735042000740SeqList

SEQUENCE LISTING

<110> Juno Therapeutics, Inc.
CHEN, Yan
SHAMAH, Steve
PAZMANY, Csaba
DUTTA-SIMMONS, Jui

<120> ANTIBODIES AND CHIMERIC ANTIGEN RECEPTORS SPECIFIC FOR CD19

<130> 735042000740

<140> Not Yet Assigned
<141> Concurrently Herewith

<150> US 62/043,273
<151> 2014-08-28

<150> US 62/078,942
<151> 2014-11-12

<160> 228

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 738
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 18 scFv (nt)

<400> 1
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tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgccc tgactcagcc tcgctcagtg tccggctttc ctggacaatc agtcaccatc 480
tcctgcactg gaaccaccag tgatgatgtc tcctggtacc aacaacaccc aggcaaagcc 540
ccccaactta tgctttatga tgtcagtaag cggccctccg gggtccctca tcgcttctct 600
ggctccaggt ctggcagagc ggcctccctg atcatctctg ggctccagac tgaggatgag 660
gctgattatt tctgctgctc atatgcaggc cgatacaact ctgtcctttt cggcggaggg 720

accaagctga ccgtccta 738

<210> 2
<211> 246
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 18 scFv (aa)

<400> 2

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Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
Thr Gln Pro Arg Ser Val Ser Gly Phe Pro Gly Gln Ser Val Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Thr Thr Ser Asp Asp Val Ser Trp Tyr Gln Gln His
                165                 170                 175
Pro Gly Lys Ala Pro Gln Leu Met Leu Tyr Asp Val Ser Lys Arg Pro
            180                 185                 190
Ser Gly Val Pro His Arg Phe Ser Gly Ser Arg Ser Gly Arg Ala Ala
        195                 200                 205
Ser Leu Ile Ile Ser Gly Leu Gln Thr Glu Asp Glu Ala Asp Tyr Phe
    210                 215                 220
Cys Cys Ser Tyr Ala Gly Arg Tyr Asn Ser Val Leu Phe Gly Gly Gly
225                 230                 235                 240
Thr Lys Leu Thr Val Leu
                245
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<210> 3
<211> 738
<212> DNA

<213> Homo sapiens

<220>
<223> Clone 18B scFv (nt)

<400> 3
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgccc tgactcagcc tcgctcagtg tccggctttc ctggacaatc agtcaccatc 480
tcctgcactg gaaccaccag tgatgatgtc tcctggtacc aacaacaccc aggcaaagcc 540
ccccaactta tgctttatga tgtcagtaag cggccctccg gggtccctca tcgcttctct 600
ggctccaggt ctggcagagc ggcctccctg atcatctctg ggctccagac tgaggatgag 660
gctgattatt tctgcagctc atatgcaggc cgatacaact ctgtcctttt cggcggaggg 720
accaagctga ccgtccta 738

<210> 4
<211> 246
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 18B scFv (aa)

<400> 4
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130   135   140
Thr Gln Pro Arg Ser Val Ser Gly Phe Pro Gly Gln Ser Val Thr Ile

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145                 150                 155                 160
Ser Cys Thr Gly Thr Thr Ser Asp Asp Val Ser Trp Tyr Gln Gln His
                165                 170                 175
Pro Gly Lys Ala Pro Gln Leu Met Leu Tyr Asp Val Ser Lys Arg Pro
            180                 185                 190
Ser Gly Val Pro His Arg Phe Ser Gly Ser Arg Ser Gly Arg Ala Ala
        195                 200                 205
Ser Leu Ile Ile Ser Gly Leu Gln Thr Glu Asp Glu Ala Asp Tyr Phe
    210                 215                 220
Cys Ser Ser Tyr Ala Gly Arg Tyr Asn Ser Val Leu Phe Gly Gly Gly
225                 230                 235                 240
Thr Lys Leu Thr Val Leu
                245
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<210> 5
<211> 750
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 17 scFv (nt)

<400> 5
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacaatg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 480
ttctgcactg gaaccagcag tgacgttggt ggttataact atgtctcctg gtaccagcag 540
ctcccaggaa cggcccccaa actcctcatc tatagtaata atcagcggcc ctcaggggtc 600
cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cagtgggctc 660
cggtccgagg atgaggctga ttattactgt gcagcatggg atgacagcct gagtgtggta 720
ttcggcggag ggaccaagct gaccgtcctc   750

<210> 6
<211> 250
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 17 scFv (aa)

<400> 6
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg

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 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145                 150                 155                 160
Phe Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Tyr Val Ser
                165                 170                 175
Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Ser
            180                 185                 190
Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Arg Ser Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Ser Val Val
225                 230                 235                 240
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245                 250
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<210> 7
<211> 747
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 76 scFv (nt)

<400> 7
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ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360

gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgtgc tgacgcagcc gccctcagtg tctgcggccc caggacagga ggtcaccatc 480
tcctgctctg gaagcagctc caacattggg aataattatg tatcctggta ccagcaactc 540
ccaggaacag cccccaaact cctcatttat gacaatgata agcgaccctc agggattcct 600
gaccgattct ctggctccaa gtctggcacg tcagccaccc tgggcatcac cggactccag 660
actggggacg aggccgatta ttactgcgga acatgggatg gcaatctgag tgctgtattc 720
ggcggaggga ccaaggtgac cgtccta 747

<210> 8
<211> 249
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 76 scFv (aa)

<400> 8
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Val Leu
    130   135   140
Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln Glu Val Thr Ile
145   150   155   160
Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp
                165   170   175
Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn
            180   185   190
Asp Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser Lys Ser
        195   200   205
Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu
    210   215   220
Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Gly Asn Leu Ser Ala Val Phe
225   230   235   240
Gly Gly Gly Thr Lys Val Thr Val Leu

<210> 9
<211> 744
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 5 scFv (nt)

<400> 9
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tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacaatg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
tcctatgagc tgactcagga ccctgctgtg tctgtggcct tgggacagac agtcaggatc 480
acatgccaag gagacagcct cagaagctat tatgcaagct ggtaccagca gaagccagga 540
caggcccctg tacttgtcat ctatgataaa aacaaccggc cctcagggat cccagaccga 600
ttctctggct ccagctcagg aaacacagct tccttgacca tcactggggc tcaggcggaa 660
gatgaggctg actactactg caactcccgg gacagcagtg gtaacaattg ggtgttcggc 720
ggagggacca agctgaccgt ccta 744

<210> 10
<211> 248
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 5 scFv (aa)

<400> 10
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe

100 105 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Tyr Glu Leu
130 135 140
Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln Thr Val Arg Ile
145 150 155 160
Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala Ser Trp Tyr Gln
165 170 175
Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr Asp Lys Asn Asn
180 185 190
Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Asn
195 200 205
Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu Asp Glu Ala Asp
210 215 220
Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asn Asn Trp Val Phe Gly
225 230 235 240
Gly Gly Thr Lys Leu Thr Val Leu
245

<210> 11
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH
(clones 18, 18B reversion, 76, 285)
(aa)

<400> 11
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser

115 120 125

<210> 12
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH (clones 17, 5, 1, 192)
(aa)

<400> 12
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 13
<211> 106
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 18 (aa)

<400> 13
Gln Ser Ala Leu Thr Gln Pro Arg Ser Val Ser Gly Phe Pro Gly Gln
1 5 10 15
Ser Val Thr Ile Ser Cys Thr Gly Thr Thr Ser Asp Asp Val Ser Trp
20 25 30
Tyr Gln Gln His Pro Gly Lys Ala Pro Gln Leu Met Leu Tyr Asp Val
35 40 45
Ser Lys Arg Pro Ser Gly Val Pro His Arg Phe Ser Gly Ser Arg Ser

```
    50                  55                  60
Gly Arg Ala Ala Ser Leu Ile Ile Ser Gly Leu Gln Thr Glu Asp Glu
65                  70                  75                  80
Ala Asp Tyr Phe Cys Cys Ser Tyr Ala Gly Arg Tyr Asn Ser Val Leu
                85                  90                  95
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 14
<211> 106
<212> PRT
<213> Homo sapiens

<220>
<223> VL, Clone 18B
(aa)

<400> 14

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Gln Ser Ala Leu Thr Gln Pro Arg Ser Val Ser Gly Phe Pro Gly Gln
 1               5                  10                  15
Ser Val Thr Ile Ser Cys Thr Gly Thr Thr Ser Asp Asp Val Ser Trp
            20                  25                  30
Tyr Gln Gln His Pro Gly Lys Ala Pro Gln Leu Met Leu Tyr Asp Val
        35                  40                  45
Ser Lys Arg Pro Ser Gly Val Pro His Arg Phe Ser Gly Ser Arg Ser
    50                  55                  60
Gly Arg Ala Ala Ser Leu Ile Ile Ser Gly Leu Gln Thr Glu Asp Glu
65                  70                  75                  80
Ala Asp Tyr Phe Cys Ser Ser Tyr Ala Gly Arg Tyr Asn Ser Val Leu
                85                  90                  95
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 15
<211> 110
<212> PRT
<213> Homo sapiens

<220>
<223> VL, Clone 17 (aa)

<400> 15

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

```
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
        35                  40                  45
Leu Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu
65                  70                  75                  80
Arg Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Asp Ser
                85                  90                  95
Leu Ser Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
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<210> 16
<211> 109
<212> PRT
<213> Homo sapiens

<220>
<223> VL, Clone 76 (aa)

<400> 16

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1               5                  10                  15
Glu Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20                  25                  30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Asp Asn Asp Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65                  70                  75                  80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Gly Asn Leu
                85                  90                  95
Ser Ala Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
            100                 105
```

<210> 17
<211> 108
<212> PRT
<213> Homo sapiens

<220>
<223> VL, Clone 5 (aa)

<400> 17

```
Ser Tyr Glu Leu Thr Gln Asp Pro Ala Val Ser Val Ala Leu Gly Gln
```

```
 1               5                  10                  15
Thr Val Arg Ile Thr Cys Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala
            20                  25                  30
Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
        35                  40                  45
Asp Lys Asn Asn Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser
    50                  55                  60
Ser Ser Gly Asn Thr Ala Ser Leu Thr Ile Thr Gly Ala Gln Ala Glu
65                  70                  75                  80
Asp Glu Ala Asp Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asn Asn
                85                  90                  95
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105
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<210> 18
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-H1 (aa)

<400> 18
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Asp Tyr Ala Met His
 1               5
```

<210> 19
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-H2 (aa)

<400> 19
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Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val Lys
 1               5                  10                  15
Gly
```

<210> 20
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-H3 (aa)

<400> 20
Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe Asp Ile
 1   5   10   15

<210> 21
<211> 9
<212> PRT
<213> Homo sapiens

<220>
<223> Clones 18, 18B CDR-L1 (aa)

<400> 21
Thr Gly Thr Thr Ser Asp Asp Val Ser
 1   5

<210> 22
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> Clones 18, 18B CDR-L2 (aa)

<400> 22
Asp Val Ser Lys Arg Pro Ser
 1   5

<210> 23
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 18 CDR-L3 (aa)

<400> 23
Cys Ser Tyr Ala Gly Arg Tyr Asn Ser Val Leu
 1   5   10

<210> 24
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 18B CDR-L3 (aa)

<400> 24
Ser Ser Tyr Ala Gly Arg Tyr Asn Ser Val Leu
 1   5   10

<210> 25
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 17 CDR-L1 (aa)

<400> 25
Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Tyr Val Ser
 1   5   10

<210> 26
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 17 CDR-L2 (aa)

<400> 26
Ser Asn Asn Gln Arg Pro Ser
 1   5

<210> 27

<211> 10
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 17 CDR-L3 (aa)

<400> 27
Ala Ala Trp Asp Asp Ser Leu Ser Val Val
 1   5   10

<210> 28
<211> 13
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 76 CDR-L1 (aa)

<400> 28
Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser
 1   5   10

<210> 29
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 76 CDR-L2 (aa)

<400> 29
Asp Asn Asp Lys Arg Pro Ser
 1   5

<210> 30
<211> 10
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 76 CDR-L3 (aa)

<400> 30
Gly Thr Trp Asp Gly Asn Leu Ser Ala Val

1 5 10

<210> 31
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 5 CDR-L1 (aa)

<400> 31
Gln Gly Asp Ser Leu Arg Ser Tyr Tyr Ala Ser
1 5 10

<210> 32
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 5 CDR-L2 (aa)

<400> 32
Asp Lys Asn Asn Arg Pro Ser
1 5

<210> 33
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 5 CDR-L3 (aa)

<400> 33
Asn Ser Arg Asp Ser Ser Gly Asn Asn Trp Val
1 5 10

<210> 34
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Synthetic

<220>
<223> Linker (aa)

<400> 34
Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 1   5   10   15

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

<220>
<223> Synthetic

<220>
<223> CDR-H2

<400> 35
Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr
 1   5   10

<210> 36
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L1 consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Thr, Ser or Gln

<220>
<221> VARIANT
<222> 3
<223> Xaa = Thr, Ser or Asp

<220>

<221> VARIANT
<222> 4
<223> Xaa = Thr or Ser

<220>
<221> VARIANT
<222> 5
<223> Xaa = null or Ser

<220>
<221> VARIANT
<222> 6
<223> Xaa = null, Asp or Asn

<220>
<221> VARIANT
<222> 7
<223> Xaa = null or Val

<220>
<221> VARIANT
<222> 8
<223> Xaa = null, Gly or Ile

<220>
<221> VARIANT
<222> 9
<223> Xaa = null, Gly or Arg

<220>
<221> VARIANT
<222> 10
<223> Xaa = Ser, Tyr or Asn

<220>
<221> VARIANT
<222> 11
<223> Xaa = Asp or Asn

<220>

<221> VARIANT
<222> 12
<223> Xaa = Asp or Tyr

<220>
<221> VARIANT
<222> 13
<223> Xaa = Val or Ala

<400> 36
Xaa Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ser
 1   5   10

<210> 37
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L2 consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Asp or Ser

<220>
<221> VARIANT
<222> 2
<223> Xaa = Val, Asn or Lys

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ser, Asn or Asp

<220>
<221> VARIANT
<222> 4
<223> Xaa = Lys, Gln or Asn

<400> 37

Xaa Xaa Xaa Xaa Arg Pro Ser
1 5

<210> 38
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L3

<220>
<221> VARIANT
<222> 1
<223> Xaa = Cys, Ser, Ala, Gly or Asn

<220>
<221> VARIANT
<222> 2
<223> Xaa = Ser, Ala or Thr

<220>
<221> VARIANT
<222> 3
<223> Xaa = Tyr, Trp or Arg

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ala or Asp

<220>
<221> VARIANT
<222> 5
<223> Xaa = Gly, Asp or Ser

<220>
<221> VARIANT
<222> 6
<223> Xaa = Arg, Ser or Asn

<220>
<221> VARIANT
<222> 7
<223> Xaa = Tyr, Leu or Gly

<220>
<221> VARIANT
<222> 8
<223> Xaa = Asn or Ser

<220>
<221> VARIANT
<222> 9
<223> Xaa = Ser or null

<220>
<221> VARIANT
<222> 10
<223> Xaa = Val, Ala or Asn

<220>
<221> VARIANT
<222> 11
<223> Xaa = Trp or null

<220>
<221> VARIANT
<222> 12
<223> Xaa = Leu or Val

<400> 38
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 39
<211> 120
<212> PRT
<213> Mus musculus

<220>
<223> FMC63 VH

<400> 39
Glu Val Lys Leu Gln Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln
 1   5   10   15
Ser Leu Ser Val Thr Cys Thr Val Ser Gly Val Ser Leu Pro Asp Tyr
            20   25   30
Gly Val Ser Trp Ile Arg Gln Pro Pro Arg Lys Gly Leu Glu Trp Leu
        35   40   45
Gly Val Ile Trp Gly Ser Glu Thr Thr Tyr Tyr Asn Ser Ala Leu Lys
    50   55   60
Ser Arg Leu Thr Ile Ile Lys Asp Asn Ser Lys Ser Gln Val Phe Leu
65   70   75   80
Lys Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Ile Tyr Tyr Cys Ala
                85   90   95
Lys His Tyr Tyr Tyr Gly Gly Ser Tyr Ala Met Asp Tyr Trp Gly Gln
            100   105   110
Gly Thr Ser Val Thr Val Ser Ser
        115   120

<210> 40
<211> 107
<212> PRT
<213> Mus musculus

<220>
<223> FMC63VL

<400> 40
Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
 1   5   10   15
Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Lys Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
        35   40   45
Tyr His Thr Ser Arg Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
65   70   75   80
Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Tyr
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Thr
            100   105

<210> 41
<211> 122
<212> PRT

<213> Mus musculus

<220>
<223> SJ25C1VH

<400> 41
Glu Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ser
 1   5   10   15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Ser Tyr
            20   25   30
Trp Met Asn Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Gln Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe
    50   55   60
Lys Gly Gln Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Gln Leu Ser Gly Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
                85   90   95
Ala Arg Lys Thr Ile Ser Ser Val Val Asp Phe Tyr Phe Asp Tyr Trp
            100   105   110
Gly Gln Gly Thr Thr Val Thr Val Ser Ser
        115   120

<210> 42
<211> 106
<212> PRT
<213> Mus musculus

<220>
<223> SJ25C1 VL

<400> 42
Asp Ile Glu Leu Thr Gln Ser Pro Lys Phe Met Ser Thr Ser Val Gly
 1   5   10   15
Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Gly Thr Asn
            20   25   30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Pro Leu Ile
        35   40   45
Tyr Ser Ala Thr Tyr Arg Asn Ser Gly Val Pro Asp Arg Phe Thr Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Asn Val Gln Ser
65   70   75   80
Lys Asp Leu Ala Asp Tyr Phe Cys Gln Gln Tyr Asn Arg Tyr Pro Tyr
                85   90   95
Thr Ser Gly Gly Gly Thr Lys Leu Glu Ile
            100   105

<210> 43
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> Linker

<400> 43
Gly Ser Thr Ser Gly Ser Gly Lys Pro Gly Ser Gly Glu Gly Ser Thr
 1   5   10   15
Lys Gly

<210> 44
<211> 747
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 488 scFv (nt)

<400> 44
gaagtgcagc tggtgcagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga acagtctgag agctgaggac accgccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
gaaattgtgt tgacgcagtc tccagccacc ctgtctttgt ctccagggga gaccgccacc 480
ctctcctgca gggccagtca gagtattaac cactacttag cctggtacca acagaaacct 540
ggccaggctc cccggctcct catctatgat gcctccaaca gggccactgg catcccagcc 600
aggttcagtg gcagtgggtc tgggacagac ttcactctca ccatcagcag cctagagcct 660
gaagattttg caacttacta ctgtcaacag agttacagtc accctcgaat gtacactttt 720
ggccagggga ccaaactgga tatcaaa   747

<210> 45
<211> 249
<212> PRT
<213> Homo sapiens

<220>

<223> Clone 488 scFv (aa)

<400> 45

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Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
    130                 135                 140
Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Thr Ala Thr
145                 150                 155                 160
Leu Ser Cys Arg Ala Ser Gln Ser Ile Asn His Tyr Leu Ala Trp Tyr
                165                 170                 175
Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Asp Ala Ser
            180                 185                 190
Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly
        195                 200                 205
Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala
    210                 215                 220
Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser His Pro Arg Met Tyr Thr Phe
225                 230                 235                 240
Gly Gln Gly Thr Lys Leu Asp Ile Lys
                245
```

<210> 46
<211> 747
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 1304 scFv (nt)

<400> 46

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cagatgcagc tggtgcagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
```

ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
gccatccgga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 480
gtcacttgcc aggcgagtca ggacattagc aactatttaa attggtatca gcagaaacca 540
ggaagagccc ctaagctcct gatctacgat gcatccaatg tgaaagcagg ggtcccatca 600
aggttcagtg ggggtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 660
gaagattttg caacttacta ctgtcaacag agttacagta cccctcaggc gtacactttt 720
ggccagggga ccaagctgga gatcaaa 747

<210> 47
<211> 249
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 1304 scFv (aa)

<400> 47

Gln	Met	Gln	Leu	Val	Gln	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Arg
1				5				10					15		
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asp	Asp	Tyr
			20					25					30		
Ala	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
		35					40					45			
Ser	Gly	Ile	Ser	Trp	Asn	Ser	Gly	Ser	Ile	Gly	Tyr	Ala	Asp	Ser	Val
	50					55					60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Ser	Leu	Tyr
65					70					75					80
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
				85					90					95	
Ala	Arg	Asp	Gln	Gly	Tyr	His	Tyr	Tyr	Asp	Ser	Ala	Glu	His	Ala	Phe
			100					105					110		
Asp	Ile	Trp	Gly	Gln	Gly	Thr	Val	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly
		115					120					125			
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Ala	Ile	Arg	Met
	130					135					140				
Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr
145					150					155					160
Val	Thr	Cys	Gln	Ala	Ser	Gln	Asp	Ile	Ser	Asn	Tyr	Leu	Asn	Trp	Tyr
				165					170					175	
Gln	Gln	Lys	Pro	Gly	Arg	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Asp	Ala	Ser
			180					185					190		
Asn	Val	Lys	Ala	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Gly	Gly	Ser	Gly
		195					200					205			
Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala

```
    210                 215                 220
Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Tyr Thr Phe
225                 230                 235                 240
Gly Gln Gly Thr Lys Leu Glu Ile Lys
                245
```

<210> 48
<211> 756
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 285 scFv (nt)

<400> 48

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gaggtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacagtc gatcaccatc 480
tcctgcactg gaaccagcag tgaccttggt ggttacaatt atgtctcctg gtatcaacac 540
cgcccaggca aagcccccaa actcatcatt tatgatgtca ctgttcggcc ctcaggggtt 600
tctgatcgct tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 660
caggctgagg acgaggctga ttattactgc ggctcatata caagcagtag cactcttctt 720
tgggtgttcg gcggagggac caagctcacc gtccta                          756
```

<210> 49
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 285 scFv (aa)

<400> 49

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

65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
130 135 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145 150 155 160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
165 170 175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
180 185 190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
195 200 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
210 215 220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225 230 235 240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
245 250

<210> 50
<211> 753
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 192B scFv (nt)

<400> 50
caggtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacaatg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
caggctgtgc tgactcagcc tcgctcagtg tccgggtctc ctggacagtc agtcaccatc 480
tcctgcactg gaatcagcag tggtgttgat agtcataggt atgtctcctg gtaccaacac 540
cacccaggca aagcccccaa actcatgatt tatgatttca gtaagcggcc ctcaggggtc 600
cctgatcgtt tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 660
caggctgagg atgaggctga ttactattgc agctcatatg cagccatctc ccctaattat 720
gtcttcggaa ctgggaccaa gctcaccgtc cta 753

<210> 51
<211> 251
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 192B scFv (aa)

<400> 51

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Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ala Val Leu
    130                 135                 140
Thr Gln Pro Arg Ser Val Ser Gly Ser Pro Gly Gln Ser Val Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Ile Ser Ser Gly Val Asp Ser His Arg Tyr Val Ser
                165                 170                 175
Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu Met Ile Tyr Asp
            180                 185                 190
Phe Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Ala Ile Ser Pro Asn Tyr
225                 230                 235                 240
Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
                245                 250
```

<210> 52
<211> 750
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 328 scFv (nt)

<400> 52
caggtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgccc tgactcagcc tgcctccgtg tctgggtctc ctggacattc gatcaccatc 480
tcctgcactg gaaccagaag tgacgtcggt ggttttgatt atgtctcctg gtaccagcat 540
aacccaggca aagcccccaa actcataatt tatgatgtca ctaagcggcc ctcaggggtc 600
tctaatcgct tctctggcgc caagtctggc atcacggcct ccctgaccat ctctgggctc 660
caggctgagg acgaggctga ttattactgc acctcatata gacccggtcc aacatttgtc 720
ttcggcaccg ggaccaagct caccgtccta 750

<210> 53
<211> 250
<212> PRT
<213> Homo sapiens

<400> 53
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130   135   140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly His Ser Ile Thr Ile
145   150   155   160
Ser Cys Thr Gly Thr Arg Ser Asp Val Gly Gly Phe Asp Tyr Val Ser
                165   170   175
Trp Tyr Gln His Asn Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180   185   190

```
Val Thr Lys Arg Pro Ser Gly Val Ser Asn Arg Phe Ser Gly Ala Lys
        195                 200                 205
Ser Gly Ile Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Thr Ser Tyr Arg Pro Gly Pro Thr Phe Val
225                 230                 235                 240
Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
                245                 250
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<210> 54
<211> 741
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 227 scFv (nt)

<400> 54

```
gaagtgcagc tggtgcagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
gacatccagt tgacccagtc tccttccacc ctgtctgcat ctgtaggaga cagagtcacc 480
atcacttgcc gggccagtca gagtattagt aggtggttgg cctggtatca gcagaaacca 540
gggaaagccc ctaagctcct gatctacgat gcatccaatt tggaaacagg ggtcccatcc 600
aggttcagtg gaagtggatc tgggacagat tttactttca ccatcagcag cctgcagcct 660
gaagatattg caacatatta ctgtcaacag tatgataatc tccctctcac tttcggcgga 720
gggaccaagg tggagatcaa a                                           741
```

<210> 55
<211> 247
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 227 scFv (aa)

<400> 55

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

```
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Leu
    130                 135                 140
Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly Asp Arg Val Thr
145                 150                 155                 160
Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Arg Trp Leu Ala Trp Tyr
                165                 170                 175
Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp Ala Ser
            180                 185                 190
Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
        195                 200                 205
Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala
    210                 215                 220
Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Leu Thr Phe Gly Gly
225                 230                 235                 240
Gly Thr Lys Val Glu Ile Lys
                245
```

<210> 56
<211> 744
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 1300 scFv (nt)

<400> 56

```
cagatgcagc tggtgcagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
gccatccgga tgacccagtc tccttccacc ctgtctgcat ctgtgggaga cagagtcacc 480
atcacttgcc gggccagtca gagcattagt cactacttgg cctggtatca acagaaacca 540
gggaaagccc ctaagctcct gatctttgat gcctcccgtt tggcaagtgg ggtcccatca 600
aggttcagtg gcagtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 660
```

gaagattttg cgacatacta ctgtcaacag agttacggtg cccctatgtt cactttcggc 720
cctgggacca gagtggatct caaa 744

<210> 57
<211> 248
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 1300 scFv (aa)

<400> 57

```
Gln Met Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Ile Arg Met
    130                 135                 140
Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly Asp Arg Val Thr
145                 150                 155                 160
Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser His Tyr Leu Ala Trp Tyr
                165                 170                 175
Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Phe Asp Ala Ser
            180                 185                 190
Arg Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly
        195                 200                 205
Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
    210                 215                 220
Thr Tyr Tyr Cys Gln Gln Ser Tyr Gly Ala Pro Met Phe Thr Phe Gly
225                 230                 235                 240
Pro Gly Thr Arg Val Asp Leu Lys
                245
```

<210> 58
<211> 753

<212> DNA
<213> Homo sapiens

<220>
<223> Clone 1 scFv (nt)

<400> 58
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacaatg 360
gtcacagtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
cagtctgccc tgactcagcc cgcctccgtg tctgggtctc ctggacagtc gatcaccatc 480
tcctgcactg ggaccagcag tgacgttggt gcttataact ttgtctcctg gtaccagcag 540
ctcccaggaa cagcccccaa attcctcatt tatgacaata ataaacgacc cccagggatt 600
cctgaccgat tctctggctc caagtctggc acgtcagcca ccctgggcat caccggactc 660
cagactgggg acgaggccga ttattactgc gcaacatggg atagcggcct gagtgctgtg 720
gtattcggcg gagggaccaa gctgaccgtc cta 753

<210> 59
<211> 251
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 1 scFv (aa)

<400> 59
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130   135   140

```
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr Asn Phe Val Ser
                165                 170                 175
Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Phe Leu Ile Tyr Asp
            180                 185                 190
Asn Asn Lys Arg Pro Pro Gly Ile Pro Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Ser Gly Leu Ser Ala Val
225                 230                 235                 240
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245                 250
```

<210> 60
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 192B (aa)

<400> 60

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120                 125
```

<210> 61
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 328 (aa)

<400> 61
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 62
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 1304 Clone 1300 (aa)

<400> 62
Gln Met Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110

Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
115 120 125

<210> 63
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clones 227, 488, 241 (aa)

<400> 63
Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
115 120 125

<210> 64
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 192B (aa)

<400> 64
Gln Ala Val Leu Thr Gln Pro Arg Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Val Thr Ile Ser Cys Thr Gly Ile Ser Ser Gly Val Asp Ser His
20 25 30
Arg Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu
35 40 45

```
Met Ile Tyr Asp Phe Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Ala Ala Ile
                85                  90                  95
Ser Pro Asn Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 65
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 285 (aa)

<400> 65

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 66
<211> 110
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 328 (aa)

<400> 66

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

```
Ser Ile Thr Ile Ser Cys Thr Gly Thr Arg Ser Asp Val Gly Gly Phe
            20                  25                  30
Asp Tyr Val Ser Trp Tyr Gln His Asn Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Ile Ile Tyr Asp Val Thr Lys Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ala Lys Ser Gly Ile Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Thr Ser Tyr Arg Pro Gly
                85                  90                  95
Pro Thr Phe Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 67
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 1 (aa)

<400> 67

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr
            20                  25                  30
Asn Phe Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Phe
        35                  40                  45
Leu Ile Tyr Asp Asn Asn Lys Arg Pro Pro Gly Ile Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu
65                  70                  75                  80
Gln Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Ser Gly
                85                  90                  95
Leu Ser Ala Val Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 68
<211> 109
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 1304 (aa)

<400> 68
Ala Ile Arg Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Val Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Asp Ala Ser Asn Val Lys Ala Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln
                85   90   95
Ala Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
            100   105

<210> 69
<211> 108
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 1300 (aa)

<400> 69
Ala Ile Arg Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser His Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Phe Asp Ala Ser Arg Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Gly Ala Pro Met
                85   90   95
Phe Thr Phe Gly Pro Gly Thr Arg Val Asp Leu Lys
            100   105

<210> 70
<211> 107
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 227 (aa)

<400> 70
Asp Ile Gln Leu Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Arg Trp
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Asp Ala Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro Leu
                85   90   95
Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
            100   105

<210> 71
<211> 109
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 488 (aa)

<400> 71
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
 1   5   10   15
Glu Thr Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Ile Asn His Tyr
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
        35   40   45
Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser His Pro Arg
                85   90   95
Met Tyr Thr Phe Gly Gln Gly Thr Lys Leu Asp Ile Lys
            100   105

<210> 72
<211> 17
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-H2 Clone 1304 Clone 1300 Clone 227 Clone 488 Clone 241 (aa)

<400> 72
Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val Lys
 1   5   10   15
Gly

<210> 73
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 192B Clone 192 (aa)

<400> 73
Thr Gly Ile Ser Ser Gly Val Asp Ser His Arg Tyr Val Ser
 1   5   10

<210> 74
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 285 (aa)

<400> 74
Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
 1   5   10

<210> 75
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 328 (aa)

<400> 75
Thr Gly Thr Arg Ser Asp Val Gly Gly Phe Asp Tyr Val Ser
 1   5   10

<210> 76
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 1 (aa)

<400> 76
Thr Gly Thr Ser Ser Asp Val Gly Ala Tyr Asn Phe Val Ser
 1   5   10

<210> 77
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 1304 Clone 241 (aa)

<400> 77
Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn
 1   5   10

<210> 78
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 1300 (aa)

<400> 78

Arg Ala Ser Gln Ser Ile Ser His Tyr Leu Ala
 1   5   10

<210> 79
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 227 (aa)

<400> 79
Arg Ala Ser Gln Ser Ile Ser Arg Trp Leu Ala
 1   5   10

<210> 80
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 488 (aa)

<400> 80
Arg Ala Ser Gln Ser Ile Asn His Tyr Leu Ala
 1   5   10

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

<220>
<223> Synthetic

<220>
<223> CDR-H2

<400> 81
Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly
 1   5   10

<210> 82
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-H2

<400> 82
Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly
 1   5   10

<210> 83
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L1
      Consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Thr, Gln or Arg

<220>
<221> VARIANT
<222> 2
<223> Xaa = Gly or Ala

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ile, Thr or Ser

<220>
<221> VARIANT
<222> 4

<223> Xaa = Ser, Arg or Gln

<220>
<221> VARIANT
<222> 5
<223> Xaa = null or Ser

<220>
<221> VARIANT
<222> 6
<223> Xaa = null, Asp or Gly

<220>
<221> VARIANT
<222> 7
<223> Xaa = null, Val or Leu

<220>
<221> VARIANT
<222> 8
<223> Xaa = Asp, Gly or Ser

<220>
<221> VARIANT
<222> 9
<223> Xaa = Ser, Gly, Ala or Ile

<220>
<221> VARIANT
<222> 10
<223> Xaa = His, Tyr, Phe, Ser or Asn

<220>
<221> VARIANT
<222> 11
<223> Xaa = Arg, Asn, Asp or His

<220>
<221> VARIANT
<222> 12

<223> Xaa = Tyr, Phe or Trp

<220>
<221> VARIANT
<222> 13
<223> Xaa = Val or Leu

<220>
<221> VARIANT
<222> 14
<223> Xaa = Ser, Asn or Ala

<400> 83
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 84
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L2 Consensus

<220>
<221> VARIANT
<222> 2
<223> Xaa = Phe, Val, Asn or Ala

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ser, Thr or Asn

<220>
<221> VARIANT
<222> 4
<223> Xaa = Lys, Val, Asn or Arg

<220>

<221> VARIANT
<222> 5
<223> Xaa = Arg, Val or Leu

<220>
<221> VARIANT
<222> 6
<223> Xaa = Pro, Lys, Ala or Glu

<220>
<221> VARIANT
<222> 7
<223> Xaa = Ser, Pro, Ala or Thr

<400> 84
Asp Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 85
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L3 Consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Ser, Gly, Thr, Ala or Gln

<220>
<221> VARIANT
<222> 2
<223> Xaa = Ser, Thr or Gln

<220>
<221> VARIANT
<222> 3
<223> Xaa = Tyr, Trp or Ser

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ala, Thr, Arg, Asp or Tyr

<220>
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<222> 5
<223> Xaa = Ala, Ser, Pro, Gly or Asn

<220>
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<222> 6
<223> Xaa = Ile, Ser, Gly, Thr, Leu, Ala or His

<220>
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<222> 7
<223> Xaa = Ser, Pro or Leu

<220>
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<223> Xaa = Pro, Thr, Ser, Gln, Met, Arg or null

<220>
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<222> 9
<223> Xaa = Asn, Leu, Ala, Met or null

<220>
<221> VARIANT
<222> 10
<223> Xaa = Leu or null

<220>
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<222> 11
<223> Xaa = Tyr, Trp, Phe, Val or Leu

<220>
<221> VARIANT
<222> 12
<223> Xaa = Val or Thr

<400> 85
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 86
<211> 753
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 192 scFv (nt)

<400> 86
gaagtgcagc tggtggagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag gataggctat 180
gcggactctg taaagggccg attcaccatc tccagagaca acgccaagaa ctccctgttt 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacaatg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
caggctgtgc tgactcagcc tcgctcagtg tccgggtctc ctggacagtc agtcaccatc 480
tcctgcactg gaatcagcag tggtgttgat agtcataggt atgtctcctg gtaccaacac 540
cacccaggca aagcccccaa actcatgatt tatgatttca gtaagcggcc ctcaggggtc 600
cctgatcgtt tctctggctc caagtctggc aacacggcct ccctgaccat ctctgggctc 660
caggctgagg atgaggctga ttactattgc tgctcatatg cagccatctc ccctaattat 720
gtcttcggaa ctgggaccaa gctgaccgtc cta   753

<210> 87
<211> 251
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 192 scFv (aa)

<400> 87
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

```
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ala Val Leu
    130                 135                 140
Thr Gln Pro Arg Ser Val Ser Gly Ser Pro Gly Gln Ser Val Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Ile Ser Ser Gly Val Asp Ser His Arg Tyr Val Ser
                165                 170                 175
Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu Met Ile Tyr Asp
            180                 185                 190
Phe Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Ala Ile Ser Pro Asn Tyr
225                 230                 235                 240
Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
                245                 250
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<210> 88
<211> 747
<212> DNA
<213> Homo sapiens

<220>
<223> Clone 241 scFv (nt)

<400> 88
gaagtgcagc tggtgcagtc tgggggaggc ttggtacagc ctggcaggtc cctgagactc 60
tcctgtgcag cctctggatt cacctttgat gattatgcca tgcactgggt ccggcaagct 120
ccagggaagg gcctggagtg ggtctcaggt attagttgga atagtggtag cataggctat 180
gcggactctg tgaagggccg attcaccatc tccagagaca acgccaagaa ctccctgtat 240
ctgcaaatga acagtctgag agctgaggac acggccgtgt attactgtgc gagagatcag 300
gggtatcatt actatgatag tgccgaacat gcttttgata tctggggcca agggacagtg 360
gtcaccgtct cctcaggtgg aggcggttca ggcggaggtg gctctggcgg tggcggatcg 420
gccatccgga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 480
gtcacttgcc aggcgagtca ggacattagc aactatttaa attggtatca gcagaaacca 540
gggagagccc ctaagctcct gatctacgat gcatccaatg tgaaagcagg ggtcccatca 600

aggttcagtg ggggtggatc tgggacagat ttcactctca ccatcagcag tctgcaacct 660
gaagattttg caacttacta ctgtcaacag agttacagta cccctcaggc gtacactttt 720
ggccagggga ccaagctgga tatcaaa 747

<210> 89
<211> 249
<212> PRT
<213> Homo sapiens

<220>
<223> Clone 241 scFv (aa)

<400> 89

Glu	Val	Gln	Leu	Val	Gln	Ser	Gly	Gly	Gly	Leu	Val	Gln	Pro	Gly	Arg
1				5				10					15		
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Asp	Asp	Tyr
		20					25					30			
Ala	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
	35					40					45				
Ser	Gly	Ile	Ser	Trp	Asn	Ser	Gly	Ser	Ile	Gly	Tyr	Ala	Asp	Ser	Val
50					55					60					
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Ser	Leu	Tyr
65				70					75					80	
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85					90					95		
Ala	Arg	Asp	Gln	Gly	Tyr	His	Tyr	Tyr	Asp	Ser	Ala	Glu	His	Ala	Phe
		100					105					110			
Asp	Ile	Trp	Gly	Gln	Gly	Thr	Val	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly
	115					120					125				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Ala	Ile	Arg	Met
130					135					140					
Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly	Asp	Arg	Val	Thr
145				150					155					160	
Val	Thr	Cys	Gln	Ala	Ser	Gln	Asp	Ile	Ser	Asn	Tyr	Leu	Asn	Trp	Tyr
			165					170					175		
Gln	Gln	Lys	Pro	Gly	Arg	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Asp	Ala	Ser
		180					185					190			
Asn	Val	Lys	Ala	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Gly	Gly	Ser	Gly
	195					200					205				
Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala
210					215					220					
Thr	Tyr	Tyr	Cys	Gln	Gln	Ser	Tyr	Ser	Thr	Pro	Gln	Ala	Tyr	Thr	Phe
225				230					235					240	
Gly	Gln	Gly	Thr	Lys	Leu	Asp	Ile	Lys							
			245												

<210> 90

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

<220>
<223> VL Clone 241 (aa)

<400> 90

```
Ala Ile Arg Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Val Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Asp Ala Ser Asn Val Lys Ala Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln
                85                  90                  95
Ala Tyr Thr Phe Gly Gln Gly Thr Lys Leu Asp Ile Lys
            100                 105
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<210> 91
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 192

<400> 91

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Gln Ala Val Leu Thr Gln Pro Arg Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Val Thr Ile Ser Cys Thr Gly Ile Ser Ser Gly Val Asp Ser His
            20                  25                  30
Arg Tyr Val Ser Trp Tyr Gln His His Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Met Ile Tyr Asp Phe Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Ala Ile
                85                  90                  95
Ser Pro Asn Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
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<210> 92
<211> 556
<212> PRT
<213> Homo sapiens

<220>
<223> CD19 Accession No. P15391

<400> 92
Met Pro Pro Pro Arg Leu Leu Phe Phe Leu Leu Phe Leu Thr Pro Met
 1   5   10   15
Glu Val Arg Pro Glu Glu Pro Leu Val Val Lys Val Glu Glu Gly Asp
            20   25   30
Asn Ala Val Leu Gln Cys Leu Lys Gly Thr Ser Asp Gly Pro Thr Gln
        35   40   45
Gln Leu Thr Trp Ser Arg Glu Ser Pro Leu Lys Pro Phe Leu Lys Leu
    50   55   60
Ser Leu Gly Leu Pro Gly Leu Gly Ile His Met Arg Pro Leu Ala Ile
65   70   75   80
Trp Leu Phe Ile Phe Asn Val Ser Gln Gln Met Gly Gly Phe Tyr Leu
                85   90   95
Cys Gln Pro Gly Pro Pro Ser Glu Lys Ala Trp Gln Pro Gly Trp Thr
            100   105   110
Val Asn Val Glu Gly Ser Gly Glu Leu Phe Arg Trp Asn Val Ser Asp
        115   120   125
Leu Gly Gly Leu Gly Cys Gly Leu Lys Asn Arg Ser Ser Glu Gly Pro
    130   135   140
Ser Ser Pro Ser Gly Lys Leu Met Ser Pro Lys Leu Tyr Val Trp Ala
145   150   155   160
Lys Asp Arg Pro Glu Ile Trp Glu Gly Glu Pro Pro Cys Leu Pro Pro
                165   170   175
Arg Asp Ser Leu Asn Gln Ser Leu Ser Gln Asp Leu Thr Met Ala Pro
            180   185   190
Gly Ser Thr Leu Trp Leu Ser Cys Gly Val Pro Pro Asp Ser Val Ser
        195   200   205
Arg Gly Pro Leu Ser Trp Thr His Val His Pro Lys Gly Pro Lys Ser
    210   215   220
Leu Leu Ser Leu Glu Leu Lys Asp Asp Arg Pro Ala Arg Asp Met Trp
225   230   235   240
Val Met Glu Thr Gly Leu Leu Leu Pro Arg Ala Thr Ala Gln Asp Ala
                245   250   255
Gly Lys Tyr Tyr Cys His Arg Gly Asn Leu Thr Met Ser Phe His Leu
            260   265   270
Glu Ile Thr Ala Arg Pro Val Leu Trp His Trp Leu Leu Arg Thr Gly
        275   280   285

```
Gly Trp Lys Val Ser Ala Val Thr Leu Ala Tyr Leu Ile Phe Cys Leu
    290                 295                 300
Cys Ser Leu Val Gly Ile Leu His Leu Gln Arg Ala Leu Val Leu Arg
305                 310                 315                 320
Arg Lys Arg Lys Arg Met Thr Asp Pro Thr Arg Arg Phe Phe Lys Val
                325                 330                 335
Thr Pro Pro Pro Gly Ser Gly Pro Gln Asn Gln Tyr Gly Asn Val Leu
            340                 345                 350
Ser Leu Pro Thr Pro Thr Ser Gly Leu Gly Arg Ala Gln Arg Trp Ala
        355                 360                 365
Ala Gly Leu Gly Gly Thr Ala Pro Ser Tyr Gly Asn Pro Ser Ser Asp
    370                 375                 380
Val Gln Ala Asp Gly Ala Leu Gly Ser Arg Ser Pro Pro Gly Val Gly
385                 390                 395                 400
Pro Glu Glu Glu Glu Gly Glu Gly Tyr Glu Glu Pro Asp Ser Glu Glu
                405                 410                 415
Asp Ser Glu Phe Tyr Glu Asn Asp Ser Asn Leu Gly Gln Asp Gln Leu
            420                 425                 430
Ser Gln Asp Gly Ser Gly Tyr Glu Asn Pro Glu Asp Glu Pro Leu Gly
        435                 440                 445
Pro Glu Asp Glu Asp Ser Phe Ser Asn Ala Glu Ser Tyr Glu Asn Glu
    450                 455                 460
Asp Glu Glu Leu Thr Gln Pro Val Ala Arg Thr Met Asp Phe Leu Ser
465                 470                 475                 480
Pro His Gly Ser Ala Trp Asp Pro Ser Arg Glu Ala Thr Ser Leu Gly
                485                 490                 495
Ser Gln Ser Tyr Glu Asp Met Arg Gly Ile Leu Tyr Ala Ala Pro Gln
            500                 505                 510
Leu Arg Ser Ile Arg Gly Gln Pro Gly Pro Asn His Glu Glu Asp Ala
        515                 520                 525
Asp Ser Tyr Glu Asn Met Asp Asn Pro Asp Gly Pro Asp Pro Ala Trp
    530                 535                 540
Gly Gly Gly Gly Arg Met Gly Thr Trp Ser Thr Arg
545                 550                 555


<210> 93
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 192B, Clone 192


<400> 93
Asp Phe Ser Lys Arg Pro Ser
 1               5
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<210> 94
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 285

<400> 94
Asp Val Thr Val Arg Pro Ser
 1   5

<210> 95
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 328

<400> 95
Asp Val Thr Lys Arg Pro Ser
 1   5

<210> 96
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 1

<400> 96
Asp Asn Asn Lys Arg Pro Pro
 1   5

<210> 97
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 1304 Clone 241

<400> 97
Asp Ala Ser Asn Val Lys Ala
 1   5

<210> 98
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 1300

<400> 98
Asp Ala Ser Arg Leu Ala Ser
 1   5

<210> 99
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 227

<400> 99
Asp Ala Ser Asn Leu Glu Thr
 1   5

<210> 100
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 488

<400> 100

Asp Ala Ser Asn Arg Ala Thr
1 5

<210> 101
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 192B

<400> 101
Ser Ser Tyr Ala Ala Ile Ser Pro Asn Tyr Val
1 5 10

<210> 102
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 192

<400> 102
Cys Ser Tyr Ala Ala Ile Ser Pro Asn Tyr Val
1 5 10

<210> 103
<211> 12
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 285

<400> 103
Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu Trp Val
1 5 10

<210> 104
<211> 10

<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 328

<400> 104
Thr Ser Tyr Arg Pro Gly Pro Thr Phe Val
 1   5   10

<210> 105
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 1

<400> 105
Ala Thr Trp Asp Ser Gly Leu Ser Ala Val Val
 1   5   10

<210> 106
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 1304 Clone 241

<400> 106
Gln Gln Ser Tyr Ser Thr Pro Gln Ala Tyr Thr
 1   5   10

<210> 107
<211> 10
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 1300

<400> 107
Gln Gln Ser Tyr Gly Ala Pro Met Phe Thr
 1   5   10

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

<220>
<223> CDR-L3 Clone 227

<400> 108
Gln Gln Tyr Asp Asn Leu Pro Leu Thr
 1   5

<210> 109
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 488

<400> 109
Gln Gln Ser Tyr Ser His Pro Arg Met Tyr Thr
 1   5   10

<210> 110
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L1 consensus

<220>
<221> VARIANT
<222> 1

<223> Xaa = Thr, Gln, Ser or Arg

<220>
<221> VARIANT
<222> 2
<223> Xaa = Gly or Ala

<220>
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<222> 3
<223> Xaa = Ile, Thr, Asp or Ser

<220>
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<222> 4
<223> Xaa = Ser, Arg, Thr or Gln

<220>
<221> VARIANT
<222> 5
<223> Xaa = null or Ser

<220>
<221> VARIANT
<222> 6
<223> Xaa = null, Asp, Asn or Gly

<220>
<221> VARIANT
<222> 7
<223> Xaa = null, Val or Leu

<220>
<221> VARIANT
<222> 8
<223> Xaa = any amino acid or null

<220>
<221> VARIANT
<222> 9
<223> Xaa = any amino acid or null

<220>
<221> VARIANT
<222> 10
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 11
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 12
<223> Xaa = Tyr, Phe, Asp or Trp

<220>
<221> VARIANT
<222> 13
<223> Xaa = Val, Ala or Leu

<220>
<221> VARIANT
<222> 14
<223> Xaa = Ser, Asn or Ala

<400> 110
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 111
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L1 consensus

<220>
<221> VARIANT

<222> 1
<223> Xaa = Thr, Gln, Ser or Arg

<220>
<221> VARIANT
<222> 2
<223> Xaa = Gly or Ala

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ile, Thr, Asp or Ser

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ser, Arg, Thr or Gln

<220>
<221> VARIANT
<222> 5
<223> Xaa = null or Ser

<220>
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<222> 6
<223> Xaa = Gly, Asp, Asn or null

<220>
<221> VARIANT
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<223> Xaa = null, Val or Leu

<220>
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<222> 8
<223> Xaa = Asp, Gly, Ile, Leu, Ser or null

<220>
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<222> 9
<223> Xaa = Ser, Gly, Ala, Ile, Arg or null

<220>
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<223> Xaa = His, Tyr, Phe, Ser or Asn

<220>
<221> VARIANT
<222> 11
<223> Xaa = Arg, Asn, Asp, His or Tyr

<220>
<221> VARIANT
<222> 12
<223> Xaa = Tyr, Phe, Asp or Trp

<220>
<221> VARIANT
<222> 13
<223> Xaa = Val, Ala, Leu

<220>
<221> VARIANT
<222> 14
<223> Xaa = Ser, Asn or Ala

<400> 111
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 112
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L2
      Consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Asp or Ser

<220>
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<222> 2
<223> Xaa = Phe, Val, Asn, Lys or Ala

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ser, Thr, Asp or Asn

<220>
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<222> 4
<223> Xaa = Lys, Val, Asn, Gln or Arg

<220>
<221> VARIANT
<222> 5
<223> Xaa = Arg, Val or Leu

<220>
<221> VARIANT
<222> 6
<223> Xaa = Pro, Lys, Ala or Glu

<220>
<221> VARIANT
<222> 7
<223> Xaa = Ser, Pro, Ala or Thr

<400> 112
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 113
<211> 12
<212> PRT

<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L3

<220>
<221> VARIANT
<222> 1
<223> Xaa = Cys, Ser, Ala, Gly or Asn

<220>
<221> VARIANT
<222> 2
<223> Xaa = Ser, Ala or Thr

<220>
<221> VARIANT
<222> 3
<223> Xaa = Tyr, Trp or Arg

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ala or Asp

<220>
<221> VARIANT
<222> 5
<223> Xaa = Gly, Asp or Ser

<220>
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<222> 6
<223> Xaa = Arg, Ser or Asn

<220>
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<222> 7
<223> Xaa = Tyr, Leu or Gly

<220>
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<222> 8
<223> Xaa = Asn or Ser

<220>
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<222> 9
<223> Xaa = Ser, Asn or null

<220>
<221> VARIANT
<222> 10
<223> Xaa = null

<220>
<221> VARIANT
<222> 11
<223> Xaa = Val, Ala or Trp

<220>
<221> VARIANT
<222> 12
<223> Xaa = Leu or Val

<400> 113
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 114
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L3 consensus

<220>
<221> VARIANT
<222> 1

<223> Xaa = Ser, Gly, Thr, Ala, Gln, Cys or Asn

<220>
<221> VARIANT
<222> 2
<223> Xaa = Ser, Gln, Ala or Thr

<220>
<221> VARIANT
<222> 3
<223> Xaa = Tyr, Ser, Trp or Arg

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ala, Asp, Arg, Thr or Tyr

<220>
<221> VARIANT
<222> 5
<223> Xaa = Ala, Ser, Pro, Gly, Asn or Asp

<220>
<221> VARIANT
<222> 6
<223> Xaa = Ile, Ser, Gly, Thr, Ala, Leu, His, Arg or
Asn

<220>
<221> VARIANT
<222> 7
<223> Xaa = Ser, Pro, Leu, Tyr or Gly

<220>
<221> VARIANT
<222> 8
<223> Xaa = Pro, Thr, Ser, Gln, Met, Arg, Asn or null

<220>
<221> VARIANT
<222> 9
<223> Xaa = Ser, Leu, Asn, Ala, Met or null

<220>
<221> VARIANT
<222> 10
<223> Xaa = Leu or null

<220>
<221> VARIANT
<222> 11
<223> Xaa = Tyr, Trp, Phe, Val, Ala or Leu

<220>
<221> VARIANT
<222> 12
<223> Xaa = Val, Thr or Leu

<400> 114
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 115
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L3 consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 2
<223> Xaa = Ser, Gln, Ala or Thr

<220>
<221> VARIANT
<222> 3

<223> Xaa = Tyr, Ser, Trp or Arg

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ala, Asp, Arg, Thr or Tyr

<220>
<221> VARIANT
<222> 5
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 6
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 7
<223> Xaa = Ser, Pro, Leu, Tyr or Gly

<220>
<221> VARIANT
<222> 8
<223> Xaa = any amino acid or null

<220>
<221> VARIANT
<222> 9
<223> Xaa = any amino acid or null

<220>
<221> VARIANT
<222> 10
<223> Xaa = Leu or null

<220>
<221> VARIANT
<222> 11

<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 12
<223> Xaa = Val, Thr or Leu

<400> 115
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 116
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 79

<400> 116
Gly Thr Trp Asp Ile Ser Leu Arg Phe Gly Val
 1   5   10

<210> 117
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 835

<400> 117
Cys Ser Tyr Glu Ala Pro Thr His Thr Tyr Val
 1   5   10

<210> 118
<211> 10
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 184

<400> 118
Ala Ala Trp Asp Asp Ser Leu Asn Val Val
 1   5   10

<210> 119
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 505

<400> 119
Cys Ser Tyr Ala Gly Ser Tyr Thr Phe Glu Val
 1   5   10

<210> 120
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 506

<400> 120
Cys Ser Phe Ala Gly Tyr Tyr Thr Tyr Trp Leu
 1   5   10

<210> 121
<211> 9
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 305

<220>
<221> VARIANT
<222> 3
<223> Xaa = any amino acid

<400> 121
Ser Ser Xaa Ala Gly Arg Lys Tyr Val
 1   5

<210> 122
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> Linker

<400> 122
Gly Gly Gly Ser
 1

<210> 123
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> Linker

<400> 123
Gly Gly Gly Gly Ser
 1   5

<210> 124
<211> 12
<212> PRT
<213> Homo sapiens

<220>
<223> spacer (IgG4hinge) (aa)

<400> 124
Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro

1 5 10

<210> 125
<211> 36
<212> PRT
<213> Homo sapiens

<220>
<223> spacer (IgG4hinge) (nt)

<400> 125
Gly Ala Ala Thr Cys Thr Ala Ala Gly Thr Ala Cys Gly Gly Ala Cys
1 5 10 15
Cys Gly Cys Cys Cys Thr Gly Cys Cys Cys Cys Cys Cys Thr Thr Gly
20 25 30
Cys Cys Cys Thr
35

<210> 126
<211> 119
<212> PRT
<213> Homo sapiens

<220>
<223> Hinge-CH3 spacer

<400> 126
Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Gly Gln Pro Arg
1 5 10 15
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys
20 25 30
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
35 40 45
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
50 55 60
Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
65 70 75 80
Arg Leu Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser
85 90 95
Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
100 105 110
Leu Ser Leu Ser Leu Gly Lys
115

<210> 127

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

<220>
<223> Hinge-CH2-CH3 spacer

<400> 127
Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe
 1   5   10   15
Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
            20   25   30
Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
        35   40   45
Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
    50   55   60
Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
65   70   75   80
Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
                85   90   95
Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser
            100   105   110
Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
        115   120   125
Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln
    130   135   140
Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
145   150   155   160
Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
                165   170   175
Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu
            180   185   190
Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser
        195   200   205
Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
    210   215   220
Leu Ser Leu Gly Lys
225

<210> 128
<211> 282
<212> PRT
<213> Homo sapiens

<220>
<223> IgD-hinge-Fc

<400> 128

```
Arg Trp Pro Glu Ser Pro Lys Ala Gln Ala Ser Ser Val Pro Thr Ala
 1               5                  10                  15
Gln Pro Gln Ala Glu Gly Ser Leu Ala Lys Ala Thr Thr Ala Pro Ala
            20                  25                  30
Thr Thr Arg Asn Thr Gly Arg Gly Gly Glu Glu Lys Lys Lys Glu Lys
        35                  40                  45
Glu Lys Glu Glu Gln Glu Glu Arg Glu Thr Lys Thr Pro Glu Cys Pro
    50                  55                  60
Ser His Thr Gln Pro Leu Gly Val Tyr Leu Leu Thr Pro Ala Val Gln
65                  70                  75                  80
Asp Leu Trp Leu Arg Asp Lys Ala Thr Phe Thr Cys Phe Val Val Gly
                85                  90                  95
Ser Asp Leu Lys Asp Ala His Leu Thr Trp Glu Val Ala Gly Lys Val
            100                 105                 110
Pro Thr Gly Gly Val Glu Glu Gly Leu Leu Glu Arg His Ser Asn Gly
        115                 120                 125
Ser Gln Ser Gln His Ser Arg Leu Thr Leu Pro Arg Ser Leu Trp Asn
    130                 135                 140
Ala Gly Thr Ser Val Thr Cys Thr Leu Asn His Pro Ser Leu Pro Pro
145                 150                 155                 160
Gln Arg Leu Met Ala Leu Arg Glu Pro Ala Ala Gln Ala Pro Val Lys
                165                 170                 175
Leu Ser Leu Asn Leu Leu Ala Ser Ser Asp Pro Pro Glu Ala Ala Ser
            180                 185                 190
Trp Leu Leu Cys Glu Val Ser Gly Phe Ser Pro Pro Asn Ile Leu Leu
        195                 200                 205
Met Trp Leu Glu Asp Gln Arg Glu Val Asn Thr Ser Gly Phe Ala Pro
    210                 215                 220
Ala Arg Pro Pro Pro Gln Pro Gly Ser Thr Thr Phe Trp Ala Trp Ser
225                 230                 235                 240
Val Leu Arg Val Pro Ala Pro Pro Ser Pro Gln Pro Ala Thr Tyr Thr
                245                 250                 255
Cys Val Val Ser His Glu Asp Ser Arg Thr Leu Leu Asn Ala Ser Arg
            260                 265                 270
Ser Leu Glu Val Ser Tyr Val Thr Asp His
        275                 280
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<210> 129
<211> 27
<212> PRT
<213> Homo sapiens

<220>
<223> CD28 (amino acids 153-179 of Accession No. P10747)

<400> 129

```
Phe Trp Val Leu Val Val Val Gly Gly Val Leu Ala Cys Tyr Ser Leu
 1               5                  10                  15
Leu Val Thr Val Ala Phe Ile Ile Phe Trp Val
            20                  25
```

<210> 130
<211> 66
<212> PRT
<213> Homo sapiens

<220>
<223> CD28 (amino acids 114-179 of Accession No. P10747)

<400> 130

```
Ile Glu Val Met Tyr Pro Pro Pro Tyr Leu Asp Asn Glu Lys Ser Asn
 1               5                  10                  15
Gly Thr Ile Ile His Val Lys Gly Lys His Leu Cys Pro Ser Pro Leu
            20                  25                  30
Phe Pro Gly Pro Ser Lys Pro Phe Trp Val Leu Val Val Val Gly Gly
        35                  40                  45
Val Leu Ala Cys Tyr Ser Leu Leu Val Thr Val Ala Phe Ile Ile Phe
    50                  55                  60
Trp Val
65
```

<210> 131
<211> 41
<212> PRT
<213> Homo sapiens

<220>
<223> CD28 (amino acids 180-220 of P10747)

<400> 131

```
Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr
 1               5                  10                  15
Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
            20                  25                  30
Pro Arg Asp Phe Ala Ala Tyr Arg Ser
        35                  40
```

<210> 132
<211> 41
<212> PRT
<213> Homo sapiens

<220>
<223> CD28 (LL to GG)

<400> 132
Arg Ser Lys Arg Ser Arg Gly Gly His Ser Asp Tyr Met Asn Met Thr
 1   5   10   15
Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro
            20   25   30
Pro Arg Asp Phe Ala Ala Tyr Arg Ser
        35   40

<210> 133
<211> 42
<212> PRT
<213> Homo sapiens

<220>
<223> 4-1BB (amino acids 214-255 of Q07011.1)

<400> 133
Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met
 1   5   10   15
Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe
            20   25   30
Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu
        35   40

<210> 134
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> CD3 zeta

<400> 134
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Gln Gln Gly
 1   5   10   15
Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
            20   25   30
Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
        35   40   45
Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
    50   55   60
Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg

65 70 75 80
Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
85 90 95
Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
100 105 110

<210> 135
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> CD3 zeta

<400> 135
Arg Val Lys Phe Ser Arg Ser Ala Glu Pro Pro Ala Tyr Gln Gln Gly
1 5 10 15
Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
20 25 30
Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
35 40 45
Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys
50 55 60
Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
65 70 75 80
Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
85 90 95
Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
100 105 110

<210> 136
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> CD3 zeta

<400> 136
Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala Tyr Lys Gln Gly
1 5 10 15
Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr
20 25 30
Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys
35 40 45
Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys

```
    50                  55                  60
Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg
65                  70                  75                  80
Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala
                85                  90                  95
Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
            100                 105                 110
```

<210> 137
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> T2A

<400> 137

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Leu Glu Gly Gly Gly Glu Gly Arg Gly Ser Leu Leu Thr Cys Gly Asp
 1               5                  10                  15
Val Glu Glu Asn Pro Gly Pro Arg
            20
```

<210> 138
<211> 357
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> tEGFR

<400> 138

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

```
65                  70                  75                  80
Leu Asp Ile Leu Lys Thr Val Lys Glu Ile Thr Gly Phe Leu Leu Ile
                85                  90                  95
Gln Ala Trp Pro Glu Asn Arg Thr Asp Leu His Ala Phe Glu Asn Leu
            100                 105                 110
Glu Ile Ile Arg Gly Arg Thr Lys Gln His Gly Gln Phe Ser Leu Ala
        115                 120                 125
Val Val Ser Leu Asn Ile Thr Ser Leu Gly Leu Arg Ser Leu Lys Glu
    130                 135                 140
Ile Ser Asp Gly Asp Val Ile Ile Ser Gly Asn Lys Asn Leu Cys Tyr
145                 150                 155                 160
Ala Asn Thr Ile Asn Trp Lys Lys Leu Phe Gly Thr Ser Gly Gln Lys
                165                 170                 175
Thr Lys Ile Ile Ser Asn Arg Gly Glu Asn Ser Cys Lys Ala Thr Gly
            180                 185                 190
Gln Val Cys His Ala Leu Cys Ser Pro Glu Gly Cys Trp Gly Pro Glu
        195                 200                 205
Pro Arg Asp Cys Val Ser Cys Arg Asn Val Ser Arg Gly Arg Glu Cys
    210                 215                 220
Val Asp Lys Cys Asn Leu Leu Glu Gly Glu Pro Arg Glu Phe Val Glu
225                 230                 235                 240
Asn Ser Glu Cys Ile Gln Cys His Pro Glu Cys Leu Pro Gln Ala Met
                245                 250                 255
Asn Ile Thr Cys Thr Gly Arg Gly Pro Asp Asn Cys Ile Gln Cys Ala
            260                 265                 270
His Tyr Ile Asp Gly Pro His Cys Val Lys Thr Cys Pro Ala Gly Val
        275                 280                 285
Met Gly Glu Asn Asn Thr Leu Val Trp Lys Tyr Ala Asp Ala Gly His
    290                 295                 300
Val Cys His Leu Cys His Pro Asn Cys Thr Tyr Gly Cys Thr Gly Pro
305                 310                 315                 320
Gly Leu Glu Gly Cys Pro Thr Asn Gly Pro Lys Ile Pro Ser Ile Ala
                325                 330                 335
Thr Gly Met Val Gly Ala Leu Leu Leu Leu Leu Val Val Ala Leu Gly
            340                 345                 350
Ile Gly Leu Phe Met
        355
```

<210> 139
<211> 557
<212> PRT
<213> Macaca mulatta

<220>
<223> Accession No. F7F486

<400> 139

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Met Pro Pro Pro Cys Leu Leu Phe Phe Leu Leu Phe Leu Thr Pro Met
 1               5                  10                  15
Glu Val Arg Pro Gln Glu Pro Leu Val Val Lys Val Glu Glu Gly Asp
            20                  25                  30
Asn Ala Val Leu Gln Cys Leu Glu Gly Thr Ser Asp Gly Pro Thr Gln
        35                  40                  45
Gln Leu Val Trp Cys Arg Asp Ser Pro Phe Glu Pro Phe Leu Asn Leu
    50                  55                  60
Ser Leu Gly Leu Pro Gly Met Gly Ile Arg Met Gly Pro Leu Gly Ile
65                  70                  75                  80
Trp Leu Leu Ile Phe Asn Val Ser Asn Gln Thr Gly Gly Phe Tyr Leu
                85                  90                  95
Cys Gln Pro Gly Leu Pro Ser Glu Lys Ala Trp Gln Pro Gly Trp Thr
            100                 105                 110
Val Ser Val Glu Gly Ser Gly Glu Leu Phe Arg Trp Asn Val Ser Asp
        115                 120                 125
Leu Gly Gly Leu Gly Cys Gly Leu Lys Asn Arg Ser Ser Glu Gly Pro
    130                 135                 140
Ser Ser Pro Ser Gly Lys Leu Asn Ser Ser Gln Leu Tyr Val Trp Ala
145                 150                 155                 160
Lys Asp Arg Pro Glu Met Trp Glu Gly Glu Pro Val Cys Gly Pro Pro
                165                 170                 175
Arg Asp Ser Leu Asn Gln Ser Leu Ser Gln Asp Leu Thr Met Ala Pro
            180                 185                 190
Gly Ser Thr Leu Trp Leu Ser Cys Gly Val Pro Pro Asp Ser Val Ser
        195                 200                 205
Arg Gly Pro Leu Ser Trp Thr His Val Arg Pro Lys Gly Pro Lys Ser
    210                 215                 220
Ser Leu Leu Ser Leu Glu Leu Lys Asp Asp Arg Pro Asp Arg Asp Met
225                 230                 235                 240
Trp Val Val Asp Thr Gly Leu Leu Leu Thr Arg Ala Thr Ala Gln Asp
                245                 250                 255
Ala Gly Lys Tyr Tyr Cys His Arg Gly Asn Trp Thr Lys Ser Phe Tyr
            260                 265                 270
Leu Glu Ile Thr Ala Arg Pro Ala Leu Trp His Trp Leu Leu Arg Ile
        275                 280                 285
Gly Gly Trp Lys Val Pro Ala Val Thr Leu Thr Tyr Leu Ile Phe Cys
    290                 295                 300
Leu Cys Ser Leu Val Gly Ile Leu Gln Leu Gln Arg Ala Leu Val Leu
305                 310                 315                 320
Arg Arg Lys Arg Lys Arg Met Thr Asp Pro Thr Arg Arg Phe Phe Lys
                325                 330                 335
Val Thr Pro Pro Pro Gly Ser Gly Pro Gln Asn Gln Tyr Gly Asn Val
            340                 345                 350
Leu Ser Leu Pro Thr Pro Thr Ser Gly Leu Gly Arg Ala Gln Arg Trp
        355                 360                 365
Ala Ala Gly Leu Gly Gly Thr Ala Pro Ser Tyr Gly Asn Pro Ser Ser
```

```
    370                 375                 380
Asp Val Gln Val Asp Gly Ala Val Gly Ser Arg Ser Pro Pro Gly Ala
385                 390                 395                 400
Gly Pro Glu Glu Glu Glu Gly Glu Gly Tyr Glu Glu Pro Asp Ser Glu
                405                 410                 415
Glu Gly Ser Glu Phe Tyr Glu Asn Asp Ser Asn Phe Gly Gln Asp Gln
            420                 425                 430
Leu Ser Gln Asp Gly Ser Gly Tyr Glu Asn Pro Glu Asp Glu Pro Leu
        435                 440                 445
Gly Pro Glu Asp Glu Asp Ser Phe Ser Asn Ala Glu Ser Tyr Glu Asn
    450                 455                 460
Glu Asp Glu Glu Leu Thr Gln Pro Val Ala Arg Thr Met Asp Phe Leu
465                 470                 475                 480
Ser Pro His Gly Ser Ala Trp Asp Pro Ser Arg Glu Ala Thr Ser Leu
                485                 490                 495
Gly Ser Gln Ser Tyr Glu Asp Met Arg Gly Leu Leu Tyr Ala Ala Pro
            500                 505                 510
Gln Leu Arg Thr Ile Arg Gly Gln Pro Gly Pro Asn His Glu Glu Asp
        515                 520                 525
Ala Asp Ser Tyr Glu Asn Met Asp Asn Pro Asp Gly Pro Asp Pro Ala
    530                 535                 540
Trp Gly Gly Gly Gly Arg Met Gly Thr Trp Ser Ala Arg
545                 550                 555


<210> 140
<211> 74
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> V1 chimeric rhesus/human

<400> 140
His Pro Lys Gly Pro Lys Ser Leu Leu Ser Leu Glu Leu Lys Asp Asp
 1               5                  10                  15
Arg Pro Ala Arg Asp Met Trp Val Met Glu Thr Gly Leu Leu Leu Pro
            20                  25                  30
Arg Ala Thr Ala Gln Asp Ala Gly Lys Tyr Tyr Cys His Arg Gly Asn
        35                  40                  45
Leu Thr Met Ser Phe His Leu Glu Ile Thr Ala Arg Pro Val Leu Trp
    50                  55                  60
His Trp Leu Leu Arg Thr Gly Gly Trp Lys
65                  70
```

<210> 141
<211> 75
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> V2 chimeric rhesus/human

<400> 141
Arg Pro Lys Gly Pro Lys Ser Ser Leu Leu Ser Leu Glu Leu Lys Asp
 1   5   10   15
Asp Arg Pro Asp Arg Asp Met Trp Val Val Asp Thr Gly Leu Leu Leu
            20   25   30
Thr Arg Ala Thr Ala Gln Asp Ala Gly Lys Tyr Tyr Cys His Arg Gly
        35   40   45
Asn Leu Thr Met Ser Phe His Leu Glu Ile Thr Ala Arg Pro Val Leu
    50   55   60
Trp His Trp Leu Leu Arg Thr Gly Gly Trp Lys
65   70   75

<210> 142
<211> 74
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> V3 chimeric rhesus/human

<400> 142
His Pro Lys Gly Pro Lys Ser Leu Leu Ser Leu Glu Leu Lys Asp Asp
 1   5   10   15
Arg Pro Ala Arg Asp Met Trp Val Met Glu Thr Gly Leu Leu Leu Pro
            20   25   30
Arg Ala Thr Ala Gln Asp Ala Gly Lys Tyr Tyr Cys His Arg Gly Asn
        35   40   45
Trp Thr Lys Ser Phe Tyr Leu Glu Ile Thr Ala Arg Pro Ala Leu Trp
    50   55   60
His Trp Leu Leu Arg Ile Gly Gly Trp Lys
65   70

<210> 143
<211> 32
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 143
His Pro Lys Gly Pro Lys Ser Leu Leu Ser Leu Glu Leu Lys Asp Asp
 1   5   10   15
Arg Pro Ala Arg Asp Met Trp Val Met Glu Thr Gly Leu Leu Leu Pro
            20   25   30

<210> 144
<211> 33
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 144
Arg Pro Lys Gly Pro Lys Ser Ser Leu Leu Ser Leu Glu Leu Lys Asp
 1   5   10   15
Asp Arg Pro Asp Arg Asp Met Trp Val Val Asp Thr Gly Leu Leu Leu
            20   25   30
Thr

<210> 145
<211> 16
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-H3 clone 305

<220>
<221> VARIANT
<222> 4
<223> Xaa = any amino acid

<220>

<221> VARIANT
<222> 6
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 15
<223> Xaa = any amino acid

<400> 145
Asp Gln Gly Xaa His Xaa Tyr Asp Ser Ala Glu His Ala Phe Xaa Ile
 1   5   10   15

<210> 146
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 255

<400> 146
Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn
 1   5   10

<210> 147
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 305

<400> 147
Thr Gly Thr Gly Arg Asp Ile Gly Ala Tyr Asp Tyr Val Ser
 1   5   10

<210> 148
<211> 14
<212> PRT
<213> Homo sapiens

<220>

<223> CDR-L1 Clone 327

<400> 148
Thr Glu Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
 1   5   10

<210> 149
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 505

<400> 149
Thr Gly Ala Ser Thr Asp Val Gly Gly Tyr Asn Tyr Val Ser
 1   5   10

<210> 150
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 506

<400> 150
Thr Gly Ala Ser Ser Asp Val Gly Gly Tyr Asp His Val Ser
 1   5   10

<210> 151
<211> 13
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 184

<400> 151
Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Thr Val Asn
 1   5   10

<210> 152
<211> 14
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 835

<400> 152
Thr Gly Pro Ile Ser Gly Val Gly Asp Tyr Thr Ser Val Ser
 1   5   10

<210> 153
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 272

<400> 153
Asp Asn Asn Lys Arg Pro Ser
 1   5

<210> 154
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 305

<400> 154
Gly Val Asn Lys Arg Pro Ser
 1   5

<210> 155
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 505

<400> 155
Asp Val Asn Lys Arg Pro Ser
 1   5

<210> 156
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 79

<400> 156
Asp Asn Asn Lys Arg Pro Ser
 1   5

<210> 157
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 835

<400> 157
Asp Val Thr Gln Arg Pro Ser
 1   5

<210> 158
<211> 12
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3
      Clone 272

<400> 158
Gly Thr Trp Asp Ser Ser Leu Asn Arg Asp Trp Val
 1   5   10

<210> 159
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 508

<400> 159
Cys Ser Tyr Ala Gly Arg Tyr Asn Ser Val Pro
 1   5   10

<210> 160
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-H1 Clone 1265

<400> 160
Thr Ser Gly Val Gly Val Gly
 1   5

<210> 161
<211> 16
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-H2 Clone 1265

<400> 161
Leu Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Ser Pro Ser Leu Lys Ser
 1   5   10   15

<210> 162

<211> 20
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-H3 Clone 1265

<400> 162
Ile Asp Tyr Gly Ser Gly Ser Tyr Ser Pro Arg Thr Ser Tyr Tyr Tyr
 1   5   10   15
Tyr Met Ser Val
            20

<210> 163
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L1 Clone 1265

<400> 163
Arg Ala Ser Gln Gly Ile Ser Ser Tyr Leu Asn
 1   5   10

<210> 164
<211> 7
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L2 Clone 1265

<400> 164
Ala Ala Ser Asn Leu Gln Ser
 1   5

<210> 165
<211> 9
<212> PRT
<213> Homo sapiens

<220>
<223> CDR-L3 Clone 1265

<400> 165
Gln Gln Gly Asp Ala Phe Pro Leu Thr
 1   5

<210> 166
<211> 130
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 1265

<400> 166
Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
 1   5   10   15
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
            20   25   30
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35   40   45
Trp Leu Ala Leu Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Ser Pro Ser
    50   55   60
Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val
65   70   75   80
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                85   90   95
Cys Ala His Ile Asp Tyr Gly Ser Gly Ser Tyr Ser Pro Arg Thr Ser
            100   105   110
Tyr Tyr Tyr Tyr Met Ser Val Trp Gly Lys Gly Thr Thr Val Thr Val
        115   120   125
Ser Ser
    130

<210> 167
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 213

<400> 167
Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 168
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 255

<400> 168
Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 169

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

<220>
<223> VH Clone 272

<400> 169
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 170
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 283

<400> 170
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
115 120 125

<210> 171
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 302

<400> 171
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
115 120 125

<210> 172
<211> 98
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 305

<220>
<221> VARIANT
<222> 64
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 65
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 68
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 69
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> 93
<223> Xaa = any amino acid

<220>
<221> VARIANT
<222> (98)...(0)
<223> Xaa = any amino acid

<400> 172
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Xaa
    50   55   60
Xaa Gly Arg Xaa Xaa Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Xaa Tyr Tyr Cys
                85   90   95
Ala Xaa

<210> 173
<211> 125
<212> PRT

<213> Homo sapiens

<220>
<223> VH Clone 314

<400> 173
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 174
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 379

<400> 174
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe

```
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115                 120                 125
```

<210> 175
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 324

<400> 175

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115                 120                 125
```

<210> 176
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 327

<220>
<221> VARIANT
<222> 76
<223> Xaa = any amino acid

<400> 176

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Xaa Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115                 120                 125
```

<210> 177
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 336

<400> 177

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115                 120                 125
```

<210> 178
<211> 125

<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 440

<400> 178
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 179
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 448

<400> 179
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95

Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
115 120 125

<210> 180
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 505

<400> 180
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 181
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 506

<400> 181
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30

```
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115                 120                 125
```

<210> 182
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 508

<400> 182

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115                 120                 125
```

<210> 183
<211> 125
<212> PRT
<213> Homo sapiens

<220>

<223> VH Clone 184

<400> 183
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115   120   125

<210> 184
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 79

<400> 184
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser
        115   120   125

<210> 185
<211> 125
<212> PRT
<213> Homo sapiens

<220>
<223> VH Clone 835

<400> 185
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Leu Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Lys Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
        115   120   125

<210> 186
<211> 107
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 1265

<400> 186
Ala Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Arg Ala Gly Lys Ala Pro Glu Leu Leu Ile
        35   40   45
Tyr Ala Ala Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Val Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asp Ala Phe Pro Leu
85 90 95
Thr Phe Gly Pro Gly Thr Lys Val Thr Ile Arg
100 105

<210> 187
<211> 109
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 213

<400> 187
Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15
Glu Thr Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Ile Asn His Tyr
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35 40 45
Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser His Pro Arg
85 90 95
Met Tyr Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 188
<211> 109
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 255

<400> 188
Ala Ile Arg Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Val Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr
20 25 30

```
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Arg Ala Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Asp Ala Ser Asn Val Lys Ala Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Gly Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln
                85                  90                  95
Ala Tyr Thr Phe Gly Gln Gly Thr Lys Leu Asp Ile Lys
            100                 105
```

<210> 189
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 272

<400> 189

```
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1               5                  10                  15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20                  25                  30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35                  40                  45
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50                  55                  60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65                  70                  75                  80
Thr Gly Asp Glu Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu
                85                  90                  95
Asn Arg Asp Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 190
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 283

<400> 190

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 191
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 302

<400> 191

```
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 192
<211> 109
<212> PRT
<213> Homo sapiens

<220>

<223> VL Clone 305

<220>
<221> VARIANT
<222> 5, 6, 8, 9, 93, 104
<223> Xaa = any amino acid

<400> 192
Gln Ser Val Leu Xaa Xaa Pro Xaa Xaa Ala Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Val Thr Val Ser Cys Thr Gly Thr Gly Arg Asp Ile Gly Ala Tyr
            20   25   30
Asp Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35   40   45
Leu Ile Tyr Gly Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Asp Asn Thr Ala Ser Leu Thr Val Ser Gly Leu
65   70   75   80
Gln Val Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Xaa Ala Gly Arg
                85   90   95
Lys Tyr Val Phe Gly Thr Gly Xaa Lys Val Thr Val Leu
            100   105

<210> 193
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 314

<400> 193
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
            20   25   30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
        35   40   45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
                85   90   95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu

100 105 110

<210> 194
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 379

<400> 194
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
20 25 30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
35 40 45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
50 55 60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
85 90 95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 195
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 324

<400> 195
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
20 25 30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
35 40 45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
50 55 60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu

65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
85 90 95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 196
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 327

<400> 196
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Glu Thr Ser Ser Asp Leu Gly Gly Tyr
20 25 30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
35 40 45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Xaa Asp Arg Phe
50 55 60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
85 90 95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 197
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 336

<400> 197
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
1 5 10 15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
20 25 30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu

```
        35                  40                  45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110


<210> 198
<211> 110
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 440


<400> 198
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly His
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Arg Ser Asp Val Gly Gly Phe
            20                  25                  30
Asp Tyr Val Ser Trp Tyr Gln His Asn Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Ile Ile Tyr Asp Val Thr Lys Arg Pro Ser Gly Val Ser Asn Arg Phe
    50                  55                  60
Ser Gly Ala Lys Ser Gly Ile Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Thr Ser Tyr Arg Pro Gly
                85                  90                  95
Pro Thr Phe Val Phe Gly Thr Gly Thr Lys Leu Asp Ile Lys
            100                 105                 110


<210> 199
<211> 112
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 448


<400> 199
Gln Ser Ala Leu Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln
```

```
 1               5                  10                  15
Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Ile Ile Tyr Asp Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser
                85                  90                  95
Ser Thr Leu Leu Trp Val Phe Gly Gly Gly Thr Lys Leu Asp Ile Lys
            100                 105                 110
```

<210> 200
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 505

<400> 200

```
Gln Ser Val Leu Thr Gln Pro Arg Ser Leu Ser Gly Ser Pro Gly Gln
 1               5                  10                  15
Ser Val Thr Ile Ala Cys Thr Gly Ala Ser Thr Asp Val Gly Gly Tyr
            20                  25                  30
Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu
        35                  40                  45
Met Ile Tyr Asp Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
    50                  55                  60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Phe Leu Thr Ile Ser Gly Leu
65                  70                  75                  80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Ser
                85                  90                  95
Tyr Thr Phe Glu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100                 105                 110
```

<210> 201
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 506

<400> 201
Gln Leu Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Val Thr Phe Ser Cys Thr Gly Ala Ser Ser Asp Val Gly Gly Tyr
            20   25   30
Asp His Val Ser Trp Tyr Gln His His Pro Gly Lys Gly Pro Lys Leu
        35   40   45
Leu Ile Tyr Asp Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Phe Ala Gly Tyr
                85   90   95
Tyr Thr Tyr Trp Leu Phe Gly Gly Gly Thr Lys Val Thr Val Leu
            100   105   110

<210> 202
<211> 106
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 508

<400> 202
Gln Ser Ala Leu Thr Gln Pro Arg Ser Val Ser Gly Phe Pro Gly Gln
 1   5   10   15
Ser Val Thr Ile Ser Cys Thr Gly Thr Thr Ser Asp Asp Val Ser Trp
            20   25   30
Tyr Gln Gln His Pro Gly Lys Ala Pro Gln Leu Met Leu Tyr Asp Val
        35   40   45
Ser Lys Arg Pro Ser Gly Val Pro His Arg Phe Ser Gly Ser Arg Ser
    50   55   60
Gly Arg Ala Ala Ser Leu Ile Ile Ser Gly Leu Gln Thr Glu Asp Glu
65   70   75   80
Ala Asp Tyr Phe Cys Cys Ser Tyr Ala Gly Arg Tyr Asn Ser Val Pro
                85   90   95
Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
            100   105

<210> 203
<211> 99
<212> PRT

<213> Homo sapiens

<220>
<223> VL Clone 184

<400> 203
Ser Tyr Val Leu Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln
 1   5   10   15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
            20   25   30
Thr Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Ser Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65   70   75   80
Ser Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
                85   90   95
Asn Val Val

<210> 204
<211> 110
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 79

<400> 204
Gln Ser Val Leu Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln
 1   5   10   15
Lys Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn
            20   25   30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
        35   40   45
Ile Tyr Asp Asn Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser
    50   55   60
Gly Ser Lys Ser Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln
65   70   75   80
Thr Gly Asp Glu Gly Asp Tyr Tyr Cys Gly Thr Trp Asp Ile Ser Leu
                85   90   95
Arg Phe Gly Val Phe Gly Gly Gly Thr Lys Val Thr Val Leu
            100   105   110

<210> 205
<211> 111
<212> PRT
<213> Homo sapiens

<220>
<223> VL Clone 835

<400> 205
Gln Ser Val Leu Thr Gln Pro Arg Ser Val Ser Gly Ser Pro Gly Gln
 1   5   10   15
Ser Val Thr Ile Ser Cys Thr Gly Pro Ile Ser Gly Val Gly Asp Tyr
            20   25   30
Thr Ser Val Ser Trp Tyr Gln His Tyr Pro Gly Lys Thr Pro Lys Leu
        35   40   45
Ile Ile Tyr Asp Val Thr Gln Arg Pro Ser Gly Val Pro Asn Arg Phe
    50   55   60
Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu
65   70   75   80
Gln Ala Asp Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Glu Ala Pro
                85   90   95
Thr His Thr Tyr Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
            100   105   110

<210> 206
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 1265

<400> 206
Gln Ile Thr Leu Lys Glu Ser Gly Pro Thr Leu Val Lys Pro Thr Gln
 1   5   10   15
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
            20   25   30
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
        35   40   45
Trp Leu Ala Leu Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Ser Pro Ser
    50   55   60
Leu Lys Ser Arg Leu Thr Ile Thr Lys Asp Thr Ser Lys Asn Gln Val
65   70   75   80
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr

```
                85                  90                  95
Cys Ala His Ile Asp Tyr Gly Ser Gly Ser Tyr Ser Pro Arg Thr Ser
            100                 105                 110
Tyr Tyr Tyr Tyr Met Ser Val Trp Gly Lys Gly Thr Thr Val Thr Val
        115                 120                 125
Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
    130                 135                 140
Ser Ala Ile Gln Leu Thr Gln Ser Pro Ser Phe Leu Ser Ala Ser Val
145                 150                 155                 160
Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser
                165                 170                 175
Tyr Leu Asn Trp Tyr Gln Gln Arg Ala Gly Lys Ala Pro Glu Leu Leu
            180                 185                 190
Ile Tyr Ala Ala Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser
        195                 200                 205
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Thr Ser Val Gln
    210                 215                 220
Pro Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asp Ala Phe Pro
225                 230                 235                 240
Leu Thr Phe Gly Pro Gly Thr Lys Val Thr Ile Arg
                245                 250
```

<210> 207
<211> 249
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 213

<400> 207

```
Gln Val Gln Leu Val Gln Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
```

```
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Glu Ile Val Leu
    130                 135                 140
Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly Glu Thr Ala Thr
145                 150                 155                 160
Leu Ser Cys Arg Ala Ser Gln Ser Ile Asn His Tyr Leu Ala Trp Tyr
                165                 170                 175
Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Asp Ala Ser
            180                 185                 190
Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly Ser Gly Ser Gly
        195                 200                 205
Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro Glu Asp Phe Ala
    210                 215                 220
Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser His Pro Arg Met Tyr Thr Phe
225                 230                 235                 240
Gly Gln Gly Thr Lys Leu Glu Ile Lys
                245
```

<210> 208
<211> 249
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 255

<400> 208

```
Glu Val Gln Leu Val Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Ser Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Tyr
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ala Ile Arg Met
    130                 135                 140
Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr
```

```
145                 150                 155                 160
Val Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp Tyr
                165                 170                 175
Gln Gln Lys Pro Gly Arg Ala Pro Lys Leu Leu Ile Tyr Asp Ala Ser
            180                 185                 190
Asn Val Lys Ala Gly Val Pro Ser Arg Phe Ser Gly Gly Gly Ser Gly
        195                 200                 205
Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala
    210                 215                 220
Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro Gln Ala Tyr Thr Phe
225                 230                 235                 240
Gly Gln Gly Thr Lys Leu Asp Ile Lys
                245
```

<210> 209
<211> 251
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 272

<400> 209

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Val Leu
    130                 135                 140
Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln Lys Val Thr Ile
145                 150                 155                 160
Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp
                165                 170                 175
Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn
```

180 185 190
Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser Lys Ser
195 200 205
Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu
210 215 220
Ala Asp Tyr Tyr Cys Gly Thr Trp Asp Ser Ser Leu Asn Arg Asp Trp
225 230 235 240
Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
245 250

<210> 210
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 283

<400> 210
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
130 135 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145 150 155 160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
165 170 175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
180 185 190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
195 200 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp

```
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225                 230                 235                 240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245                 250
```

<210> 211
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 302

<400> 211

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
                165                 170                 175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180                 185                 190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225                 230                 235                 240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
```

245 250

<210> 212
<211> 249
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 305

<220>
<221> VARIANT
<222> 64, 65, 68, 69, 93, 98, 102, 104, 113, 145, 146, 148, 149, 233, 244
<223> Xaa = any amino acid

<400> 212
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Xaa
50 55 60
Xaa Gly Arg Xaa Xaa Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Xaa Tyr Tyr Cys
85 90 95
Ala Xaa Asp Gln Gly Xaa His Xaa Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Xaa Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Val Leu
130 135 140
Xaa Xaa Pro Xaa Xaa Ala Ser Gly Ser Pro Gly Gln Ser Val Thr Val
145 150 155 160
Ser Cys Thr Gly Thr Gly Arg Asp Ile Gly Ala Tyr Asp Tyr Val Ser
165 170 175
Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Gly
180 185 190
Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys
195 200 205
Ser Asp Asn Thr Ala Ser Leu Thr Val Ser Gly Leu Gln Val Glu Asp
210 215 220
Glu Ala Asp Tyr Tyr Cys Ser Ser Xaa Ala Gly Arg Lys Tyr Val Phe

225 230 235 240
Gly Thr Gly Xaa Lys Val Thr Val Leu
245

<210> 213
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 314

<400> 213
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
130 135 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145 150 155 160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
165 170 175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
180 185 190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
195 200 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
210 215 220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225 230 235 240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
245 250

<210> 214
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 379

<400> 214
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130   135   140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145   150   155   160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
                165   170   175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180   185   190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
        195   200   205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210   215   220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225   230   235   240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245   250

<210> 215
<211> 252
<212> PRT

<213> Homo sapiens

<220>
<223> scFv Clone 324

<400> 215
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130   135   140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145   150   155   160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
                165   170   175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180   185   190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
        195   200   205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210   215   220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225   230   235   240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245   250

<210> 216
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 327

<220>
<221> VARIANT
<222> 76, 201
<223> Xaa = any amino acid

<400> 216
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1   5   10   15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20   25   30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35   40   45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Xaa Asn Ser Leu Phe
65   70   75   80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100   105   110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115   120   125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130   135   140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145   150   155   160
Ser Cys Thr Glu Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
                165   170   175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180   185   190
Val Thr Val Arg Pro Ser Gly Val Xaa Asp Arg Phe Ser Gly Ser Lys
        195   200   205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210   215   220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225   230   235   240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245   250

<210> 217
<211> 252
<212> PRT
<213> Homo sapiens

<220>

<223> scFv Clone 336

<400> 217

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
                165                 170                 175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180                 185                 190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225                 230                 235                 240
Trp Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
                245                 250
```

<210> 218
<211> 250
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 440

<400> 218

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly His Ser Ile Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Thr Arg Ser Asp Val Gly Gly Phe Asp Tyr Val Ser
                165                 170                 175
Trp Tyr Gln His Asn Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180                 185                 190
Val Thr Lys Arg Pro Ser Gly Val Ser Asn Arg Phe Ser Gly Ala Lys
        195                 200                 205
Ser Gly Ile Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Thr Ser Tyr Arg Pro Gly Pro Thr Phe Val
225                 230                 235                 240
Phe Gly Thr Gly Thr Lys Leu Asp Ile Lys
                245                 250
```

<210> 219
<211> 252
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 448

<400> 219

```
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
```

```
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
Thr Gln Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile
145                 150                 155                 160
Ser Cys Thr Gly Thr Ser Ser Asp Leu Gly Gly Tyr Asn Tyr Val Ser
                165                 170                 175
Trp Tyr Gln His Arg Pro Gly Lys Ala Pro Lys Leu Ile Ile Tyr Asp
            180                 185                 190
Val Thr Val Arg Pro Ser Gly Val Ser Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Gly Ser Tyr Thr Ser Ser Ser Thr Leu Leu
225                 230                 235                 240
Trp Val Phe Gly Gly Gly Thr Lys Leu Asp Ile Lys
                245                 250
```

<210> 220
<211> 236
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 505

<400> 220

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

```
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gln Ser Val
        115                 120                 125
Leu Thr Gln Pro Arg Ser Leu Ser Gly Ser Pro Gly Gln Ser Val Thr
    130                 135                 140
Ile Ala Cys Thr Gly Ala Ser Thr Asp Val Gly Gly Tyr Asn Tyr Val
145                 150                 155                 160
Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro Lys Leu Met Ile Tyr
                165                 170                 175
Asp Val Asn Lys Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser
            180                 185                 190
Lys Ser Gly Asn Thr Ala Phe Leu Thr Ile Ser Gly Leu Gln Ala Glu
        195                 200                 205
Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Ser Tyr Thr Phe
    210                 215                 220
Glu Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
225                 230                 235


<210> 221
<211> 251
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 506


<400> 221
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
```

```
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Leu Val Leu
    130                 135                 140
Thr Gln Pro Pro Ser Val Ser Gly Ser Pro Gly Gln Ser Val Thr Phe
145                 150                 155                 160
Ser Cys Thr Gly Ala Ser Ser Asp Val Gly Gly Tyr Asp His Val Ser
                165                 170                 175
Trp Tyr Gln His His Pro Gly Lys Gly Pro Lys Leu Leu Ile Tyr Asp
            180                 185                 190
Val Ser Lys Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys
        195                 200                 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Glu Asp
    210                 215                 220
Glu Ala Asp Tyr Tyr Cys Cys Ser Phe Ala Gly Tyr Tyr Thr Tyr Trp
225                 230                 235                 240
Leu Phe Gly Gly Gly Thr Lys Val Thr Val Leu
                245                 250
```

<210> 222
<211> 246
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 508

<400> 222

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Ala Leu
    130                 135                 140
```

Thr Gln Pro Arg Ser Val Ser Gly Phe Pro Gly Gln Ser Val Thr Ile
145 150 155 160
Ser Cys Thr Gly Thr Thr Ser Asp Asp Val Ser Trp Tyr Gln Gln His
165 170 175
Pro Gly Lys Ala Pro Gln Leu Met Leu Tyr Asp Val Ser Lys Arg Pro
180 185 190
Ser Gly Val Pro His Arg Phe Ser Gly Ser Arg Ser Gly Arg Ala Ala
195 200 205
Ser Leu Ile Ile Ser Gly Leu Gln Thr Glu Asp Glu Ala Asp Tyr Phe
210 215 220
Cys Cys Ser Tyr Ala Gly Arg Tyr Asn Ser Val Pro Phe Gly Gly Gly
225 230 235 240
Thr Lys Leu Thr Val Leu
245

<210> 223
<211> 239
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 184

<400> 223
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Ser Tyr Val Leu
130 135 140
Thr Gln Pro Pro Ser Ala Ser Gly Thr Pro Gly Gln Arg Val Thr Ile
145 150 155 160
Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Thr Val Asn Trp
165 170 175

```
Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Ser Asn
            180                 185                 190
Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Lys Ser
        195                 200                 205
Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln Ser Glu Asp Glu
    210                 215                 220
Ala Glu Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu Asn Val Val
225                 230                 235


<210> 224
<211> 250
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 79


<400> 224
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
 1               5                  10                  15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
            20                  25                  30
Ala Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
        35                  40                  45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
    50                  55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65                  70                  75                  80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
            100                 105                 110
Asp Ile Trp Gly Gln Gly Thr Val Val Thr Val Ser Ser Gly Gly Gly
        115                 120                 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Val Leu
    130                 135                 140
Thr Gln Pro Pro Ser Val Ser Ala Ala Pro Gly Gln Lys Val Thr Ile
145                 150                 155                 160
Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Asn Asn Tyr Val Ser Trp
                165                 170                 175
Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu Ile Tyr Asp Asn
            180                 185                 190
Asn Lys Arg Pro Ser Gly Ile Pro Asp Arg Phe Ser Gly Ser Lys Ser
        195                 200                 205
Gly Thr Ser Ala Thr Leu Gly Ile Thr Gly Leu Gln Thr Gly Asp Glu
    210                 215                 220
```

Gly Asp Tyr Tyr Cys Gly Thr Trp Asp Ile Ser Leu Arg Phe Gly Val
225 230 235 240
Phe Gly Gly Gly Thr Lys Val Thr Val Leu
245 250

<210> 225
<211> 251
<212> PRT
<213> Homo sapiens

<220>
<223> scFv Clone 835

<400> 225
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Arg
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Asp Asp Tyr
20 25 30
Ala Met His Trp Val Arg Leu Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Gly Ile Ser Trp Asn Ser Gly Arg Ile Gly Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Ser Leu Phe
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Lys Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Asp Gln Gly Tyr His Tyr Tyr Asp Ser Ala Glu His Ala Phe
100 105 110
Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Gly Gly Gly
115 120 125
Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gln Ser Val Leu
130 135 140
Thr Gln Pro Arg Ser Val Ser Gly Ser Pro Gly Gln Ser Val Thr Ile
145 150 155 160
Ser Cys Thr Gly Pro Ile Ser Gly Val Gly Asp Tyr Thr Ser Val Ser
165 170 175
Trp Tyr Gln His Tyr Pro Gly Lys Thr Pro Lys Leu Ile Ile Tyr Asp
180 185 190
Val Thr Gln Arg Pro Ser Gly Val Pro Asn Arg Phe Ser Gly Ser Lys
195 200 205
Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Asp Asp
210 215 220
Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Glu Ala Pro Thr His Thr Tyr
225 230 235 240
Val Phe Gly Thr Gly Thr Lys Leu Thr Val Leu
245 250

<210> 226
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L1 consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Thr, Gln, Arg or Ser

<220>
<221> VARIANT
<222> 2
<223> Xaa = Gly, Ala or Glu

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ile, Thr, Ser, Asp, Ala or Pro

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ser, Arg, Gln, Thr, Gly or Ile

<220>
<221> VARIANT
<222> 5
<223> Xaa = null, Ser, Arg or Thr

<220>
<221> VARIANT
<222> 6
<223> Xaa = Gly, Asp, Asn or null

<220>
<221> VARIANT
<222> 7
<223> Xaa = Val, Leu, null or Ile

<220>
<221> VARIANT
<222> 8
<223> Xaa = Asp, Gly, Ser, Ile, Leu or null

<220>
<221> VARIANT
<222> 9
<223> Xaa = Ser, Gly, Ala, Ile, null or Asp

<220>
<221> VARIANT
<222> 10
<223> Xaa = His, Tyr, Phe, Ser or Asn

<220>
<221> VARIANT
<222> 11
<223> Xaa = Arg, Asn, Asp, His, Tyr or Thr

<220>
<221> VARIANT
<222> 12
<223> Xaa = Tyr, Phe, Trp, Asp, His, Thr or Ser

<220>
<221> VARIANT
<222> 13
<223> Xaa = Val, Ala or Leu

<220>
<221> VARIANT
<222> 14
<223> Xaa = Ser, Asn or Ala

<400> 226

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5   10

<210> 227
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L2 consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Asp, Ser or Gly

<220>
<221> VARIANT
<222> 2
<223> Xaa = Phe, Val, Asn, Lys or Ala

<220>
<221> VARIANT
<222> 3
<223> Xaa = Ser, Thr, Asn or Asp

<220>
<221> VARIANT
<222> 4
<223> Xaa = Lys, Val, Asn, Arg or Gln

<220>
<221> VARIANT
<222> 5
<223> Xaa = Arg, Val or Leu

<220>
<221> VARIANT
<222> 6
<223> Xaa = Pro, Lys, Ala or Glu

<220>
<221> VARIANT
<222> 7
<223> Xaa = Ser, Pro, Ala or Thr

<400> 227
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 1   5

<210> 228
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<220>
<223> CDR-L3 consensus

<220>
<221> VARIANT
<222> 1
<223> Xaa = Ser, Gly, Thr, Ala, Gln, Cys or Asn

<220>
<221> VARIANT
<222> 2
<223> Xaa = Ser, Gln, Ala or Thr

<220>
<221> VARIANT
<222> 3
<223> Xaa = Tyr, Ser, Trp or Arg

<220>
<221> VARIANT
<222> 4
<223> Xaa = Ala, Asp, Arg, Thr or Tyr

<220>

<221> VARIANT
<222> 5
<223> Xaa = Ala, Ser, Pro, Gly, Asn or Asp

<220>
<221> VARIANT
<222> 6
<223> Xaa = Ile, Ser, Gly, Thr, Ala, Leu, His, Arg or
Asn

<220>
<221> VARIANT
<222> 7
<223> Xaa = Ser, Pro, Leu, Tyr or Gly

<220>
<221> VARIANT
<222> 8
<223> Xaa = Pro, Thr, Ser, Gln, Met, Arg or Asn

<220>
<221> VARIANT
<222> 9
<223> Xaa = Ser, Leu, Asn, Ala, Met, null or Arg

<220>
<221> VARIANT
<222> 10
<223> Xaa = Leu, null or Asp

<220>
<221> VARIANT
<222> 11
<223> Xaa = Tyr, Trp, Phe, Val, Ala, Leu

<220>
<221> VARIANT
<222> 12
<223> Xaa = Val, Thr, Leu or Pro

<400> 228

735042000740SeqList

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10