 7
<211> 231
<212> PRT
<213> Macaca fascicularis

<400> 7

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

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
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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 Ala 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> 8
<211> 228
<212> PRT
<213> Mus musculus

<400> 8
Met Ala Thr Leu Val Leu Ser Ser Met Pro Cys His Trp Leu Leu
1 5 10 15

Phe Leu Leu Leu Leu Phe Ser Gly Glu Pro Val Pro Ala Met Thr
20 25 30

Ser Ser Asp Leu Pro Leu Asn Phe Gln Gly Ser Pro Cys Ser Gln
35 40 45

Ile Trp Gln His Pro Arg Phe Ala Ala Lys Lys Arg Ser Ser Met
50 55 60

Val Lys Phe His Cys Tyr Thr Asn His Ser Gly Ala Leu Thr Trp
65 70 75

Phe Arg Lys Arg Gly Ser Gln Gln Pro Gln Glu Leu Val Ser Glu
80 85 90

Glu Gly Arg Ile Val Gln Thr Gln Asn Gly Ser Val Tyr Thr Leu
95 100 105

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

Lys Gln Lys Cys Asp Ser Ala Asn His Asn Val Thr Asp Ser Cys
125 130 135

Gly Thr Glu Leu Leu Val Leu Gly Phe Ser Thr Leu Asp Gln Leu
140 145 150

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

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

Asp Lys Asp Asp Gly Lys Ala Gly Met Glu Glu Asp His Thr Tyr
185 190 195

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

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

Gly Gln Glu


<210> 9
<211> 108
<212> PRT
<213> Homo sapiens

<400> 9
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

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


<210> 10
<211> 111
<212> PRT
<213> Artificial sequence

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

<400> 10
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
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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

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

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

<400> 11
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

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> 12
<211> 11
<212> PRT
<213> Homo sapiens

<400> 12
Ala Arg Ser Glu Asp Arg Tyr Arg Asn Pro Lys
5 10

<210> 13
<211> 113
<212> PRT
<213> Homo sapiens

<400> 13
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> 14
<211> 117
<212> PRT
<213> Artificial Sequence

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

<400> 14
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> 15
<211> 117
<212> PRT
<213> Artificial sequence

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

<400> 15
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> 16
<211> 16
<212> PRT
<213> Homo sapiens

<400> 16
Ala Arg Ser Glu Asp Arg Tyr Arg Asn Pro Lys Gly Ser Ala Cys
1 5 10 15

Lys

<210> 17
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 17
Lys Ala Ser Lys Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 18
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 18
Ala Ala Ser Asn Arg Glu Ser
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<210> 19
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 19
Ala Ala Ser Asn Leu Lys Ser
5

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

<220>
<223> Humanized Antibody Variant

<400> 20
Gln Gln Ser Asn Ser Asp Pro Leu Thr
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<210> 21
<211> 9
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 21
Gln Gln Ser Asn Lys Asp Pro Leu Thr
5

<210> 22
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 22
Ala Ala Arg Lys Leu Gly Arg
5

<210> 23
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 23
Ala Ala Ser Arg Leu Glu Ser
5

<210> 24
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 24
Ala Ala Arg Lys Leu Gly Asn
5

<210> 25
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 25
Ala Ala Arg Lys Leu Lys Arg
5

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

<220>
<223> Humanized Antibody Variant

<400> 26
Ala Ala Arg Tyr Leu Lys Arg
5

<210> 27
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized Antibody Variant

<400> 27
Ala Ala Arg Lys Leu Lys Ser
5

<210> 28
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized Antibody Variant

<400> 28
Ala Ala Arg Lys Leu Ala Ser
5

<210> 29
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized Antibody Variant

<400> 29
Ala Ala Gly Ile Leu Ala Arg
5

<210> 30
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Humanized Antibody Variant

<400> 30
Ala Ala Arg Lys Leu Arg Ser
5

<210> 31
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 31
Ala Ala Arg Lys Leu Gly Ser
5

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

<220>
<223> Humanized Antibody Variant

<400> 32
Ala Ala Arg His Leu Lys Arg
5

<210> 33
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 33
Ala Ser Arg Tyr Leu Ser Arg
5

<210> 34
<211> 7
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 34
Ala Gly Ser Lys Leu Leu Arg
5

<210> 35
<211> 7
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<400> 35
Ala Ala Ser Asn Arg Lys Ser
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<210> 36
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<212> PRT
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<220>
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<400> 36
Ala Ala Ser Lys Leu Gly Ser
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<210> 37
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<400> 37
Ala Ala Arg Tyr Leu Arg Arg
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<210> 38
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<400> 38
Ala Ala Arg Arg Leu Arg Thr
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<210> 39
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<400> 39
Ala Ala Arg Arg Leu Gly Arg
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<210> 40
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<220>
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<400> 40
Ala Ala Arg Gln Arg Lys Arg
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<210> 41
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<220>
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<400> 41
Ala Ala Arg Lys Leu Leu Arg
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<210> 42
<211> 7
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<400> 42
Ala Ala Arg Lys Leu Lys Asn
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<210> 43
<211> 7
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<220>
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<400> 43
Ala Ala Arg Lys Leu Gly Thr
5

<210> 44
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<400> 44
Ala Ala Arg Lys Leu Gly Gly
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<210> 45
<211> 7
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<220>
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<400> 45
Ala Ala Arg Lys Leu Ala Arg
5

<210> 46
<211> 9
<212> PRT
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<220>
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<400> 46
Gln Gln Ser Asn Ala Asp Pro Leu Thr
5

<210> 47
<211> 9
<212> PRT
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<220>
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<400> 47
Gln Gln Ser Asn Gln Asp Pro Leu Thr
5

<210> 48
<211> 9
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<220>
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<400> 48
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

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<211> 9
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<220>
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Gln Gln Ser Asn Asp Asp Pro Leu Thr
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<210> 50
<211> 9
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<220>
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Gln Gln Ser Asn Leu Asp Pro Leu Thr
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<210> 51
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Asn Asn Ser Asn Gly Asp Pro Leu Asn
5

<210> 52
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<220>
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<400> 52
Gln Pro Asp Asn Glu Ala Pro Arg Thr
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<210> 53
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<220>
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<400> 53
Asp Gln Arg Asn Ala Asp Pro Leu Thr
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<210> 54
<211> 10
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<220>
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<400> 54
Gly Tyr Pro Phe Thr Arg Tyr Trp Ile Ser
5 10

<210> 55
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<220>
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<400> 55
Gly Tyr Pro Phe Arg Ser Tyr Trp Ile Gln
5 10

<210> 56
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<400> 56
Gly Tyr Pro Phe Thr Ser Tyr Trp Ile Asn
5 10

<210> 57
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<212> PRT
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<400> 57
Gly Tyr Pro Phe Thr Arg Tyr Trp Ile Asn
5 10

<210> 58
<211> 10
<212> PRT
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<400> 58
Gly Tyr Thr Phe Asn Arg Tyr Trp Ile Asn
5 10

<210> 59
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<400> 59
Gly Tyr Ser Phe Lys Ser Tyr Trp Ile Glu
5 10

<210> 60
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<212> PRT
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<220>
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<400> 60
Pro Tyr Ser Leu Cys Thr Tyr Phe Ile Asp
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<210> 61
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<400> 61
Gly Tyr Tyr Phe Thr Ser Tyr Trp Ile Glu
5 10

<210> 62
<211> 10
<212> PRT
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<220>
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<400> 62
Gly Tyr Pro Phe Gly Arg Tyr Trp Val Asn
5 10

<210> 63
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<212> PRT
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<220>
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<400> 63
Gly Tyr Thr Phe Lys Lys Tyr Trp Ile Glu
5 10

<210> 64
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<212> PRT
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<220>
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<400> 64
Gly Tyr Pro Phe Thr Ser Tyr Trp Ile Gln
5 10

<210> 65
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<212> PRT
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<400> 65
Gly Tyr Pro Phe Arg Arg Tyr Trp Ile Glu
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<210> 66
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<220>
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<400> 66
Gly Tyr Pro Val Gly Arg Tyr Trp Ile Ser
5 10

<210> 67
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 67
Gly Tyr Pro Phe Asn Arg Tyr Trp Ile Asn
5 10

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

<220>
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<400> 68
Gly Tyr Gly Phe Thr Ser Tyr Trp Ile Ser
5 10

<210> 69
<211> 10
<212> PRT
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<220>
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<400> 69
Gly Tyr Thr Phe Thr Ser Tyr Trp Leu Ser
5 10

<210> 70
<211> 10
<212> PRT
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<220>
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<400> 70
Gly Tyr Thr Phe Thr Ser Tyr Trp Ile Glu
5 10

<210> 71
<211> 10
<212> PRT
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<220>
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<400> 71
Gly Tyr Thr Phe Ser Gly Tyr Trp Ile Asn
5 10

<210> 72
<211> 10
<212> PRT
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<220>
<223> sequence is synthesized

<400> 72
Gly Tyr Thr Phe Arg Arg Tyr Trp Ile Asn
5 10

<210> 73
<211> 10
<212> PRT
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<220>
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<400> 73
Gly Tyr Ser Phe Arg Ser Tyr Trp Ile Asn
5 10

<210> 74
<211> 10
<212> PRT
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<220>
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<400> 74
Gly Tyr Ser Phe Arg Arg Tyr Trp Ile Asn
5 10

<210> 75
<211> 10
<212> PRT
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<220>
<223> Humanized Antibody Variant

<400> 75
Gly Tyr Ser Phe Arg Arg Tyr Trp Ile Glu
5 10

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

<220>
<223> Humanized Antibody Variant

<400> 76
Gly Tyr Ser Phe Pro Ser Tyr Trp Leu Gln
5 10

<210> 77
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 77
Gly Tyr Pro Phe Thr Arg Tyr Trp Ile Glu
5 10

<210> 78
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 78
Gly Tyr Pro Phe Ser Gly Tyr Trp Ile Glu
5 10

<210> 79
<211> 10
<212> PRT
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<220>
<223> Humanized Antibody Variant

<400> 79
Gly Tyr Pro Phe Arg Ser Tyr Trp Ile Ser
5 10

<210> 80
<211> 10
<212> PRT
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<220>
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<400> 80
Gly Tyr Pro Phe Arg Ser Tyr Trp Ile Asn
5 10

<210> 81
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 81
Gly Tyr Pro Phe Arg Gly Tyr Trp Ile Glu
5 10

<210> 82
<211> 10
<212> PRT
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<220>
<223> Humanized Antibody Variant

<400> 82
Gly Tyr Pro Phe Asn Arg Tyr Trp Ile Glu
5 10

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

<220>
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<400> 83
Gly Tyr Pro Phe Asn Gly Tyr Trp Ile Asn
5 10

<210> 84
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 84
Gly Tyr Asn Val Ser Ser Tyr Trp Leu Ser
5 10

<210> 85
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 85
Gly Phe Pro Phe Thr Ser Tyr Trp Ile Ser
5 10

<210> 86
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 86
Gly Phe Pro Phe Asn Arg Tyr Trp Ile Asn
5 10

<210> 87
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 87
Cys Thr Arg Arg Val Pro Ile Tyr Leu Asp
5 10

<210> 88
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 88
Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
5 10

<210> 89
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 89
Cys Thr Arg Arg Val Pro Val Lys Leu Asp
5 10

<210> 90
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 90
Cys Thr Arg Arg Val Pro Val Tyr Leu Asp
5 10

<210> 91
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 91
Cys Thr Arg Arg Val Pro Ile Tyr Phe Asp
5 10

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

<220>
<223> Humanized Antibody Variant

<400> 92
Cys Thr Arg Arg Val Pro Phe Cys Leu Asp
5 10

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

<220>
<223> Humanized Antibody Variant

<400> 93
Cys Thr Arg Arg Val Pro Val Tyr Leu Asp
5 10

<210> 94
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 94
Cys Thr Arg Arg Val Pro Ile Arg Leu Asp
5 10

<210> 95
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 95
Cys Thr Arg Arg Val Pro Ile Lys Leu Asp
5 10

<210> 96
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 96
Cys Thr Arg Arg Val Pro Ile Arg Phe Asp
5 10

<210> 97
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 97
Cys Thr Arg Arg Val Pro Ile Tyr Phe Asp
5 10

<210> 98
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 98
Cys Thr Arg Arg Val Pro Val Tyr Phe Ser
5 10

<210> 99
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 99
Cys Thr Arg Arg Val Pro Val Val Leu Asp
5 10

<210> 100
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 100
Cys Thr Arg Arg Val Pro Val Arg Leu Asp
5 10

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

<220>
<223> Humanized Antibody Variant

<400> 101
Cys Thr Arg Arg Val Pro Val Arg Phe Asp
5 10

<210> 102
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 102
Cys Thr Arg Arg Val Pro Val Phe Leu Asp
5 10

<210> 103
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 103
Cys Thr Arg Arg Val Pro Ile Tyr Leu Asp
5 10

<210> 104
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 104
Cys Thr Arg Arg Val Pro Ile Tyr Phe Asp
5 10

<210> 105
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 105
Cys Thr Arg Arg Arg Pro Val Cys Leu Asp
5 10

<210> 106
<211> 10
<212> PRT
<213> Artificial sequence

<220>
<223> Humanized Antibody Variant

<400> 106
Cys Thr Arg Arg Ile Pro Val Tyr Phe Asp
5 10

<210> 107
<211> 10
<212> PRT
<213> Mus musculus

<400> 107
Cys Thr Arg Arg Val Pro Val Tyr Phe Asp
5 10

<210> 108
<211> 87
<212> PRT
<213> Homo sapiens

<400> 108
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly
1 5 10 15

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

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

Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr Met Glu
50 55 60

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
65 70 75

Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
80 85

<210> 109
<211> 81
<212> PRT
<213> Homo sapiens

<400> 109
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly
1 5 10 15

Ala Ser Val Lys Val Ser Cys Lys Ala Ser Trp Val Arg Gln Ala
20 25 30

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

 Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser
                  50                  55                  60

 Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly Thr
                  65                  70                  75

 Leu Val Thr Val Ser Ser
                  80

<210> 110
<211> 80
<212> PRT
<213> Homo sapiens

<400> 110
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly
   1               5                  10                  15

 Ala Ser Val Lys Val Ser Cys Lys Ala Ser Trp Val Arg Gln Ala
                  20                  25                  30

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

 Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser
                  50                  55                  60

 Glu Asp Thr Ala Val Tyr Tyr Cys Ala Trp Gly Gln Gly Thr Leu
                  65                  70                  75

 Val Thr Val Ser Ser
                  80

<210> 111
<211> 79
<212> PRT
<213> Homo sapiens

<400> 111
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly
   1               5                  10                  15

 Ala Ser Val Lys Val Ser Cys Lys Ala Ser Trp Val Arg Gln Ala
                  20                  25                  30

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

 Thr Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser
                  50                  55                  60

 Glu Asp Thr Ala Val Tyr Tyr Cys Trp Gly Gln Gly Thr Leu Val
                  65                  70                  75

 Thr Val Ser Ser


<210> 112
<211> 86
<212> PRT
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<213> Homo sapiens

<400> 112

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

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

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

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

Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
             65                  70                  75

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
             80                  85
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<210> 113
<211> 81
<212> PRT
<213> Homo sapiens

<400> 113

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

Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Trp Ile Arg Gln Pro
             20                  25                  30

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

Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala
             50                  55                  60

Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly Thr
             65                  70                  75

Leu Val Thr Val Ser Ser
             80
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<210> 114
<211> 80
<212> PRT
<213> Homo sapiens

<400> 114

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

Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Trp Ile Arg Gln Pro
             20                  25                  30

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

Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala
             50                  55                  60

Ala Asp Thr Ala Val Tyr Tyr Cys Ala Trp Gly Gln Gly Thr Leu
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65 70 75

Val Thr Val Ser Ser
80

<210> 115
<211> 79
<212> PRT
<213> Homo sapiens

<400> 115
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser
1 5 10 15

Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Trp Ile Arg Gln Pro
20 25 30

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

Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala
50 55 60

Ala Asp Thr Ala Val Tyr Tyr Cys Trp Gly Gln Gly Thr Leu Val
65 70 75

Thr Val Ser Ser

<210> 116
<211> 87
<212> PRT
<213> Homo sapiens

<400> 116
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

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

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

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala
65 70 75

Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
80 85

<210> 117
<211> 81
<212> PRT
<213> Homo sapiens

<400> 117
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 Trp Val Arg Gln Ala
20 25 30

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

 Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala
                  50                  55                  60

 Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly Thr
                  65                  70                  75

 Leu Val Thr Val Ser Ser
                  80

<210> 118
<211> 80
<212> PRT
<213> Homo sapiens

<400> 118
 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 Trp Val Arg Gln Ala
                  20                  25                  30

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

 Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala
                  50                  55                  60

 Glu Asp Thr Ala Val Tyr Tyr Cys Ala Trp Gly Gln Gly Thr Leu
                  65                  70                  75

 Val Thr Val Ser Ser
                  80

<210> 119
<211> 79
<212> PRT
<213> Homo sapiens

<400> 119
 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 Trp Val Arg Gln Ala
                  20                  25                  30

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

 Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala
                  50                  55                  60

 Glu Asp Thr Ala Val Tyr Tyr Cys Trp Gly Gln Gly Thr Leu Val
                  65                  70                  75

 Thr Val Ser Ser


<210> 120
<211> 87
<212> PRT
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<213> Homo sapiens

<400> 120

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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 Phe Asn Ile Lys
             20                  25                  30

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

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

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ser
             65                  70                  75

Arg Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
             80                  85
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<210> 121
<211> 81
<212> PRT
<213> Homo sapiens

<400> 121

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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 Trp Val Arg Gln Ala
             20                  25                  30

Pro Gly Lys Gly Leu Glu Trp Val Arg Phe Thr Ile Ser Ala Asp
             35                  40                  45

Thr Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala
             50                  55                  60

Glu Asp Thr Ala Val Tyr Tyr Cys Ser Arg Trp Gly Gln Gly Thr
             65                  70                  75

Leu Val Thr Val Ser Ser
             80
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<210> 122
<211> 80
<212> PRT
<213> Homo sapiens

<400> 122

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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 Trp Val Arg Gln Ala
             20                  25                  30

Pro Gly Lys Gly Leu Glu Trp Val Arg Phe Thr Ile Ser Ala Asp
             35                  40                  45

Thr Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala
             50                  55                  60

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

65 70 75

Val Thr Val Ser Ser
80

<210> 123
<211> 86
<212> PRT
<213> Homo sapiens

<400> 123
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 Asn Ile Lys
20 25 30

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

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

Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Cys Ala Arg
65 70 75

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
80 85

<210> 124
<211> 81
<212> PRT
<213> Homo sapiens

<400> 124
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 Trp Val Arg Gln Ala
20 25 30

Pro Gly Lys Gly Leu Glu Trp Val Arg Phe Thr Ile Ser Ala Asp
35 40 45

Thr Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala
50 55 60

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly Thr
65 70 75

Leu Val Thr Val Ser Ser
80

<210> 125
<211> 80
<212> PRT
<213> Homo sapiens

<400> 125
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 Trp Val Arg Gln Ala
20 25 30

Pro Gly Lys Gly Leu Glu Trp Val Arg Phe Thr Ile Ser Ala Asp
35 40 45

Thr Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala
50 55 60

Glu Asp Thr Ala Val Tyr Tyr Cys Ala Trp Gly Gln Gly Thr Leu
65 70 75

Val Thr Val Ser Ser
80

<210> 126
<211> 79
<212> PRT
<213> Homo sapiens

<400> 126
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 Trp Val Arg Gln Ala
20 25 30

Pro Gly Lys Gly Leu Glu Trp Val Arg Phe Thr Ile Ser Ala Asp
35 40 45

Thr Ser Lys Asn Thr Ala Tyr Leu Gln Met Asn Ser Leu Arg Ala
50 55 60

Glu Asp Thr Ala Val Tyr Tyr Cys Trp Gly Gln Gly Thr Leu Val
65 70 75

Thr Val Ser Ser

<210> 127
<211> 80
<212> PRT
<213> Homo sapiens

<400> 127
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 Trp Tyr Gln Gln Lys Pro Gly
20 25 30

Lys Ala Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser
35 40 45

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu
50 55 60

Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Phe Gly Gln Gly Thr
65 70 75

Lys Val Glu Ile Lys
80

<210> 128
<211> 80
<212> PRT

<213> Homo sapiens

<400> 128

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

 Gly Glu Pro Ala Ser Ile Ser Cys Trp Tyr Leu Gln Lys Pro Gly
                20                  25                  30

 Gln Ser Pro Gln Leu Leu Ile Tyr Gly Val Pro Asp Arg Phe Ser
                35                  40                  45

 Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val
                50                  55                  60

 Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gly Gln Gly Thr
                65                  70                  75

 Lys Val Glu Ile Lys
                80
```

<210> 129
<211> 80
<212> PRT
<213> Homo sapiens

<400> 129

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

 Gly Glu Arg Ala Thr Leu Ser Cys Trp Tyr Gln Gln Lys Pro Gly
                20                  25                  30

 Gln Ala Pro Arg Leu Leu Ile Tyr Gly Ile Pro Asp Arg Phe Ser
                35                  40                  45

 Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu
                50                  55                  60

 Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Phe Gly Gln Gly Thr
                65                  70                  75

 Lys Val Glu Ile Lys
                80
```

<210> 130
<211> 80
<212> PRT
<213> Homo sapiens

<400> 130

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

 Gly Glu Arg Ala Thr Ile Asn Cys Trp Tyr Gln Gln Lys Pro Gly
                20                  25                  30

 Gln Pro Pro Lys Leu Leu Ile Tyr Gly Val Pro Asp Arg Phe Ser
                35                  40                  45

 Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu
                50                  55                  60

 Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Phe Gly Gln Gly Thr
```

65 70 75

Lys Val Glu Ile Lys
80

<210> 131
<211> 15
<212> PRT
<213> Artificial Sequence

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

<400> 131
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 132
<211> 7
<212> PRT
<213> Artificial Sequence

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

<400> 132
Ala Ala Ser Asn Leu Glu Ser
5

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

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

<400> 133
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 134
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 134
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 135
<211> 18
<212> PRT
<213> Artificial Sequence

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

<400> 135
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 136
<211> 10
<212> PRT
<213> Artificial Sequence

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

<400> 136
Thr Arg Arg Val Pro Val Tyr Phe Asp Tyr
1 5 10

<210> 137
<211> 15
<212> PRT
<213> Artificial sequence

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

<400> 137
Lys Ala Ser Gln Ser Val Asp Tyr Glu Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 138
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 138
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
1 5 10

<210> 139
<211> 23
<212> PRT
<213> Homo sapiens

<400> 139
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> 140
<211> 15
<212> PRT
<213> Homo sapiens

<400> 140
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 141
<211> 32
<212> PRT

<213> Homo sapiens

<400> 141
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> 142
<211> 11
<212> PRT
<213> Homo sapiens

<400> 142
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 143
<211> 25
<212> PRT
<213> Homo sapiens

<400> 143
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> 144
<211> 13
<212> PRT
<213> Homo sapiens

<400> 144
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
5 10

<210> 145
<211> 30
<212> PRT
<213> Homo sapiens

<400> 145
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> 146
<211> 11
<212> PRT
<213> Homo sapiens

<400> 146
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 147

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

<220>
<223> FR3-HC Composite of Humanized Antibody Varients

<220>
<221> Xaa
<222> 6
<223> Xaa is A or R

<220>
<221> Xaa
<222> 8
<223> Xaa is T or N

<220>
<221> Xaa
<222> 13
<223> Xaa is A or L

<400> 147
Arg Phe Thr Ile Ser Xaa Asp Xaa Ser Lys Asn Thr Xaa 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> 148
<211> 31
<212> PRT
<213> Homo sapiens

<400> 148
Arg Phe Thr Ile 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

Ala

<210> 149
<211> 32
<212> PRT
<213> Homo sapiens

<400> 149
Arg Phe Thr Ile 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

Ala Arg

<210> 150
<211> 31
<212> PRT
<213> Homo sapiens

<400> 150
Arg Phe Thr Ile 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

Ser

<210> 151
<211> 32
<212> PRT
<213> Homo sapiens

<400> 151
Arg Phe Thr Ile 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

Ser Arg

<210> 152
<211> 23
<212> PRT
<213> Artificial sequence

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

<400> 152
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> 153
<211> 15
<212> PRT
<213> Artificial sequence

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

<400> 153
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 154
<211> 32
<212> PRT
<213> Artificial sequence

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

<400> 154
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> 155
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 155
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 156
<211> 15
<212> PRT
<213> Artificial sequence

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

<400> 156
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 157
<211> 7
<212> PRT
<213> Artificial sequence

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

<400> 157
Ala Ala Ser Asn Leu Glu Ser
5

<210> 158
<211> 9
<212> PRT
<213> Artificial sequence

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

<400> 158
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 159
<211> 106
<212> PRT
<213> Artificial sequence

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

<400> 159
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> 160
<211> 25
<212> PRT
<213> Artificial sequence

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

<400> 160
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> 161
<211> 13
<212> PRT
<213> Artificial sequence

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

<400> 161
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 162
<211> 30
<212> PRT
<213> Artificial sequence

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

<400> 162
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> 163
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 163
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 164
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 164
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 165
<211> 18
<212> PRT
<213> Artificial sequence

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

<400> 165
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 166
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 166
Thr Arg Arg Val Pro Val Tyr Phe Asp Tyr
5 10

<210> 167
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 167
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> 168
<211> 221
<212> PRT
<213> Artificial Sequence

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

<400> 168

```
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> 169
<211> 112
<212> PRT
<213> Artificial sequence

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

<400> 169
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> 170
<211> 117
<212> PRT
<213> Artificial sequence

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

<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 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> 171
<211> 23
<212> PRT
<213> Artificial sequence

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

<400> 171
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> 172
<211> 15
<212> PRT
<213> Artificial sequence

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

<400> 172
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 173
<211> 32
<212> PRT
<213> Artificial sequence

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

<400> 173
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> 174
<211> 11
<212> PRT
<213> Artificial sequence

<220>

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

<400> 174
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 175
<211> 15
<212> PRT
<213> Artificial sequence

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

<400> 175
Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 176
<211> 7
<212> PRT
<213> Artificial sequence

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

<400> 176
Ala Ala Ser Asn Leu Glu Ser
5

<210> 177
<211> 9
<212> PRT
<213> Artificial sequence

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

<400> 177
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 178
<211> 106
<212> PRT
<213> Artificial Sequence

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

<400> 178
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> 179
<211> 25
<212> PRT
<213> Artificial sequence

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

<400> 179
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> 180
<211> 13
<212> PRT
<213> Artificial sequence

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

<400> 180
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 181
<211> 30
<212> PRT
<213> Artificial sequence

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

<400> 181
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> 182
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 182
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 183
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 183
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 184
<211> 18
<212> PRT
<213> Artificial sequence

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

<400> 184
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 185
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 185
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
5 10

<210> 186
<211> 108
<212> PRT
<213> Artificial Sequence

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

<400> 186
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> 187
<211> 221
<212> PRT
<213> Artificial Sequence

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

<400> 187

```
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
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<210> 188

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

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

<400> 188
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> 189
<211> 117
<212> PRT
<213> Artificial sequence

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

<400> 189
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> 190
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 190
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> 191
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 191
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr
1 5 10 15

<210> 192
<211> 32
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 192
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> 193
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 193
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

<210> 194
<211> 15
<212> PRT
<213> Artificial sequence

<220>

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

<400> 194
Lys Ala Ser Gln Ser Val Asp Tyr Glu Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 195
<211> 7
<212> PRT
<213> Artificial sequence

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

<400> 195
Ala Ala Ser Asn Leu Glu Ser
5

<210> 196
<211> 9
<212> PRT
<213> Artificial sequence

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

<400> 196
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 197
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> CL1-LC of Humanized Antibody Variant (huMA79b.v28)

<400> 197
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> 198

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

<220>
<223> FR1-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 198
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> 199
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 199
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 200
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 200
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> 201
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 201
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 202
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 202
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 203
<211> 18
<212> PRT
<213> Artificial sequence

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

<400> 203
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 204
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 204
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
5 10

<210> 205
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> CH1-HC of Humanized Antibody Variant (huMA79b.v28)

<400> 205
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> 206
<211> 221
<212> PRT

<213> Artificial Sequence

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

<400> 206
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> 207
<211> 112
<212> PRT
<213> Artificial sequence

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

<400> 207
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> 208
<211> 117
<212> PRT
<213> Artificial sequence

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

<400> 208
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> 209
<211> 23
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 209
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> 210
<211> 15
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 210
Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Phe Ile Tyr
1 5 10 15

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

<220>
<223> FR3-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 211
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> 212
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 212
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
5 10

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

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

<400> 213
Lys Ala Ser Gln Ser Val Asp Tyr Ser Gly Asp Ser Phe Leu Asn
1 5 10 15

<210> 214
<211> 7
<212> PRT
<213> Artificial sequence

<220>

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

<400> 214
Ala Ala Ser Asn Leu Glu Ser
5

<210> 215
<211> 9
<212> PRT
<213> Artificial sequence

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

<400> 215
Gln Gln Ser Asn Glu Asp Pro Leu Thr
5

<210> 216
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> CL1-LC of Humanized Antibody Variant (huMA79b.v32)

<400> 216
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> 217
<211> 25
<212> PRT
<213> Artificial sequence

<220>
<223> FR1-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 217
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> 218
<211> 13
<212> PRT
<213> Artificial sequence

<220>
<223> FR2-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 218
Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile
5 10

<210> 219
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> FR3-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 219
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> 220
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> FR4-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 220
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
5 10

<210> 221
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 221
Gly Tyr Thr Phe Ser Ser Tyr Trp Ile Glu
5 10

<210> 222
<211> 18
<212> PRT
<213> Artificial sequence

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

<400> 222
Gly Glu Ile Leu Pro Gly Gly Gly Asp Thr Asn Tyr Asn Glu Ile
1 5 10 15

Phe Lys Gly

<210> 223
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 223
Thr Arg Arg Val Pro Ile Arg Leu Asp Tyr
1 5 10

<210> 224
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> CH1-HC of Humanized Antibody Variant (huMA79b.v32)

<400> 224
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> 225
<211> 221
<212> PRT
<213> Artificial Sequence

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

<400> 225
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

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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> 226
<211> 112
<212> PRT
<213> Artificial sequence

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

<400> 226
 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
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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> 227
<211> 117
<212> PRT
<213> Artificial sequence

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

<400> 227
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> 228
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-huMA79b.v17-HC(A118C) Variant - HC

<400> 228
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

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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 Cys 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
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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
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<210> 229
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-huMA79b.v17-HC(A118C) Variant - LC

<400> 229

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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
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215

<210> 230
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-huMA79b.v18-HC(A118C) Variant - HC

<400> 230

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	Cys	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> 231
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-huMA79b.v18-HC(A118C) Variant - LC

<400> 231

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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> 232
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-huMA79b.v28-HC(A118C) Variant - HC

<400> 232
 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 Cys 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> 233
<211> 218

<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-huMA79b.v28-HC(A118C) Variant - LC

<400> 233
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> 234
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-chMA79b- LC(V205C) Variant - HC

<400> 234
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
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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> 235
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-chMA79b- LC(V205C) Variant - LC

<400> 235
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
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 Cys Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 236
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-chMA79b- HC(A118C) Variant - HC

<400> 236
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 Cys 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> 237
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> ThioMAb-chMA79b- HC(A118C) Variant - LC

<400> 237
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
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> 238
<211> 893
<212> DNA
<213> Macaca fascicularis

<400> 238
tcatggtgat ggtgatgatg accggtacgc gtagaatcga gaccgaggag 50

agggttaggg ataggcttac cttcgaaccg cgggccctct agactcgagc 100

ggccgccact gtgctggata tctgcagaat gcccttggg 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> 239
<211> 231
<212> PRT
<213> Macaca fascicularis

<400> 239

Met	Ala	Arg	Leu	Ala	Leu	Ser	Pro	Val	Ser	Ser	His	Trp	Leu	Val	
1				5				10						15	
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> 240
<211> 800
<212> DNA
<213> Artificial sequence

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

<400> 240
acctcggttc tatcgattga attccaccat gggatggtca tgtatcatcc 50

tttttctagt agcaactgca actggagtac attcagatat cgtgctgacc 100

caatctccac cctctttggc tgtgtctcta gggcagaggg ccaccatatc 150

ctgcagagcc agtgaaagtg ttgatagtta tggcaaaact tttatgcact 200

ggcaccagca gaaaccagga cagccaccca aactcctcat ctatcgtgta 250

tccaacctag aatctgggat ccctgccagg ttcagtggca gtgggtcaag 300

gacagacttc accctcacca ttaatcctgt ggaggctgat gatgttgcaa 350

cctattactg tcagcaaagt aatgaggatc cgttcacgtt cggtggaggc 400

accaagctgg aaatcaaacg gaccgtggct gcaccatctg tcttcatctt 450

cccgccatct gatgagcagt tgaaatctgg aactgcctct gttgtgtgcc 500

tgctgaataa cttctatccc agagaggcca aagtacagtg gaaggtggat 550

aacgccctcc aatcgggtaa ctcccaggag agtgtcacag agcaggacag 600

caaggacagc acctacagcc tcagcagcac cctgacgctg agcaaagcag 650

actacgagaa acacaaagtc tacgcctgcg aagtcaccca tcagggcctg 700

agctcgcccg tcacaaagag cttcaacagg ggagagtgtt aagcttggcc 750

gccatggccc aacttgttta ttgcagctta taatggttac aaataaagca 800

<210> 241
<211> 218
<212> PRT
<213> Artificial sequence

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

<400> 241
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> 242
<211> 1500
<212> DNA
<213> Artificial sequence

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

<400> 242

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ctttttctag tagcaactgc aactggagta cattcagaag ttcagctgca 100

ggagtcggga cctggcctgg tgaaaccttc tcagtctctg tccctcacct 150

gcactgtcac tggctactca atcaccagtg attatgcctg gaactggatc 200

cggcagtttc caggaaacaa actggagtgg atgggcaaca tatggtacag 250

tggtagcact acctacaacc catctctcaa aagtcgaatc tctatcactc 300

gagacacatc caagaaccag ttcttcctgc agttgaattc tgtgacttct 350

gaggacacag ccacatatta ctgttcaaga atggacttct ggggtcaagg 400

caccactctc acagtctcct cagcctccac caagggccca tcggtcttcc 450
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ccctggcacc ctcctccaag agcacctctg ggggcacagc ggccctgggc 500

tgcctggtca aggactactt ccccgaaccg gtgacggtgt cgtggaactc 550

aggcgccctg accagcggcg tgcacacctt cccggctgtc ctacagtcct 600

caggactcta ctccctcagc agcgtggtga ctgtgccctc tagcagcttg 650

ggcacccaga cctacatctg caacgtgaat cacaagccca gcaacaccaa 700

ggtggacaag aaagttgagc ccaaatcttg tgacaaaact cacacatgcc 750

caccgtgccc agcacctgaa ctcctggggg gaccgtcagt cttcctcttc 800

cccccaaaac ccaaggacac cctcatgatc tcccggaccc ctgaggtcac 850

atgcgtggtg gtggacgtga gccacgaaga ccctgaggtc aagttcaact 900

ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa gccgcgggag 950

gagcagtaca acagcacgta ccgtgtggtc agcgtcctca ccgtcctgca 1000

ccaggactgg ctgaatggca aggagtacaa gtgcaaggtc tccaacaaag 1050

ccctcccagc ccccatcgag aaaaccatct ccaaagccaa agggcagccc 1100

cgagaaccac aggtgtacac cctgccccca tcccgggaag agatgaccaa 1150

gaaccaggtc agcctgacct gcctggtcaa aggcttctat cccagcgaca 1200

tcgccgtgga gtgggagagc aatgggcagc cggagaacaa ctacaagacc 1250

acgcctcccg tgctggactc cgacggctcc ttcttcctct acagcaagct 1300

caccgtggac aagagcaggt ggcagcaggg gaacgtcttc tcatgctccg 1350

tgatgcatga ggctctgcac aaccactaca cgcagaagag cctctccctg 1400

tctccgggta aatgagtgcg acggccctag agtcgacctg cagaagcttg 1450

gccgccatgg cccaacttgt ttattgcagc ttataatggt tacaaataaa 1500

<210> 243
<211> 441
<212> PRT
<213> Artificial sequence

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

<400> 243

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

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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
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<210> 244
<211> 441
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-MAb-anti-cynoCD79b(ch10D10)-HC(A118C) Variant - HC

<400> 244

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Asp 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 Cys 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
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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> 245
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Thio-MAb-anti-cynoCD79b(ch10D10)-HC(A118C) Variant - LC

<400> 245
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> 246
<211> 30
<212> PRT
<213> Artificial sequence

<220>
<223> Albumin binding peptide

<400> 246
Cys Asp Lys Thr His Thr Gly Gly Gly Ser Gln Arg Leu Met Glu
1 5 10 15

Asp Ile Cys Leu Pro Arg Trp Gly Cys Leu Trp Glu Asp Asp Phe
20 25 30

<210> 247
<211> 20
<212> PRT
<213> Artificial sequence

<220>
<223> Albumin binding peptide

<400> 247
Gln Arg Leu Met Glu Asp Ile Cys Leu Pro Arg Trp Gly Cys Leu
1 5 10 15

Trp Glu Asp Asp Phe
20

<210> 248
<211> 20
<212> PRT
<213> Artificial sequence

<220>
<223> Albumin binding peptide

<400> 248
Gln Arg Leu Ile Glu Asp Ile Cys Leu Pro Arg Trp Gly Cys Leu
1 5 10 15

Trp Glu Asp Asp Phe
20

<210> 249
<211> 18
<212> PRT
<213> Artificial sequence

<220>
<223> Albumin binding peptide

<400> 249
Arg Leu Ile Glu Asp Ile Cys Leu Pro Arg Trp Gly Cys Leu Trp
1 5 10 15

Glu Asp Asp

<210> 250
<211> 11
<212> PRT
<213> Artificial sequence

<220>
<223> Albumin binding peptide

<400> 250
Asp Ile Cys Leu Pro Arg Trp Gly Cys Leu Trp
5 10

<210> 251
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 251
Glu Val Gln Leu Cys Glu Ser Gly Gly Gly
5 10

<210> 252
<211> 11
<212> PRT
<213> Artificial sequence

<220>

<223> Thio-huMA79b HC-variant

<400> 252
Leu Arg Leu Ser Cys Cys Ala Ser Gly Tyr Thr
5 10

<210> 253
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 253
Met Asn Ser Leu Arg Cys Glu Asp Thr Ala Val
5 10

<210> 254
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 254
Thr Leu Val Thr Val Cys Ser Ala Ser Thr Lys
5 10

<210> 255
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 255
Val Thr Val Ser Ser Cys Ser Thr Lys Gly Pro
5 10

<210> 256
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 256
Val Ser Ser Ala Ser Cys Lys Gly Pro Ser Val
5 10

<210> 257
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 257
Trp Tyr Val Asp Gly Cys Glu Val His Asn Ala

5 10

<210> 258
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 258
Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu
5 10

<210> 259
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 259
Pro Pro Val Leu Asp Cys Asp Gly Ser Phe Phe
5 10

<210> 260
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 260
Glu Val Gln Leu Cys Gln Ser Gly Ala Glu
5 10

<210> 261
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 261
Val Lys Ile Ser Cys Cys Ala Thr Gly Tyr Thr
5 10

<210> 262
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 262
Leu Ser Ser Leu Thr Cys Glu Asp Ser Ala Val
5 10

<210> 263
<211> 11

<212> PRT
<213> Artificial sequence

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

<400> 263
Thr Ser Val Thr Val Cys Ser Ala Ser Thr Lys
5 10

<210> 264
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 264
Val Thr Val Ser Ser Cys Ser Thr Lys Gly Pro
5 10

<210> 265
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 265
Val Ser Ser Ala Ser Cys Lys Gly Pro Ser Val
5 10

<210> 266
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 266
Trp Tyr Val Asp Gly Cys Glu Val His Asn Ala
5 10

<210> 267
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 267
Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu
5 10

<210> 268
<211> 11
<212> PRT
<213> Artificial sequence

<220>

<223> Thio-chMA79b HC-variant

<400> 268
Pro Pro Val Leu Asp Cys Asp Gly Ser Phe Phe
5 10

<210> 269
<211> 10
<212> PRT
<213> Artificial sequence

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

<400> 269
Glu Val Gln Leu Cys Glu Ser Gly Pro Gly
5 10

<210> 270
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 270
Leu Ser Leu Thr Cys Cys Val Thr Gly Tyr Ser
5 10

<210> 271
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 271
Leu Asn Ser Val Thr Cys Glu Asp Thr Ala Thr
5 10

<210> 272
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 272
Thr Thr Leu Thr Val Cys Ser Ala Ser Thr Lys
5 10

<210> 273
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 273
Leu Thr Val Ser Ser Cys Ser Thr Lys Gly Pro

5 10

<210> 274
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 274
Val Ser Ser Ala Ser Cys Lys Gly Pro Ser Val
5 10

<210> 275
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 275
Trp Tyr Val Asp Gly Cys Glu Val His Asn Ala
5 10

<210> 276
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 276
Lys Gly Phe Tyr Pro Cys Asp Ile Ala Val Glu
5 10

<210> 277
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 277
Pro Pro Val Leu Asp Cys Asp Gly Ser Phe Phe
5 10

<210> 278
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 278
Ser Leu Ser Ala Ser Cys Gly Asp Arg Val Thr
5 10

<210> 279
<211> 11

<212> PRT
<213> Artificial sequence

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

<400> 279
Glu Ile Lys Arg Thr Cys Ala Ala Pro Ser Val
5 10

<210> 280
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 280
Thr Val Ala Ala Pro Cys Val Phe Ile Phe Pro
5 10

<210> 281
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 281
Phe Ile Phe Pro Pro Cys Asp Glu Gln Leu Lys
5 10

<210> 282
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 282
Asp Glu Gln Leu Lys Cys Gly Thr Ala Ser Val
5 10

<210> 283
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 283
Val Thr Glu Gln Asp Cys Lys Asp Ser Thr Tyr
5 10

<210> 284
<211> 11
<212> PRT
<213> Artificial sequence

<220>

<223> Thio-huMA79b LC-variant

<400> 284
Gly Leu Ser Ser Pro Cys Thr Lys Ser Phe Asn
5 10

<210> 285
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 285
Ser Leu Ala Val Ser Cys Gly Gln Arg Ala Thr
5 10

<210> 286
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 286
Glu Leu Lys Arg Thr Cys Ala Ala Pro Ser Val
5 10

<210> 287
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 287
Thr Val Ala Ala Pro Cys Val Phe Ile Phe Pro
5 10

<210> 288
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 288
Phe Ile Phe Pro Pro Cys Asp Glu Gln Leu Lys
5 10

<210> 289
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 289
Asp Glu Gln Leu Lys Cys Gly Thr Ala Ser Val

5 10

<210> 290
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 290
Val Thr Glu Gln Asp Cys Lys Asp Ser Thr Tyr
5 10

<210> 291
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 291
Gly Leu Ser Ser Pro Cys Thr Lys Ser Phe Asn
5 10

<210> 292
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 292
Ser Leu Ala Val Ser Cys Gly Gln Arg Ala Thr
5 10

<210> 293
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 293
Glu Ile Lys Arg Thr Cys Ala Ala Pro Ser Val
5 10

<210> 294
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 294
Thr Val Ala Ala Pro Cys Val Phe Ile Phe Pro
5 10

<210> 295
<211> 11

<212> PRT
<213> Artificial sequence

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

<400> 295
Phe Ile Phe Pro Pro Cys Asp Glu Gln Leu Lys
5 10

<210> 296
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 296
Asp Glu Gln Leu Lys Cys Gly Thr Ala Ser Val
5 10

<210> 297
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 297
Val Thr Glu Gln Asp Cys Lys Asp Ser Thr Tyr
5 10

<210> 298
<211> 11
<212> PRT
<213> Artificial sequence

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

<400> 298
Gly Leu Ser Ser Pro Cys Thr Lys Ser Phe Asn
5 10

<210> 299
<211> 441
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b-LC(V205C) Variant - HC

<400> 299
Asp 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

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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
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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> 300
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Thio anti-cynoCD79b(ch10D10)-LC(V205C) Variant - LC

<400> 300
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 Cys Thr
200 205 210

Lys Ser Phe Asn Arg Gly Glu Cys
215

<210> 301
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> anti-cynoCD79b (ch10D10) - variable of HC

<400> 301
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
110

<210> 302
<211> 112
<212> PRT
<213> Artificial sequence

<220>
<223> anti-cynoCD79b (ch10D10) - variable domain of LC

<400> 302
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
110

<210> 303
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.17

<400> 303
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> 304

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

<220>
<223> Heavy chain of huMA79bv.17

<400> 304

```
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> 305
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.18

<400> 305
 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> 306
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy chain of huMA79bv.18

<400> 306

```
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> 307
<211> 218
<212> PRT
<213> Artificial sequence

<220>
<223> Light chain of huMA79bv.28

<400> 307

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> 308
<211> 446
<212> PRT
<213> Artificial sequence

<220>
<223> Heavy chain of huMA79bv.28

<400> 308

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> 309
<211> 218
<212> PRT
<213> Artificial sequence

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

<400> 309
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 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> 310
<211> 446
<212> PRT
<213> Artificial sequence

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

<400> 310
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
```