SEQUENCE LISTING

<110> CRAIGEN, Jennifer
WATTAM, Trevor Anthony Kenneth
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MAYES, Patrick
HAMBLIN, Paul Andrew
CLEGG, Stephanie
ALGATE, Paul
LEWIS, Alan Peter

<120> Antigen Binding Proteins

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<151> 2011-05-27

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 1   5   10   15
Ser Val Lys Met Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Lys Ala Lys Leu Thr Ala Val Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Thr Asn Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Thr Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
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Gln Gly Thr Leu Val Thr Val Ser Ser
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<211> 363
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cccggccagg gactggagtg gatcggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggcaa ggccaagctg accgccgtga cctcaaccag caccgcctac 240
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<212> PRT
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<400> 9
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 1   5   10   15
Asp Arg Val Thr Ile Ser Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Glu Leu Val Ile
        35   40   45
Tyr Tyr Thr Ser Asn 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 Gly Tyr Leu Glu Pro
65   70   75   80
Glu Asp Val Ala Thr Tyr Tyr Cys Gln Gln Tyr Arg Lys Leu Pro Trp
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Thr Phe Gly Gly Gly Ser Lys Leu Glu Ile Lys Arg
            100   105

<210> 10
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<212> DNA
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aggttctctg gcagcggcag cggcaccgac tacagcctga ccatcggcta tctggagccc 240
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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

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<211> 363
<212> DNA

<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
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agc 363

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<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 13
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 14
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
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agc 363

<210> 15
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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

<210> 16
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 16
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agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
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agc   363

<210> 17
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 17
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Thr Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser

115 120

<210> 18
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
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agc 363

<210> 19
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 19
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
50 55 60
Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
100 105 110
Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 20
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 20
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cccggacagg gcctggagtg gatcggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggcgaccctc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
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agc 363

<210> 21
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 21
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Thr Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115   120

<210> 22
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 22
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agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
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agc   363

<210> 23
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 23
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr

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65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
100 105 110
Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 24
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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agctgcaagg ccagcggcgg caccttcagc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agc 363

<210> 25
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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

<210> 26
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 26
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agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agc 363

<210> 27
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 27
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
50 55 60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Thr Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
100 105 110
Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 28
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 28
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agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
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aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
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agc 363

<210> 29
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 29
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr

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            20                  25                  30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Thr Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser
        115                 120
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<210> 30
<211> 363
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatcggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggcgaccctc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agc 363

<210> 31
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 31
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Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1               5                  10                  15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr
            20                  25                  30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35                  40                  45
Tyr Tyr Thr Ser Asn Leu His 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 Tyr Arg Lys Leu Pro Trp
                85                  90                  95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
            100                 105
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<210> 32
<211> 324
<212> DNA
<213> Artificial Sequence

<220>

<223> Humansed antibody sequence

<400> 32
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attacctgct ccgccagcca ggacatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ccaagctgct gatctactac acctccaacc tgcactccgg cgtgcccagc 180
aggttcagcg gaagcggcag cggcaccgat ttcaccctga ccatctccag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcag tacaggaagc tcccctggac tttcggccag 300
ggcaccaaac tggagatcaa gcgt 324

<210> 33
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 33
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Tyr Thr Ser Asn Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Arg Lys Leu Pro Trp
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
            100   105

<210> 34
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 34
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attacctgct ccgccagcca ggacatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ccaagctgct gatctactac acctccaacc tgcactccgg cgtgcccagc 180
aggttcagcg gaagcggcag cggcaccgat tacaccctga ccatctccag cctgcagccc 240
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ggcaccaaac tggagatcaa gcgt 324

<210> 35
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 35
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr

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            20                  25                  30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Val Ile
        35                  40                  45
Tyr Tyr Thr Ser Asn Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                  55                  60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65                  70                  75                  80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Arg Lys Leu Pro Trp
                85                  90                  95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
            100                 105
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<210> 36
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 36
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attacctgct ccgccagcca ggacatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ccgagctggt gatctactac acctccaacc tgcactccgg cgtgcccagc 180
aggttcagcg gaagcggcag cggcaccgat tacaccctga ccatctccag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcag tacaggaagc tcccctggac tttcggccag 300
ggcaccaaac tggagatcaa gcgt 324

<210> 37
<211> 310
<212> PRT
<213> homo sapiens

<400> 37

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

```
Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
225                 230                 235                 240
Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
                245                 250                 255
Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
            260                 265                 270
Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
        275                 280                 285
Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
    290                 295                 300
Ser Leu Ser Pro Gly Lys
305                 310


<210> 38
<211> 930
<212> DNA
<213> homo sapiens

<400> 38
atgccgctgc tgctactgct gcccctgctg tgggcagggg cgctagctat gctgcagatg 60
gccggccagt gcagccagaa cgagtacttc gacagcctgc tgcacgcctg catcccctgc 120
cagctgagat gcagcagcaa cacacctcct ctgacctgcc agagatactg caacgccagc 180
gtgaccaaca gcgtgaaggg caccaactcc ggagagaacc tgtacttcca aggggatccc 240
aaatcttgtg acaaaactca cacatgccca ccgtgcccag cacctgaact cctgggggga 300
ccgtcagtct tcctcttccc cccaaaaccc aaggacaccc tcatgatctc ccggacccct 360
gaggtcacat gcgtggtggt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg 420
tacgtggacg gcgtggaggt gcataatgcc aagacaaagc cgcgggagga gcagtacaac 480
agcacgtacc gtgtggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag 540
gagtacaagt gcaaggtctc caacaaagcc ctcccagccc ccatcgagaa aaccatctcc 600
aaagccaaag ggcagccccg agagccacag gtgtacaccc tgcccccatc ccgggatgag 660
ctgaccaaga accaggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc 720
gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccgtg 780
ctggactccg acggctcctt cttcctctac agcaagctca ccgtggacaa gagcaggtgg 840
cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg 900
cagaagagcc tctccctgtc tccgggtaaa                                  930

<210> 39
<211> 307
<212> PRT
<213> homo sapiens

<400> 39
Met Pro Leu Leu Leu Leu Leu Pro Leu Leu Trp Ala Gly Ala Leu Ala
 1                5                  10                  15
Met Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser Leu Leu His
            20                  25                  30
Ala Cys Ile Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr Pro Pro Leu
        35                  40                  45
Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser Val Lys Gly
    50                  55                  60
Thr Asn Ser Gly Glu Asn Leu Tyr Phe Gln Gly Asp Pro Lys Ser Cys
65                  70                  75                  80
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
                85                  90                  95
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
            100                 105                 110
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
        115                 120                 125
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
    130                 135                 140
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
145                 150                 155                 160
```

```
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
                165                 170                 175
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
            180                 185                 190
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
        195                 200                 205
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
    210                 215                 220
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
225                 230                 235                 240
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
                245                 250                 255
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
            260                 265                 270
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
        275                 280                 285
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
    290                 295                 300
Pro Gly Lys
305
```

<210> 40
<211> 921
<212> DNA
<213> homo sapiens

<400> 40

```
atgccgctgc tgctactgct gcccctgctg tgggcagggg cgctagctat ggccggccag 60
tgcagccaga acgagtactt cgacagcctg ctgcacgcct gcatcccctg ccagctgaga 120
tgcagcagca acacacctcc tctgacctgc cagagatact gcaacgccag cgtgaccaac 180
agcgtgaagg gcaccaactc cggagagaac ctgtacttcc aaggggatcc caaatcttgt 240
gacaaaactc acacatgccc accgtgccca gcacctgaac tcctgggggg accgtcagtc 300
ttcctcttcc ccccaaaacc caaggacacc ctcatgatct cccggacccc tgaggtcaca 360
tgcgtggtgg tggacgtgag ccacgaagac cctgaggtca agttcaactg gtacgtggac 420
ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagtacaa cagcacgtac 480
cgtgtggtca gcgtcctcac cgtcctgcac caggactggc tgaatggcaa ggagtacaag 540
tgcaaggtct ccaacaaagc cctcccagcc cccatcgaga aaaccatctc caaagccaaa 600
gggcagcccc gagagccaca ggtgtacacc ctgcccccat cccgggatga gctgaccaag 660
aaccaggtca gcctgacctg cctggtcaaa ggcttctatc ccagcgacat cgccgtggag 720
tgggagagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gctggactcc 780
gacggctcct tcttcctcta cagcaagctc accgtggaca agagcaggtg gcagcagggg 840
aacgtcttct catgctccgt gatgcatgag gctctgcaca accactacac gcagaagagc 900
ctctccctgt ctccgggtaa a                                          921
```

<210> 41
<211> 306
<212> PRT
<213> cynomolgous macaque

<400> 41

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

```
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
            100                 105                 110
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
        115                 120                 125
Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
    130                 135                 140
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
145                 150                 155                 160
Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
                165                 170                 175
Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
            180                 185                 190
Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
        195                 200                 205
Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
    210                 215                 220
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
225                 230                 235                 240
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
                245                 250                 255
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
            260                 265                 270
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
        275                 280                 285
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
    290                 295                 300
Gly Lys
305
```

<210> 42
<211> 918
<212> DNA
<213> cynomolgous macaque

<400> 42

```
atgccgctgc tgctactgct gcccctgctg tgggcagggg cgctagctat ggccagacag 60
tgcagccaga acgagtactt cgacagcctg ctgcacgact gcaagccctg ccagctgaga 120
tgcagcagca cacctcctct gacctgccag agatactgca acgccagcat gaccaacagc 180
gtgaagggca tgaactccgg agagaacctg tacttccaag gggatcccaa atcttgtgac 240
aaaactcaca catgcccacc gtgcccagca cctgaactcc tgggggacc gtcagtcttc 300
ctcttccccc caaaacccaa ggacaccctc atgatctccc ggacccctga ggtcacatgc 360
gtggtggtgg acgtgagcca cgaagaccct gaggtcaagt tcaactggta cgtggacggc 420
gtggaggtgc ataatgccaa gacaaagccg cgggaggagc agtacaacag cacgtaccgt 480
gtggtcagcg tcctcaccgt cctgcaccag gactggctga atggcaagga gtacaagtgc 540
aaggtctcca acaaagccct cccagccccc atcgagaaaa ccatctccaa agccaaaggg 600
cagccccgag agccacaggt gtacaccctg cccccatccc gggatgagct gaccaagaac 660
caggtcagcc tgacctgcct ggtcaaaggc ttctatccca gcgacatcgc cgtggagtgg 720
gagagcaatg ggcagccgga gaacaactac aagaccacgc ctcccgtgct ggactccgac 780
ggctccttct tcctctacag caagctcacc gtggacaaga gcaggtggca gcaggggaac 840
gtcttctcat gctccgtgat gcatgaggct ctgcacaacc actacacgca gaagagcctc 900
tccctgtctc cgggtaaa                                              918
```

<210> 43
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 43

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
```

eolf-seql

```
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Asn Tyr
            20                  25                  30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130                 135                 140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 44
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 44
caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg ccagcggcgg caccttcagc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
atctacaacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag 1353

<210> 45
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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

```
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 46
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 46

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caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
atctacaacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
```

atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag 1353

<210> 47
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 47
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Thr Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115   120   125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130   135   140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145   150   155   160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165   170   175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180   185   190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195   200   205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210   215   220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225   230   235   240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245   250   255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260   265   270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275   280   285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290   295   300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305   310   315   320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325   330   335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340   345   350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355   360   365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370   375   380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro

385 390 395 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
405 410 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
420 425 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
435 440 445
Pro Gly Lys
450

<210> 48
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 48
caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacaacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag 1353

<210> 49
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 49
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
1 5 10 15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
20 25 30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
50 55 60
Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65 70 75 80

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Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Thr Arg Gly Ala Ile Tyr Asn Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130                 135                 140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 50
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 50
caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca cgagcaccag caccgcctac 240

```
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacaacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag                              1353
```

<210> 51
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 51

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

```
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 52
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 52

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caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatcggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggcgaccctc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacaacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag                              1353
```

<210> 53
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 53
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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Thr Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130                 135                 140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 54
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 54
caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgcccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag 1353

<210> 55
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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

```
145                 150                 155                 160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 56
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 56

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caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg ccagcggcgg caccttcagc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgcccccga gctgctggga 720
ggccccagcg tgttcctgtt cccccccaag cctaaggaca ccctgatgat cagcagaacc 780
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cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag                              1353

<210> 57
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 57
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20                  25                  30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130                 135                 140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
```

```
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
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<210> 58
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 58

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caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcgc caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccctgcc ctgcccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag                              1353
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<210> 59
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 59

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

```
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Thr Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100                 105                 110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115                 120                 125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130                 135                 140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145                 150                 155                 160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165                 170                 175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180                 185                 190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195                 200                 205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210                 215                 220
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
```

<210> 60
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 60
caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatgggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggtgaccatc accgccgaca agagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt ccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac cacccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
acccagaaga gcctgagcct gtcccctggc aag 1353

<210> 61
<211> 451
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 61
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Gly Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Ala Thr Tyr Arg Gly His Ser Asp Thr Tyr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Ala Thr Leu Thr Ala Asp Thr Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Thr Arg Gly Ala Ile Tyr Asp Gly Tyr Asp Val Leu Asp Asn Trp Gly
            100   105   110
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
        115   120   125
Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala
    130   135   140
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
145   150   155   160
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
                165   170   175
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
            180   185   190
Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His
        195   200   205
Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys
    210   215   220

```
Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly
225                 230                 235                 240
Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met
                245                 250                 255
Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His
            260                 265                 270
Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val
        275                 280                 285
His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr
    290                 295                 300
Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly
305                 310                 315                 320
Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile
                325                 330                 335
Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val
            340                 345                 350
Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser
        355                 360                 365
Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu
    370                 375                 380
Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro
385                 390                 395                 400
Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val
                405                 410                 415
Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met
            420                 425                 430
His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser
        435                 440                 445
Pro Gly Lys
    450
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<210> 62
<211> 1353
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 62

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caggtgcagc tggtccagag cggcgccgaa gtgaagaagc ccggcagctc cgtgaaagtg 60
agctgcaagg gcagcggcta caccttcacc aactactgga tgcactgggt gaggcaggcc 120
cccggacagg gcctggagtg gatcggcgcc acctacaggg gccacagcga cacctactac 180
aaccagaagt tcaagggccg ggcgaccctc accgccgaca cgagcaccag caccgcctac 240
atggaactga gcagcctcag gagcgaggac accgctgtgt attactgcac caggggcgcc 300
atctacgacg gctacgacgt gctggacaac tggggccagg gcacactagt gaccgtgtcc 360
agcgccagca ccaagggccc cagcgtgttc cccctggccc ccagcagcaa gagcaccagc 420
ggcggcacag ccgccctggg ctgcctggtg aaggactact tccccgaacc ggtgaccgtg 480
tcctggaaca gcggagccct gaccagcggc gtgcacacct tccccgccgt gctgcagagc 540
agcggcctgt acagcctgag cagcgtggtg accgtgccca gcagcagcct gggcacccag 600
acctacatct gtaacgtgaa ccacaagccc agcaacacca aggtggacaa gaaggtggag 660
cccaagagct gtgacaagac ccacacctgc ccccccctgcc ctgccccga gctgctggga 720
ggccccagcg tgttcctgtt cccccccaag cctaaggaca ccctgatgat cagcagaacc 780
cccgaggtga cctgtgtggt ggtggatgtg agccacgagg accctgaggt gaagttcaac 840
tggtacgtgg acggcgtgga ggtgcacaat gccaagacca agcccaggga ggagcagtac 900
aacagcacct accgggtggt gtccgtgctg accgtgctgc accaggattg gctgaacggc 960
aaggagtaca agtgtaaggt gtccaacaag gccctgcctg cccctatcga gaaaaccatc 1020
agcaaggcca agggccagcc cagagagccc caggtgtaca ccctgccccc tagcagagat 1080
gagctgacca agaaccaggt gtccctgacc tgcctggtga agggcttcta ccccagcgac 1140
atcgccgtgg agtgggagag caacggccag cccgagaaca actacaagac caccccccct 1200
gtgctggaca gcgatggcag cttcttcctg tacagcaagc tgaccgtgga caagagcaga 1260
tggcagcagg gcaacgtgtt cagctgctcc gtgatgcacg aggccctgca caatcactac 1320
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acccagaaga gcctgagcct gtcccctggc aag 1353

<210> 63
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 63
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Tyr Thr Ser Asn Leu His 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 Tyr Arg Lys Leu Pro Trp
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
            100   105   110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115   120   125
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130   135   140
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145   150   155   160
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165   170   175
Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180   185   190
Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195   200   205
Phe Asn Arg Gly Glu Cys
    210

<210> 64
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 64
gacatccaga tgacccagag ccctagctca ctgagcgcca gcgtgggcga cagggtgacc 60
attacctgct ccgccagcca ggacatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ccaagctgct gatctactac acctccaacc tgcactccgg cgtgcccagc 180
aggttcagcg gaagcggcag cggcaccgat ttcaccctga ccatctccag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcag tacaggaagc tcccctggac tttcggccag 300
ggcaccaaac tggagatcaa gcgtacggtg gccgccccca gcgtgttcat cttcccccccc 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600
ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc 642

<210> 65

<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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

<210> 66
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 66
gacatccaga tgacccagag ccctagctca ctgagcgcca gcgtgggcga cagggtgacc 60
attacctgct ccgccagcca ggacatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ccaagctgct gatctactac acctccaacc tgcactccgg cgtgcccagc 180
aggttcagcg gaagcggcag cggcaccgat tacaccctga ccatctccag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcag tacaggaagc tcccctggac tttcggccag 300
ggcaccaaac tggagatcaa gcgtacggtg gccgccccca gcgtgttcat cttcccccc 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600
ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc   642

<210> 67
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 67
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Asp Ile Ser Asn Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Glu Leu Val Ile
        35   40   45
Tyr Tyr Thr Ser Asn Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65   70   75   80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Arg Lys Leu Pro Trp
                85   90   95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
            100   105   110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115   120   125
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130   135   140
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145   150   155   160
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165   170   175
Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
            180   185   190
Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195   200   205
Phe Asn Arg Gly Glu Cys
    210

<210> 68
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 68
gacatccagc tgacccagag ccctagctca ctgagcgcca gcgtgggcga cagggtgacc 60
attacctgct ccgccagcca ggacatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ccgagctggt gatctactac acctccaacc tgcactccgg cgtgcccagc 180
aggttcagcg gaagcggcag cggcaccgat tacaccctga ccatctccag cctgcagccc 240
gaggacttcg ccacctacta ctgccagcag tacaggaagc tcccctggac tttcggccag 300
ggcaccaaac tggagatcaa gcgtacggtg gccgccccca gcgtgttcat cttccccccc 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600
ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc   642

<210> 69
<211> 115
<212> PRT
<213> mus musculus

<400> 69
Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala

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


<210> 70
<211> 345
<212> DNA
<213> mus musculus

<400> 70
gaggtccagt tgcaacaatc tggacctgag ctggtgaagc ctggggcttc agtgaagata 60
tcctgtaagg cttctggata cacattcact gactactaca tgaagtgggt gaagcagagc 120
catggaaaga gccttgagtg gattggagag atttatccta ataatggtgg tattacctac 180
aaccagaagt tcaagggcaa ggccacattg actgtagaca agtcctccag cacagcctac 240
atggagctcc gcagcctgac atctgaggac tctgcagtct attactgtgc aaatggttac 300
gagtttgttt actggggcca agggactctg gtcactgtct ctgca                  345

<210> 71
<211> 108
<212> PRT
<213> mus musculus

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


<210> 72
<211> 324
<212> DNA
<213> mus musculus

<400> 72
gatatccaga tgacacagac tgcatcctcc ctgtctgcct ctctgggaga cagagtcacc 60
atcagttgca gtgcaagtca gggcattagc aattatttaa actggtatca gcagaaacca 120
gatggaactg ttaaactcct gatctattac acatcaagtt tacactcagg agtcccatca 180
aggttcagtg gcagtgggtc tgggacagat tattctctca ccatcagcaa cctggaacct 240
gaagatattg ccacttacta ttgtcagcag tatagtaagc ttccgtggac gttcggtgga 300
```

ggcaccaagc tggaaatcaa acgg 324

<210> 73
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 73
Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Ala Asn Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ala Ala Lys Thr Thr Ala Pro Ser Val Phe Pro Leu Ala Pro
        115   120   125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130   135   140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145   150   155   160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165   170   175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180   185   190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195   200   205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210   215   220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225   230   235   240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245   250   255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260   265   270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275   280   285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290   295   300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305   310   315   320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325   330   335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340   345   350
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355   360   365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370   375   380
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385   390   395   400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405   410   415

```
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 74
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 74

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gaggtccagt tgcaacaatc tggacctgag ctggtgaagc ctggggcttc agtgaagata 60
tcctgtaagg cttctggata cacattcact gactactaca tgaagtgggt gaagcagagc 120
catggaaaga gccttgagtg gattggagag atttatccta ataatggtgg tattacctac 180
aaccagaagt tcaagggcaa ggccacattg actgtagaca agtcctccag cacagcctac 240
atggagctcc gcagcctgac atctgaggac tctgcagtct attactgtgc aaatggttac 300
gagtttgttt actggggcca agggactctg gtcactgtct ctgcagccaa aacaacagcc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttccccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag                                                  1335
```

<210> 75
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 75

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

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


<210> 76
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 76
gatatccaga tgacacagac tgcatcctcc ctgtctgcct ctctgggaga cagagtcacc 60
atcagttgca gtgcaagtca gggcattagc aattatttaa actggtatca gcagaaacca 120
gatggaactg ttaaactcct gatctattac acatcaagtt tacactcagg agtcccatca 180
aggttcagtg gcagtgggtc tgggacagat tattctctca ccatcagcaa cctggaacct 240
gaagatattg ccacttacta ttgtcagcag tatagtaagc ttccgtggac gttcggtgga 300
ggcaccaagc tggagctgaa acgtacggtg gccgccccca gcgtgttcat cttccccccc 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600
ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc                    642

<210> 77
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 77
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Asp Tyr
            20                  25                  30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser
        115
```

<210> 78
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 78
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcgg caccttcagc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caggggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagc 345

<210> 79
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 79
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser
        115

<210> 80
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 80
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caggggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagc 345

<210> 81
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 81
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Asn Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser
        115

<210> 82
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 82
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caacggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagc   345

<210> 83
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 83
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Asn Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser

115

<210> 84
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 84
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gataggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggcgaccctc accgtcgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caacggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagc 345

<210> 85
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

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

<210> 86
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 86
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc cgacggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagc 345

<210> 87

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

<220>
<223> Humansed antibody sequence

<400> 87
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Asn Gly Tyr Glu Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser
        115

<210> 88
<211> 345
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 88
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gataggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggcgaccctc accgtcgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caacggctac 300
gagttcgact attggggcca gggcacacta gtgaccgtgt ccagc   345

<210> 89
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 89
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1   5   10   15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Gly Ile Ser Asn Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
        35   40   45
Tyr Tyr Thr Ser Ser Leu His 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 Tyr Ser Lys Leu Pro Trp
                85   90   95

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

<210> 90
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 90
gacatccaga tgacccagag cccctcaagc ctgagcgcca gcgtgggcga cagggtgact 60
atcacctgca gcgcctccca gggcatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ctaagctgct gatctactac accagcagcc tgcacagcgg cgtgcccagc 180
aggttctccg gcagcggcag cggaaccgac ttcaccctga ccattagcag cctccagccc 240
gaggacttcg ccacctacta ctgccagcag tacagcaagc tgccctggac cttcggccag 300
ggcaccaaac tggagatcaa gcgt 324

<210> 91
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 91
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Gly Ile Ser Asn Tyr
20 25 30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Tyr Thr Ser Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Lys Leu Pro Trp
85 90 95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
100 105

<210> 92
<211> 324
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 92
gacatccaga tgacccagag cccctcaagc ctgagcgcca gcgtgggcga cagggtgact 60
atcacctgca gcgcctccca gggcatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ctaagctgct gatctactac accagcagcc tgcacagcgg cgtgcccagc 180
aggttctccg gcagcggcag cggaaccgac tacaccctga ccattagcag cctccagccc 240
gaggacttcg ccacctacta ctgccagcag tacagcaagc tgccctggac cttcggccag 300
ggcaccaaac tggagatcaa gcgt 324

<210> 93
<211> 5

<212> PRT
<213> mus musculus

<400> 93
Asp Tyr Tyr Met Lys
 1   5

<210> 94
<211> 17
<212> PRT
<213> mus musculus

<400> 94
Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe Lys
 1   5   10   15
Gly

<210> 95
<211> 6
<212> PRT
<213> mus musculus

<400> 95
Gly Tyr Glu Phe Val Tyr
 1   5

<210> 96
<211> 11
<212> PRT
<213> mus musculus

<400> 96
Ser Ala Ser Gln Gly Ile Ser Asn Tyr Leu Asn
 1   5   10

<210> 97
<211> 7
<212> PRT
<213> mus musculus

<400> 97
Tyr Thr Ser Ser Leu His Ser
 1   5

<210> 98
<211> 9
<212> PRT
<213> mus musculus

<400> 98
Gln Gln Tyr Ser Lys Leu Pro Trp Thr
 1   5

<210> 99
<211> 6
<212> PRT

<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 99
Gly Tyr Glu Phe Asp Tyr
 1   5

<210> 100
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 100
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115   120   125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130   135   140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145   150   155   160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165   170   175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180   185   190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195   200   205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210   215   220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225   230   235   240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245   250   255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260   265   270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275   280   285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290   295   300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305   310   315   320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325   330   335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340   345   350

```
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 101
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 101

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caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcgg caccttcagc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caggggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagcgccag caccaagggc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttcccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag                                                  1335
```

<210> 102
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 102

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

```
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130                 135                 140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145                 150                 155                 160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165                 170                 175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180                 185                 190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195                 200                 205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210                 215                 220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225                 230                 235                 240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260                 265                 270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290                 295                 300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 103
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 103
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180

```
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caggggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagcgccag caccaagggc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttcccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag                                                  1335

<210> 104
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 104
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35                  40                  45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Asn Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130                 135                 140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145                 150                 155                 160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165                 170                 175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180                 185                 190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195                 200                 205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210                 215                 220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225                 230                 235                 240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
```

```
            260                 265                 270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290                 295                 300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 105
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 105
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caacggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagcgccag caccaagggc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttcccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag   1335

<210> 106
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 106
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Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Asn Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130                 135                 140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145                 150                 155                 160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165                 170                 175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180                 185                 190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195                 200                 205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210                 215                 220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225                 230                 235                 240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260                 265                 270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290                 295                 300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 107

<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 107
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gataggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggcgaccctc accgtcgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caacggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagcgccag caccaagggc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttcccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag 1335

<210> 108
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 108
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1   5   10   15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
        35   40   45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85   90   95
Ala Asp Gly Tyr Glu Phe Val Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100   105   110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115   120   125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130   135   140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145   150   155   160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165   170   175

```
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180                 185                 190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195                 200                 205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210                 215                 220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225                 230                 235                 240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260                 265                 270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290                 295                 300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380
Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385                 390                 395                 400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
                405                 410                 415
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
            420                 425                 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 109
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 109

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caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gatgggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggtgaccatc accgccgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc cgacggctac 300
gagttcgtgt attggggcca gggcacacta gtgaccgtgt ccagcgccag caccaagggc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttccccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
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gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag 1335

<210> 110
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 110

```
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1               5                  10                  15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30
Tyr Met Lys Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
        35                  40                  45
Gly Glu Ile Tyr Pro Asn Asn Gly Gly Ile Thr Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Arg Ala Thr Leu Thr Val Asp Lys Ser Thr Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Asn Gly Tyr Glu Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr
            100                 105                 110
Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro
        115                 120                 125
Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val
    130                 135                 140
Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala
145                 150                 155                 160
Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly
                165                 170                 175
Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly
            180                 185                 190
Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys
        195                 200                 205
Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys
    210                 215                 220
Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu
225                 230                 235                 240
Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu
                245                 250                 255
Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys
            260                 265                 270
Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys
        275                 280                 285
Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu
    290                 295                 300
Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys
305                 310                 315                 320
Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys
                325                 330                 335
Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser
            340                 345                 350
Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys
        355                 360                 365
Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln
    370                 375                 380
```

Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly
385 390 395 400
Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln
405 410 415
Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn
420 425 430
His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
435 440 445

<210> 111
<211> 1335
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 111
caggtgcagc tggtgcagag cggcgccgaa gtgaagaagc ccggctccag cgtgaaggtg 60
agctgcaagg ctagcggcta caccttcacc gactactaca tgaagtgggt gaggcaggcc 120
cccggccagg gactggagtg gataggcgag atctacccca acaacggggg catcacctac 180
aaccagaagt tcaagggcag ggcgaccctc accgtcgaca aaagcaccag caccgcctac 240
atggaactga gcagcctgag gagcgaggac accgccgtgt actactgcgc caacggctac 300
gagttcgact attggggcca gggcacacta gtgaccgtgt ccagcgccag caccaagggc 360
cccagcgtgt tccccctggc ccccagcagc aagagcacca gcggcggcac agccgccctg 420
ggctgcctgg tgaaggacta cttccccgaa ccggtgaccg tgtcctggaa cagcggagcc 480
ctgaccagcg gcgtgcacac cttccccgcc gtgctgcaga gcagcggcct gtacagcctg 540
agcagcgtgg tgaccgtgcc cagcagcagc ctgggcaccc agacctacat ctgtaacgtg 600
aaccacaagc ccagcaacac caaggtggac aagaaggtgg agcccaagag ctgtgacaag 660
acccacacct gccccccctg ccctgccccc gagctgctgg gaggccccag cgtgttcctg 720
ttcccccca agcctaagga caccctgatg atcagcagaa cccccgaggt gacctgtgtg 780
gtggtggatg tgagccacga ggaccctgag gtgaagttca actggtacgt ggacggcgtg 840
gaggtgcaca atgccaagac caagcccagg gaggagcagt acaacagcac ctaccgggtg 900
gtgtccgtgc tgaccgtgct gcaccaggat tggctgaacg gcaaggagta caagtgtaag 960
gtgtccaaca aggccctgcc tgcccctatc gagaaaacca tcagcaaggc caagggccag 1020
cccagagagc cccaggtgta caccctgccc cctagcagag atgagctgac caagaaccag 1080
gtgtccctga cctgcctggt gaagggcttc taccccagcg acatcgccgt ggagtgggag 1140
agcaacggcc agcccgagaa caactacaag accacccccc ctgtgctgga cagcgatggc 1200
agcttcttcc tgtacagcaa gctgaccgtg gacaagagca gatggcagca gggcaacgtg 1260
ttcagctgct ccgtgatgca cgaggccctg cacaatcact acacccagaa gagcctgagc 1320
ctgtcccctg gcaag 1335

<210> 112
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 112
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Gly Ile Ser Asn Tyr
20 25 30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Tyr Thr Ser Ser Leu His 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 Tyr Ser Lys Leu Pro Trp

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

<210> 113
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 113
gacatccaga tgacccagag cccctcaagc ctgagcgcca gcgtgggcga cagggtgact 60
atcacctgca gcgcctccca gggcatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ctaagctgct gatctactac accagcagcc tgcacagcgg cgtgcccagc 180
aggttctccg gcagcggcag cggaaccgac ttcaccctga ccattagcag cctccagccc 240
gaggacttcg ccacctacta ctgccagcag tacagcaagc tgccctggac cttcggccag 300
ggcaccaaac tggagatcaa gcgtacggtg gccgccccca gcgtgttcat cttcccccc 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600
ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc 642

<210> 114
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 114
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15
Asp Arg Val Thr Ile Thr Cys Ser Ala Ser Gln Gly Ile Ser Asn Tyr
20 25 30
Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45
Tyr Tyr Thr Ser Ser Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80
Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Tyr Ser Lys Leu Pro Trp
85 90 95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
100 105 110

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

<210> 115
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Humansed antibody sequence

<400> 115
```
gacatccaga tgacccagag cccctcaagc ctgagcgcca gcgtgggcga cagggtgact 60
atcacctgca gcgcctccca gggcatcagc aactacctga actggtacca gcagaagccc 120
ggcaaggccc ctaagctgct gatctactac accagcagcc tgcacagcgg cgtgcccagc 180
aggttctccg gcagcggcag cggaaccgac tacaccctga ccattagcag cctccagccc 240
gaggacttcg ccacctacta ctgccagcag tacagcaagc tgccctggac cttcggccag 300
ggcaccaaac tggagatcaa gcgtacggtg gccgccccca gcgtgttcat cttcccccca 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600
ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc                    642
```

<210> 116
<211> 118
<212> PRT
<213> mus musculus

<400> 116
```
Glu Val Gln Leu Gln Gln Ser Gly Pro Val Leu Val Lys Pro Gly Ala
 1               5                  10                  15
Ser Val Lys Met Ser Cys Glu Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30
Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Thr Leu Glu Trp Ile
        35                  40                  45
Gly Val Ile Asn Pro Tyr Asn Gly Gly Thr Asp Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95
Ala Arg Ser Val Tyr Asp Tyr Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110
Leu Val Thr Val Ser Ser
        115
```

<210> 117
<211> 354

<212> DNA
<213> mus musculus

<400> 117
gaggtgcagc tgcagcagag cggccccgtg ctggtgaagc ctggagccag cgtgaaaatg 60
agctgcgaag ccagcggcta caccttcacc gactactaca tgaactgggt gaagcagagc 120
cacggcaaga ccctggagtg gatcggcgtg atcaacccct acaacggggg caccgactac 180
aaccagaagt tcaagggcaa ggccactctg accgtggaca agagctccag caccgcctac 240
atggaactga acagcctcac ctctgaggac agcgccgtct attactgcgc caggagcgtg 300
tacgactacc ccttcgacta ctggggccag ggcacactag tgaccgtgtc cagc 354

<210> 118
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 118
Glu Val Gln Leu Gln Gln Ser Gly Pro Val Leu Val Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Met Ser Cys Glu Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Tyr Met Asn Trp Val Lys Gln Ser His Gly Lys Thr Leu Glu Trp Ile
        35   40   45
Gly Val Ile Asn Pro Tyr Asn Gly Gly Thr Asp Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Ser Val Tyr Asp Tyr Pro Phe Asp Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115   120   125
Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130   135   140
Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145   150   155   160
Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165   170   175
Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180   185   190
Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195   200   205
Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210   215   220
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225   230   235   240
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245   250   255
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260   265   270
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275   280   285
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290   295   300
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305   310   315   320
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
                325   330   335
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu

```
            340                 345                 350
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210> 119
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 119
gaggtgcagc tgcagcagag cggccccgtg ctggtgaagc ctggagccag cgtgaaaatg 60
agctgcgaag ccagcggcta caccttcacc gactactaca tgaactgggt gaagcagagc 120
cacggcaaga ccctggagtg gatcggcgtg atcaacccct acaacggggg caccgactac 180
aaccagaagt tcaagggcaa ggccactctg accgtggaca agagctccag caccgcctac 240
atggaactga acagcctcac ctctgaggac agcgccgtct attactgcgc caggagcgtg 300
tacgactacc ccttcgacta ctggggccag ggcacactag tgaccgtgtc cagcgccagc 360
accaagggcc ccagcgtgtt ccccctggcc cccagcagca agagcaccag cggcggcaca 420
gccgccctgg gctgcctggt gaaggactac ttccccgaac cggtgaccgt gtcctggaac 480
agcggagccc tgaccagcgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg 540
tacagcctga gcagcgtggt gaccgtgccc agcagcagcc tgggcaccca gacctacatc 600
tgtaacgtga accacaagcc cagcaacacc aaggtggaca agaaggtgga gcccaagagc 660
tgtgacaaga cccacacctg ccccccctgc cctgccccg agctgctggg aggccccagc 720
gtgttcctgt tcccccccaa gcctaaggac accctgatga tcagcagaac ccccgaggtg 780
acctgtgtgg tggtggatgt gagccacgag gaccctgagg tgaagttcaa ctggtacgtg 840
gacggcgtgg aggtgcacaa tgccaagacc aagcccaggg aggagcagta caacagcacc 900
taccgggtgg tgtccgtgct gaccgtgctg caccaggatt ggctgaacgg caaggagtac 960
aagtgtaagg tgtccaacaa ggccctgcct gcccctatcg agaaaaccat cagcaaggcc 1020
aagggccagc ccagagagcc ccaggtgtac accctgcccc ctagcagaga tgagctgacc 1080
aagaaccagg tgtccctgac ctgcctggtg aagggcttct accccagcga catcgccgtg 1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccacccccc tgtgctggac 1200
agcgatggca gcttcttcct gtacagcaag ctgaccgtgg acaagagcag atggcagcag 1260
ggcaacgtgt tcagctgctc cgtgatgcac gaggccctgc acaatcacta cacccagaag 1320
agcctgagcc tgtcccctgg caag                                       1344

<210> 120
<211> 111
<212> PRT
<213> mus musculus

<400> 120
Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
 1               5                  10                  15
Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Ser Ile His
            20                  25                  30
Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
        35                  40                  45
Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
    50                  55                  60
Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr Leu Asn Ile His
```

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

<210> 121
<211> 336
<212> DNA
<213> mus musculus

<400> 121
gacatcgtcc tgacccagag ccccgccagc ctggccgtga gcctgggcca gagggccaca 60
atcagctgca gggcctctga gtccgtgagc atccacggca cccacctgat gcactggtat 120
cagcagaagc ccggccagcc tcccaagctg ctgatctacg ccgccagcaa cctggagagc 180
ggcgtgcccg ctaggttcag cggaagcggc agcgagaccg acttcaccct gaacatccac 240
cccgtggagg aggaagacgc cgccacctac ttctgccagc agagcatcga ggaccccagg 300
accttcggcg ggggcaccaa gctcgagatt aagcgt 336

<210> 122
<211> 237
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 122
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15
Val His Ser Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val
20 25 30
Ser Leu Gly Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val
35 40 45
Ser Ile His Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly
50 55 60
Gln Pro Pro Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly
65 70 75 80
Val Pro Ala Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr Leu
85 90 95
Asn Ile His Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Phe Cys Gln
100 105 110
Gln Ser Ile Glu Asp Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu
115 120 125
Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser
130 135 140
Asp Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn
145 150 155 160
Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala
165 170 175
Leu Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys
180 185 190
Asp Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp
195 200 205
Tyr Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu
210 215 220
Ser Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230 235

<210> 123
<211> 711

<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 123
atgggctggt cctgcatcat cctgtttctg gtggccaccg ccaccggcgt gcacagcgac 60
atcgtcctga cccagagccc cgccagcctg gccgtgagcc tgggccagag ggccacaatc 120
agctgcaggg cctctgagtc cgtgagcatc cacggcaccc acctgatgca ctggtatcag 180
cagaagcccg gccagcctcc caagctgctg atctacgccg ccagcaacct ggagagcggc 240
gtgcccgcta ggttcagcgg aagcggcagc gagaccgact tcaccctgaa catccacccc 300
gtggaggagg aagacgccgc cacctacttc tgccagcaga gcatcgagga ccccaggacc 360
ttcggcgggg gcaccaagct cgagattaag cgtacggtgg ccgcccccag cgtgttcatc 420
ttcccccca gcgatgagca gctgaagagc ggcaccgcca gcgtggtgtg tctgctgaac 480
aacttctacc cccgggaggc caaggtgcag tggaaggtgg acaatgccct gcagagcggc 540
aacagccagg agagcgtgac cgagcaggac agcaaggact ccacctacag cctgagcagc 600
accctgaccc tgagcaaggc cgactacgag aagcacaagg tgtacgcctg tgaggtgacc 660
caccagggcc tgtccagccc cgtgaccaag agcttcaacc ggggcgagtg c   711

<210> 124
<211> 119
<212> PRT
<213> mus musculus

<400> 124
Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Thr
 1   5   10   15
Ser Val Lys Ile Pro Cys Lys Thr Ser Gly Tyr Ile Phe Thr Asp Tyr
            20   25   30
Ser Ile Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
        35   40   45
Gly Asp Ile Asp Pro Asn Tyr Gly Asp Pro Ile Tyr Asn His Lys Phe
    50   55   60
Lys Gly Lys Ala Thr Leu Thr Val Asp Arg Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85   90   95
Ala Arg Arg Ala Thr Gly Thr Asp Trp Phe Ala Phe Trp Gly Gln Gly
            100   105   110
Thr Leu Val Thr Val Ser Ser
        115

<210> 125
<211> 357
<212> DNA
<213> mus musculus

<400> 125
gaggtgcagc tgcagcagag cggccccgag ctggtgaaac ccggcaccag cgtgaagatc 60
ccctgcaaga cctctggcta catcttcacc gactacagca tcgactgggt gaagcagagc 120
cacggcaagt ctctggagtg gattggggac atcgacccca actacggcga ccccatctac 180
aaccacaagt tcaagggcaa ggccaccctg accgtggaca ggagcagcag caccgcctac 240
atggaactca ggagcctgac cagcgaggac accgccgtgt atttttgcgc caggagggcc 300
accggcactg attggttcgc cttctggggc cagggcacac tagtgaccgt gtccagc   357

<210> 126
<211> 449
<212> PRT
<213> Artificial Sequence

<220>

<223> Chimeric antibody sequence

<400> 126

```
Glu Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Thr
 1               5                  10                  15
Ser Val Lys Ile Pro Cys Lys Thr Ser Gly Tyr Ile Phe Thr Asp Tyr
            20                  25                  30
Ser Ile Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
        35                  40                  45
Gly Asp Ile Asp Pro Asn Tyr Gly Asp Pro Ile Tyr Asn His Lys Phe
    50                  55                  60
Lys Gly Lys Ala Thr Leu Thr Val Asp Arg Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
                85                  90                  95
Ala Arg Arg Ala Thr Gly Thr Asp Trp Phe Ala Phe Trp Gly Gln Gly
            100                 105                 110
Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
        115                 120                 125
Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
    130                 135                 140
Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
145                 150                 155                 160
Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
                165                 170                 175
Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
            180                 185                 190
Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
        195                 200                 205
Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
    210                 215                 220
Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
225                 230                 235                 240
Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
                245                 250                 255
Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
            260                 265                 270
Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
        275                 280                 285
Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
    290                 295                 300
Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
305                 310                 315                 320
Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
                325                 330                 335
Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
            340                 345                 350
Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
        355                 360                 365
Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
    370                 375                 380
Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
385                 390                 395                 400
Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
                405                 410                 415
Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
            420                 425                 430
Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
        435                 440                 445
Lys
```

<210> 127
<211> 1347
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 127
gaggtgcagc tgcagcagag cggccccgag ctggtgaaac ccggcaccag cgtgaagatc 60
ccctgcaaga cctctggcta catcttcacc gactacagca tcgactgggt gaagcagagc 120
cacggcaagt ctctggagtg gattggggac atcgacccca actacggcga ccccatctac 180
aaccacaagt tcaagggcaa ggccaccctg accgtggaca ggagcagcag caccgcctac 240
atggaactca ggagcctgac cagcgaggac accgccgtgt atttttgcgc caggagggcc 300
accggcactg attggttcgc cttctggggc cagggcacac tagtgaccgt gtccagcgcc 360
agcaccaagg gccccagcgt gttccccctg gcccccagca gcaagagcac cagcggcggc 420
acagccgccc tgggctgcct ggtgaaggac tacttccccg aaccggtgac cgtgtcctgg 480
aacagcggag ccctgaccag cggcgtgcac accttccccg ccgtgctgca gagcagcggc 540
ctgtacagcc tgagcagcgt ggtgaccgtg cccagcagca gcctgggcac ccagacctac 600
atctgtaacg tgaaccacaa gcccagcaac accaaggtgg acaagaaggt ggagcccaag 660
agctgtgaca agacccacac ctgccccccc tgccctgccc ccgagctgct gggaggcccc 720
agcgtgttcc tgttcccccc caagcctaag gacaccctga tgatcagcag aacccccgag 780
gtgacctgtg tggtggtgga tgtgagccac gaggaccctg aggtgaagtt caactggtac 840
gtggacggcg tggaggtgca caatgccaag accaagccca gggaggagca gtacaacagc 900
acctaccggg tggtgtccgt gctgaccgtg ctgcaccagg attggctgaa cggcaaggag 960
tacaagtgta aggtgtccaa caaggccctg cctgccccta tcgagaaaac catcagcaag 1020
gccaagggcc agcccagaga gccccaggtg tacaccctgc cccctagcag agatgagctg 1080
accaagaacc aggtgtccct gacctgcctg gtgaagggct tctaccccag cgacatcgcc 1140
gtggagtggg agagcaacgg ccagcccgag aacaactaca agaccacccc ccctgtgctg 1200
gacagcgatg gcagcttctt cctgtacagc aagctgaccg tggacaagag cagatggcag 1260
cagggcaacg tgttcagctg ctccgtgatg cacgaggccc tgcacaatca ctacacccag 1320
aagagcctga gcctgtcccc tggcaag 1347

<210> 128
<211> 108
<212> PRT
<213> mus musculus

<400> 128
Asp Ile Gln Met Thr Gln Ser Pro Ala Ser Leu Ser Val Ser Val Gly
 1   5   10   15
Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Glu Asn Ile Tyr Asn Asn
            20   25   30
Leu Ala Trp Tyr Gln Gln Lys Gln Gly Lys Ser Pro Gln Leu Leu Val
        35   40   45
Tyr Ala Ala Thr Ile Leu Ala Asp Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Gln Tyr Ser Leu Lys Ile Asn Ser Leu Gln Ser
65   70   75   80
Gly Asp Phe Gly Thr Tyr Tyr Cys Gln His Phe Trp Gly Thr Pro Leu
                85   90   95
Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
            100   105

<210> 129
<211> 324
<212> DNA
<213> mus musculus

<400> 129
gacatccaga tgacccagag ccccgctagc ctcagcgtgt ccgtcggcga gaccgtgacc 60
atcacctgca gggccagcga gaacatctac aacaacctgg cctggtatca gcagaagcag 120

ggcaaaagcc cccagctgct ggtgtacgcc gccaccattc tggccgacgg cgtgcccagc 180
aggttctctg gaagcggcag cggcacccag tacagcctga agatcaacag cctgcagagc 240
ggggacttcg gcacctacta ctgccagcac ttctggggca ctcccctgac cttcggagcc 300
ggcaccaagc tggagctgaa gcgt 324

<210> 130
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

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

<210> 131
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 131
gacatccaga tgacccagag ccccgctagc ctcagcgtgt ccgtcggcga gaccgtgacc 60
atcacctgca gggccagcga gaacatctac aacaacctgg cctggtatca gcagaagcag 120
ggcaaaagcc cccagctgct ggtgtacgcc gccaccattc tggccgacgg cgtgcccagc 180
aggttctctg gaagcggcag cggcacccag tacagcctga agatcaacag cctgcagagc 240
ggggacttcg gcacctacta ctgccagcac ttctggggca ctcccctgac cttcggagcc 300
ggcaccaagc tggagctgaa gcgtacggtg gccgccccca gcgtgttcat cttcccccca 360
agcgatgagc agctgaagag cggcaccgcc agcgtggtgt gtctgctgaa caacttctac 420
ccccgggagg ccaaggtgca gtggaaggtg gacaatgccc tgcagagcgg caacagccag 480
gagagcgtga ccgagcagga cagcaaggac tccacctaca gcctgagcag caccctgacc 540
ctgagcaagg ccgactacga gaagcacaag gtgtacgcct gtgaggtgac ccaccagggc 600

ctgtccagcc ccgtgaccaa gagcttcaac cggggcgagt gc 642

<210> 132
<211> 118
<212> PRT
<213> mus musculus

<400> 132
Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Ile Ile His Pro Asn Ser Gly Ser Thr Asn Tyr Asn Glu Lys Phe
    50   55   60
Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Ile Tyr Asp Tyr Pro Phe Ala Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser
        115

<210> 133
<211> 354
<212> DNA
<213> mus musculus

<400> 133
caggtgcagc tccagcagcc cggagccgaa ctggtgaagc ccggagccag cgtcaaactg 60
tcctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaagcagagg 120
cccggccagg gcctggagtg gatcggcatc atccacccca acagcgggag caccaactac 180
aacgagaagt tcaagagcaa ggccaccctg accgtggaca agagcagcag cactgcctac 240
atgcagctga gcagcctgac cagcgaggac agcgctgtgt actactgcgc caggggcatc 300
tacgactacc ccttcgccta ttggggccag ggcacactag tgaccgtgtc cagc 354

<210> 134
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 134
Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
            20   25   30
Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Ile Ile His Pro Asn Ser Gly Ser Thr Asn Tyr Asn Glu Lys Phe
    50   55   60
Lys Ser Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gly Ile Tyr Asp Tyr Pro Phe Ala Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro

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        115                 120                 125
Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140
Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160
Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175
Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190
Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205
Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225                 230                 235                 240
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
                325                 330                 335
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 135
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 135

```
caggtgcagc tccagcagcc cggagccgaa ctggtgaagc ccggagccag cgtcaaactg 60
tcctgcaagg ccagcggcta caccttcacc aactactgga tgcactgggt gaagcagagg 120
cccggccagg gcctggagtg gatcggcatc atccacccca acagcgggag caccaactac 180
aacgagaagt tcaagagcaa ggccaccctg accgtggaca agagcagcag cactgcctac 240
atgcagctga gcagcctgac cagcgaggac agcgctgtgt actactgcgc caggggcatc 300
tacgactacc ccttcgccta ttggggccag ggcacactag tgaccgtgtc cagcgccagc 360
accaagggcc ccagcgtgtt ccccctggcc cccagcagca agagcaccag cggcggcaca 420
gccgccctgg gctgcctggt gaaggactac ttccccgaac cggtgaccgt gtcctggaac 480
agcggagccc tgaccagcgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg 540
tacagcctga gcagcgtggt gaccgtgccc agcagcagcc tgggcaccca gacctacatc 600
tgtaacgtga accacaagcc cagcaacacc aaggtggaca agaaggtgga gcccaagagc 660
```

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tgtgacaaga cccacacctg ccccccctgc cctgcccccg agctgctggg aggccccagc 720
gtgttcctgt tccccccaa gcctaaggac accctgatga tcagcagaac ccccgaggtg 780
acctgtgtgg tggtggatgt gagccacgag gaccctgagg tgaagttcaa ctggtacgtg 840
gacggcgtgg aggtgcacaa tgccaagacc aagcccaggg aggagcagta caacagcacc 900
taccgggtgg tgtccgtgct gaccgtgctg caccaggatt ggctgaacgg caaggagtac 960
aagtgtaagg tgtccaacaa ggccctgcct gcccctatcg agaaaaccat cagcaaggcc 1020
aagggccagc ccagagagcc ccaggtgtac accctgcccc ctagcagaga tgagctgacc 1080
aagaaccagg tgtccctgac ctgcctggtg aagggcttct accccagcga catcgccgtg 1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccacccccc tgtgctggac 1200
agcgatggca gcttcttcct gtacagcaag ctgaccgtgg acaagagcag atggcagcag 1260
ggcaacgtgt tcagctgctc cgtgatgcac gaggccctgc acaatcacta cacccagaag 1320
agcctgagcc tgtcccctgg caag                                       1344
```

<210> 136
<211> 112
<212> PRT
<213> mus musculus

<400> 136

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

<210> 137
<211> 336
<212> DNA
<213> mus musculus

<400> 137

```
gacatcgtgc tgacccagtc tcccgctagc ctggccgtgt ctctgggcca gagggccaca 60
atcagctgca gggccagcga gagcgtcagc attcacggca cccacctgat gcactggtac 120
cagcagaagc ccggccagcc tcccaagctc ctgatctacg ccgccagcaa cctggaaagc 180
ggagtgcccg ccaggttcag cggcagcggc tccgagaccg acttcaccct gaacatccac 240
cccgtggagg aggaggacgc cgccacctac ttctgccagc agagcatcga ggacccctac 300
accttcggcg gcggcaccaa gctggagatc aagcgt                           336
```

<210> 138
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 138

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

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


<210> 139
<211> 654
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 139
gacatcgtgc tgacccagtc tcccgctagc ctggccgtgt ctctgggcca gagggccaca 60
atcagctgca gggccagcga gagcgtcagc attcacggca cccacctgat gcactggtac 120
cagcagaagc ccggccagcc tcccaagctc ctgatctacg ccgccagcaa cctggaaagc 180
ggagtgcccg ccaggttcag cggcagcggc tccgagaccg acttcaccct gaacatccac 240
cccgtggagg aggaggacgc cgccacctac ttctgccagc agagcatcga ggacccctac 300
accttcggcg gcggcaccaa gctggagatc aagcgtacgg tggccgcccc cagcgtgttc 360
atcttccccc ccagcgatga gcagctgaag agcggcaccg ccagcgtggt gtgtctgctg 420
aacaacttct acccccggga ggccaaggtg cagtggaagg tggacaatgc cctgcagagc 480
ggcaacagcc aggagagcgt gaccgagcag gacagcaagg actccaccta cagcctgagc 540
agcaccctga ccctgagcaa ggccgactac gagaagcaca aggtgtacgc ctgtgaggtg 600
acccaccagg gcctgtccag ccccgtgacc aagagcttca accggggcga gtgc       654

<210> 140
<211> 120
<212> PRT
<213> mus musculus

<400> 140
Glu Val Lys Leu Leu Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1               5                  10                  15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Ile Asp Phe Ser Arg Tyr
            20                  25                  30
Trp Met Ser Trp Val Arg Arg Ala Pro Gly Lys Gly Leu Glu Trp Ile
        35                  40                  45
Gly Glu Ile Asn Pro Asp Arg Ser Thr Ile Asn Tyr Ala Pro Ser Leu
    50                  55                  60
Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65                  70                  75                  80
Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
                85                  90                  95
```

Ala Val Phe Tyr Tyr Asp Tyr Glu Gly Ala Met Asp Tyr Trp Gly Gln
100 105 110
Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 141
<211> 360
<212> DNA
<213> mus musculus

<400> 141
gaggtgaagc ttctccagtc tggaggtggc ctggtgcagc ctggaggatc cctgaaactc 60
tcctgtgcag cctcaggaat cgattttagt agatactgga tgagttgggt tcggcgggct 120
ccagggaaag gactagaatg gattggagaa attaatccag ataggagtac aatcaactat 180
gcaccatctc taaaggataa attcatcatc tccagagaca acgccaaaaa tacgctgtac 240
ctgcaaatga gcaaagtgag atctgaggac acagcccttt attactgtgc agttttctac 300
tatgattacg agggtgctat ggactactgg ggtcaaggaa cctcagtcac cgtctcctca 360

<210> 142
<211> 450
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 142
Glu Val Lys Leu Leu Gln Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Ile Asp Phe Ser Arg Tyr
20 25 30
Trp Met Ser Trp Val Arg Arg Ala Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45
Gly Glu Ile Asn Pro Asp Arg Ser Thr Ile Asn Tyr Ala Pro Ser Leu
50 55 60
Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys
85 90 95
Ala Val Phe Tyr Tyr Asp Tyr Glu Gly Ala Met Asp Tyr Trp Gly Gln
100 105 110
Gly Thr Ser Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val
115 120 125
Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala
130 135 140
Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser
145 150 155 160
Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val
165 170 175
Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro
180 185 190
Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys
195 200 205
Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp
210 215 220
Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly
225 230 235 240
Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile
245 250 255
Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu
260 265 270

Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His
275 280 285
Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg
290 295 300
Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys
305 310 315 320
Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu
325 330 335
Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr
340 345 350
Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu
355 360 365
Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp
370 375 380
Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val
385 390 395 400
Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp
405 410 415
Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His
420 425 430
Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro
435 440 445
Gly Lys
450

<210> 143
<211> 1350
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 143
gaggtgaagc ttctccagtc tggaggtggc ctggtgcagc ctggaggatc cctgaaactc 60
tcctgtgcag cctcaggaat cgattttagt agatactgga tgagttgggt tcggcgggct 120
ccagggaaag gactagaatg gattggagaa attaatccag ataggagtac aatcaactat 180
gcaccatctc taaaggataa attcatcatc tccagagaca acgccaaaaa tacgctgtac 240
ctgcaaatga gcaaagtgag atctgaggac acagcccttt attactgtgc agttttctac 300
tatgattacg agggtgctat ggactactgg ggtcaaggaa cctcagtcac cgtctcctca 360
gccaaaacaa cagcccccag cgtgttcccc ctggccccca gcagcaagag caccagcggc 420
ggcacagccg ccctgggctg cctggtgaag gactacttcc ccgaaccggt gaccgtgtcc 480
tggaacagcg gagccctgac cagcggcgtg cacaccttcc ccgccgtgct gcagagcagc 540
ggcctgtaca gcctgagcag cgtggtgacc gtgcccagca gcagcctggg cacccagacc 600
tacatctgta acgtgaacca caagcccagc aacaccaagg tggacaagaa ggtggagccc 660
aagagctgtg acaagaccca cacctgcccc ccctgccctg cccccgagct gctgggaggc 720
cccagcgtgt tcctgttccc ccccaagcct aaggacaccc tgatgatcag cagaaccccc 780
gaggtgacct gtgtggtggt ggatgtgagc cacgaggacc ctgaggtgaa gttcaactgg 840
tacgtggacg gcgtggaggt gcacaatgcc aagaccaagc ccagggagga gcagtacaac 900
agcacctacc gggtggtgtc cgtgctgacc gtgctgcacc aggattggct gaacggcaag 960
gagtacaagt gtaaggtgtc caacaaggcc ctgcctgccc ctatcgagaa aaccatcagc 1020
aaggccaagg gccagcccag agagccccag gtgtacaccc tgcccctag cagagatgag 1080
ctgaccaaga accaggtgtc cctgacctgc ctggtgaagg gcttctaccc cagcgacatc 1140
gccgtggagt gggagagcaa cggccagccc gagaacaact acaagaccac ccccctgtg 1200
ctggacagcg atggcagctt cttcctgtac agcaagctga ccgtggacaa gagcagatgg 1260
cagcagggca acgtgttcag ctgctccgtg atgcacgagg ccctgcacaa tcactacacc 1320
cagaagagcc tgagcctgtc ccctggcaag 1350

<210> 144
<211> 108
<212> PRT
<213> mus musculus

<400> 144
Asp Ile Val Met Thr Gln Ser Gln 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 Asp Thr Asn
            20   25   30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile
        35   40   45
Tyr Ser Ala Ser Tyr Arg Phe Ser Gly Val Pro Asp Arg Phe Thr Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser
65   70   75   80
Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Phe Pro Phe
                85   90   95
Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg
            100   105

<210> 145
<211> 324
<212> DNA
<213> mus musculus

<400> 145
gacattgtga tgacccagtc tcaaaaattc atgtccacat cagtaggaga cagggtcagc 60
gtcacctgca aggccagtca gaatgtggat actaatgtag cctggtatca acaaaaacca 120
gggcaatctc ctaaagcact gatttactcg gcatcctacc ggttcagtgg agtccctgat 180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcagcaa tgtgcagtct 240
gaagacttgg cagagtattt ctgtcagcaa tataacagct ttccattcac gttcggctcg 300
gggacaaagt tggaaataaa acgt   324

<210> 146
<211> 214
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 146
Asp Ile Val Met Thr Gln Ser Gln 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 Asp Thr Asn
            20   25   30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile
        35   40   45
Tyr Ser Ala Ser Tyr Arg Phe Ser Gly Val Pro Asp Arg Phe Thr Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser
65   70   75   80
Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Phe Pro Phe
                85   90   95
Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala
            100   105   110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
        115   120   125
Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
    130   135   140
Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
145   150   155   160
Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
                165   170   175
Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr

```
            180                 185                 190
Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
        195                 200                 205
Phe Asn Arg Gly Glu Cys
    210


<210> 147
<211> 642
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 147
Gly Ala Cys Ala Thr Thr Gly Thr Gly Ala Thr Gly Ala Cys Cys Cys
 1               5                  10                  15
Ala Gly Thr Cys Thr Cys Ala Ala Ala Ala Ala Thr Thr Cys Ala Thr
            20                  25                  30
Gly Thr Cys Cys Ala Cys Ala Thr Cys Ala Gly Thr Ala Gly Gly Ala
        35                  40                  45
Gly Ala Cys Ala Gly Gly Gly Thr Cys Ala Gly Cys Gly Thr Cys Ala
    50                  55                  60
Cys Cys Thr Gly Cys Ala Ala Gly Gly Cys Cys Ala Gly Thr Cys Ala
65                  70                  75                  80
Gly Ala Ala Thr Gly Thr Gly Gly Ala Thr Ala Cys Thr Ala Ala Thr
                85                  90                  95
Gly Thr Ala Gly Cys Cys Thr Gly Gly Thr Ala Thr Cys Ala Ala Cys
            100                 105                 110
Ala Ala Ala Ala Ala Cys Cys Ala Gly Gly Gly Cys Ala Ala Thr Cys
        115                 120                 125
Thr Cys Cys Thr Ala Ala Ala Gly Cys Ala Cys Thr Gly Ala Thr Thr
    130                 135                 140
Thr Ala Cys Thr Cys Gly Gly Cys Ala Thr Cys Cys Thr Ala Cys Cys
145                 150                 155                 160
Gly Gly Thr Thr Cys Ala Gly Thr Gly Gly Ala Gly Thr Cys Cys Cys
                165                 170                 175
Thr Gly Ala Thr Cys Gly Cys Thr Thr Cys Ala Cys Ala Gly Gly Cys
            180                 185                 190
Ala Gly Thr Gly Gly Ala Thr Cys Thr Gly Gly Gly Ala Cys Ala Gly
        195                 200                 205
Ala Thr Thr Thr Cys Ala Cys Thr Cys Thr Cys Ala Cys Cys Ala Thr
    210                 215                 220
Cys Ala Gly Cys Ala Ala Thr Gly Thr Gly Cys Ala Gly Thr Cys Thr
225                 230                 235                 240
Gly Ala Ala Gly Ala Cys Thr Thr Gly Gly Cys Ala Gly Ala Gly Thr
                245                 250                 255
Ala Thr Thr Thr Cys Thr Gly Thr Cys Ala Gly Cys Ala Ala Thr Ala
            260                 265                 270
Thr Ala Ala Cys Ala Gly Cys Thr Thr Thr Cys Cys Ala Thr Thr Cys
        275                 280                 285
Ala Cys Gly Thr Thr Cys Gly Gly Cys Thr Cys Gly Gly Gly Gly Ala
    290                 295                 300
Cys Ala Ala Ala Gly Thr Thr Gly Gly Ala Ala Ala Thr Ala Ala Ala
305                 310                 315                 320
Ala Cys Gly Thr Ala Cys Gly Gly Thr Gly Gly Cys Cys Gly Cys Cys
                325                 330                 335
Cys Cys Cys Ala Gly Cys Gly Thr Gly Thr Thr Cys Ala Thr Cys Thr
            340                 345                 350
Thr Cys Cys Cys Cys Cys Cys Cys Ala Gly Cys Gly Ala Thr Gly Ala
        355                 360                 365
Gly Cys Ala Gly Cys Thr Gly Ala Ala Gly Ala Gly Cys Gly Gly Cys
```

```
    370                 375                 380
Ala Cys Cys Gly Cys Cys Ala Gly Cys Gly Thr Gly Gly Thr Gly Thr
385                 390                 395                 400
Gly Thr Cys Thr Gly Cys Thr Gly Ala Ala Cys Ala Ala Cys Thr Thr
                405                 410                 415
Cys Thr Ala Cys Cys Cys Cys Cys Gly Gly Gly Ala Gly Gly Cys Cys
            420                 425                 430
Ala Ala Gly Gly Thr Gly Cys Ala Gly Thr Gly Gly Ala Ala Gly Gly
        435                 440                 445
Thr Gly Gly Ala Cys Ala Ala Thr Gly Cys Cys Cys Thr Gly Cys Ala
    450                 455                 460
Gly Ala Gly Cys Gly Gly Cys Ala Ala Cys Ala Gly Cys Cys Ala Gly
465                 470                 475                 480
Gly Ala Gly Ala Gly Cys Gly Thr Gly Ala Cys Cys Gly Ala Gly Cys
                485                 490                 495
Ala Gly Gly Ala Cys Ala Gly Cys Ala Ala Gly Gly Ala Cys Thr Cys
            500                 505                 510
Cys Ala Cys Cys Thr Ala Cys Ala Gly Cys Cys Thr Gly Ala Gly Cys
        515                 520                 525
Ala Gly Cys Ala Cys Cys Cys Thr Gly Ala Cys Cys Thr Gly Ala
    530                 535                 540
Gly Cys Ala Ala Gly Gly Cys Cys Gly Ala Cys Thr Ala Cys Gly Ala
545                 550                 555                 560
Gly Ala Ala Gly Cys Ala Cys Ala Ala Gly Gly Thr Gly Thr Ala Cys
                565                 570                 575
Gly Cys Cys Thr Gly Thr Gly Ala Gly Gly Thr Gly Ala Cys Cys Cys
            580                 585                 590
Ala Cys Cys Ala Gly Gly Gly Cys Cys Thr Gly Thr Cys Cys Ala Gly
        595                 600                 605
Cys Cys Cys Cys Gly Thr Gly Ala Cys Cys Ala Ala Gly Ala Gly Cys
    610                 615                 620
Thr Thr Cys Ala Ala Cys Cys Gly Gly Gly Gly Cys Gly Ala Gly Thr
625                 630                 635                 640
Gly Cys
```

<210> 148
<211> 118
<212> PRT
<213> mus musculus

<400> 148

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

<210> 149
<211> 354

<212> DNA
<213> mus musculus

<400> 149
ccggtccaac tgcagcagcc tgggactgag ctggtgaggc ctgggacttc agtgaagttg 60
tcctgcaagg cttctggcta caccttcacc agctactgga tgcactgggt aaagcagagg 120
cctggacaag gccttgagtg gatcggagtg attgatcctt ctgatagtta tactaactac 180
aatcaaaagt tcaagggcaa ggccacattg actgtagaca catcctccag cacagcctac 240
atgcagctca gcagcctgac atctgaggac tctgcggtct attactgtgc aagacaggtg 300
tttgactatc ctatggacta ctggggtcaa ggaacctcag tcaccgtctc ctca 354

<210> 150
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 150
Pro Val Gln Leu Gln Gln Pro Gly Thr Glu Leu Val Arg Pro Gly Thr
 1   5   10   15
Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser His
            20   25   30
Trp Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
        35   40   45
Gly Val Ile Asp Pro Ser Asp Ser Tyr Thr Asn Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Lys Ala Thr Leu Thr Val Asp Thr Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Ala Arg Gln Val Phe Asp Tyr Pro Met Asp Tyr Trp Gly Gln Gly Thr
            100   105   110
Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
        115   120   125
Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130   135   140
Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145   150   155   160
Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165   170   175
Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180   185   190
Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195   200   205
Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210   215   220
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225   230   235   240
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245   250   255
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260   265   270
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275   280   285
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290   295   300
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305   310   315   320
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
                325   330   335
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu

```
            340                 345                 350
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445


<210> 151
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 151
ccggtccaac tgcagcagcc tgggactgag ctggtgaggc ctgggacttc agtgaagttg 60
tcctgcaagg cttctggcta caccttcacc agccactgga tgcactgggt aaagcagagg 120
cctggacaag gccttgagtg gatcggagtg attgatcctt ctgatagtta tactaactac 180
aatcaaaagt tcaagggcaa ggccacattg actgtagaca catcctccag cacagcctac 240
atgcagctca gcagcctgac atctgaggac tctgcggtct attactgtgc aagacaggtg 300
tttgactatc ctatggacta ctggggtcaa ggaacactag tgaccgtgtc cagcgccagc 360
accaagggcc ccagcgtgtt ccccctggcc cccagcagca agagcaccag cggcggcaca 420
gccgccctgg gctgcctggt gaaggactac ttccccgaac cggtgaccgt gtcctggaac 480
agcggagccc tgaccagcgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg 540
tacagcctga gcagcgtggt gaccgtgccc agcagcagcc tgggcaccca gacctacatc 600
tgtaacgtga accacaagcc cagcaacacc aaggtggaca agaaggtgga gcccaagagc 660
tgtgacaaga cccacacctg ccccccctgc cctgccccg agctgctggg aggccccagc 720
gtgttcctgt tcccccccaa gcctaaggac accctgatga tcagcagaac ccccgaggtg 780
acctgtgtgg tggtggatgt gagccacgag gaccctgagg tgaagttcaa ctggtacgtg 840
gacggcgtgg aggtgcacaa tgccaagacc aagcccaggg aggagcagta caacagcacc 900
taccgggtgg tgtccgtgct gaccgtgctg caccaggatt ggctgaacgg caaggagtac 960
aagtgtaagg tgtccaacaa ggccctgcct gcccctatcg agaaaaccat cagcaaggcc 1020
aagggccagc ccagagagcc ccaggtgtac accctgcccc ctagcagaga tgagctgacc 1080
aagaaccagg tgtccctgac ctgcctggtg aagggcttct accccagcga catcgccgtg 1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccacccccc tgtgctggac 1200
agcgatggca gcttcttcct gtacagcaag ctgaccgtgg acaagagcag atggcagcag 1260
ggcaacgtgt tcagctgctc cgtgatgcac gaggccctgc acaatcacta cacccagaag 1320
agcctgagcc tgtcccctgg caag                                       1344

<210> 152
<211> 112
<212> PRT
<213> mus musculus

<400> 152
Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
 1               5                  10                  15
Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Ser Ile His
            20                  25                  30
Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
        35                  40                  45
Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
    50                  55                  60
Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr Leu Asn Ile His
```

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

<210> 153
<211> 336
<212> DNA
<213> mus musculus

<400> 153
gacattgtgc tgacccaatc tccagcttct ttggctgtgt ctctagggca gagggccacc 60
atctcctgca gagccagtga aagtgtcagt attcatggta ctcatttaat gcactggtac 120
caacagaaac caggacagcc acccaaactc ctcatctatg ctgcatccaa cctagaatct 180
ggagtccctg ccaggttcag tggcagtggg tctgagacag acttcaccct caacatccat 240
cctgtggagg aggaggatgc tgcaacctat ttctgtcagc aaagtattga ggatccgtgg 300
acgttcggtg gaggcaccaa gctggaaatc aaacgt 336

<210> 154
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 154
Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
1 5 10 15
Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Ser Ile His
20 25 30
Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45
Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
50 55 60
Arg Phe Ser Gly Ser Gly Ser Glu Thr Asp Phe Thr Leu Asn Ile His
65 70 75 80
Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Phe Cys Gln Gln Ser Ile
85 90 95
Glu Asp Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Asn Arg
100 105 110
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
115 120 125
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
130 135 140
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
145 150 155 160
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
165 170 175
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
180 185 190
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
195 200 205
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 155
<211> 654
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 155
gacattgtgc tgacccaatc tccagcttct ttggctgtgt ctctagggca gagggccacc 60
atctcctgca gagccagtga aagtgtcagt attcatggta ctcatttaat gcactggtac 120
caacagaaac caggacagcc acccaaactc ctcatctatg ctgcatccaa cctagaatct 180
ggagtccctg ccaggttcag tggcagtggg tctgagacag acttcaccct caacatccat 240
cctgtggagg aggaggatgc tgcaacctat ttctgtcagc aaagtattga ggatccgtgg 300
acgttcggtg gaggcaccaa gctggaaatc aatcgtacgg tggccgcccc cagcgtgttc 360
atcttccccc ccagcgatga gcagctgaag agcggcaccg ccagcgtggt gtgtctgctg 420
aacaacttct acccccggga ggccaaggtg cagtggaagg tggacaatgc cctgcagagc 480
ggcaacagcc aggagagcgt gaccgagcag gacagcaagg actccaccta cagcctgagc 540
agcaccctga ccctgagcaa ggccgactac gagaagcaca aggtgtacgc ctgtgaggtg 600
acccaccagg gcctgtccag ccccgtgacc aagagcttca accggggcga gtgc   654

<210> 156
<211> 118
<212> PRT
<213> mus musculus

<400> 156
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
 1   5   10   15
Ser Val Thr Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20   25   30
Glu Met His Trp Val Lys Gln Thr Pro Val His Gly Leu Glu Trp Ile
        35   40   45
Gly Ala Ile Asp Pro Glu Thr Gly Gly Thr Ala Tyr Asn Gln Lys Phe
    50   55   60
Lys Gly Lys Ala Ile Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65   70   75   80
Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85   90   95
Thr Arg Ser Ile Tyr Asp Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
            100   105   110
Thr Leu Thr Val Ser Ser
        115

<210> 157
<211> 354
<212> DNA
<213> mus musculus

<400> 157
caggttcaac tgcagcagtc tggggctgag ctggtgaggc ctggggcttc agtgacgctg 60
tcctgcaagg cttcgggcta cacatttact gactatgaaa tgcactgggt gaagcagaca 120
cctgtgcatg gcctggaatg gattggagct attgatcctg aaactggtgg tactgcctac 180
aatcagaagt tcaagggcaa ggccatactg actgcagaca aatcctccag cacagcctac 240
atggagctcc gcagcctgac atctgaggac tctgccgtct attactgtac aagatcgatt 300
tatgattact actttgacta ctggggccaa ggcaccactc tcacagtctc ctca   354

<210> 158
<211> 448
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 158

eolf-seql

```
Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala
 1               5                  10                  15
Ser Val Thr Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr
            20                  25                  30
Glu Met His Trp Val Lys Gln Thr Pro Val His Gly Leu Glu Trp Ile
        35                  40                  45
Gly Ala Ile Asp Pro Glu Thr Gly Gly Thr Ala Tyr Asn Gln Lys Phe
    50                  55                  60
Lys Gly Lys Ala Ile Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Arg Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys
                85                  90                  95
Thr Arg Ser Ile Tyr Asp Tyr Tyr Phe Asp Tyr Trp Gly Gln Gly Thr
            100                 105                 110
Thr Leu Thr Val Ser Ser Ala Lys Thr Thr Pro Pro Ser Val Phe Pro
        115                 120                 125
Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly
    130                 135                 140
Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
145                 150                 155                 160
Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
                165                 170                 175
Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
            180                 185                 190
Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser
        195                 200                 205
Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr
    210                 215                 220
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser
225                 230                 235                 240
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg
                245                 250                 255
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro
            260                 265                 270
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala
        275                 280                 285
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val
    290                 295                 300
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr
305                 310                 315                 320
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr
                325                 330                 335
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu
            340                 345                 350
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys
        355                 360                 365
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser
    370                 375                 380
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp
385                 390                 395                 400
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser
                405                 410                 415
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala
            420                 425                 430
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
        435                 440                 445
```

<210> 159
<211> 1344
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 159
caggttcaac tgcagcagtc tggggctgag ctggtgaggc ctggggcttc agtgacgctg 60
tcctgcaagg cttcgggcta cacatttact gactatgaaa tgcactgggt gaagcagaca 120
cctgtgcatg gcctggaatg gattggagct attgatcctg aaactggtgg tactgcctac 180
aatcagaagt tcaagggcaa ggccatactg actgcagaca aatcctccag cacagcctac 240
atggagctcc gcagcctgac atctgaggac tctgccgtct attactgtac aagatcgatt 300
tatgattact actttgacta ctggggccaa ggcaccactc tcacagtctc ctcagccaaa 360
acgacacccc ccagcgtgtt ccccctggcc cccagcagca agagcaccag cggcggcaca 420
gccgccctgg gctgcctggt gaaggactac ttccccgaac cggtgaccgt gtcctggaac 480
agcggagccc tgaccagcgg cgtgcacacc ttccccgccg tgctgcagag cagcggcctg 540
tacagcctga gcagcgtggt gaccgtgccc agcagcagcc tgggcaccca gacctacatc 600
tgtaacgtga accacaagcc cagcaacacc aaggtggaca agaaggtgga gcccaagagc 660
tgtgacaaga cccacacctg ccccccctgc cctgccccg agctgctggg aggccccagc 720
gtgttcctgt tcccccccaa gcctaaggac accctgatga tcagcagaac ccccgaggtg 780
acctgtgtgg tggtggatgt gagccacgag gaccctgagg tgaagttcaa ctggtacgtg 840
gacggcgtgg aggtgcacaa tgccaagacc aagcccaggg aggagcagta caacagcacc 900
taccgggtgg tgtccgtgct gaccgtgctg caccaggatt ggctgaacgg caaggagtac 960
aagtgtaagg tgtccaacaa ggccctgcct gcccctatcg agaaaaccat cagcaaggcc 1020
aagggccagc ccagagagcc ccaggtgtac accctgcccc ctagcagaga tgagctgacc 1080
aagaaccagg tgtccctgac ctgcctggtg aagggcttct accccagcga catcgccgtg 1140
gagtgggaga gcaacggcca gcccgagaac aactacaaga ccacccccc tgtgctggac 1200
agcgatggca gcttcttcct gtacagcaag ctgaccgtgg acaagagcag atggcagcag 1260
ggcaacgtgt tcagctgctc cgtgatgcac gaggccctgc acaatcacta cacccagaag 1320
agcctgagcc tgtccctgg caag 1344

<210> 160
<211> 112
<212> PRT
<213> mus musculus

<400> 160
Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
 1   5   10   15
Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Ser Ile His
            20   25   30
Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
        35   40   45
Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
    50   55   60
Arg Phe Ser Gly Gly Gly Ser Glu Thr Asp Phe Thr Leu Asn Ile His
65   70   75   80
Pro Val Glu Glu Glu Asp Gly Ala Thr Tyr Phe Cys Gln Gln Ser Ile
                85   90   95
Glu Tyr Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Asn Arg
            100   105   110

<210> 161
<211> 336
<212> DNA
<213> mus musculus

<400> 161
gacattgtgc tgacccaatc tccagcttct ttggctgtgt ctctagggca gagggccacc 60
atctcctgca gagccagtga aagtgtcagt attcatggta ctcatttaat gcactggtac 120
caacagaaac caggacagcc acccaaactc ctcatctatg ctgcatccaa cctagaatct 180
ggagtccctg ccaggttcag tggcggtggg tctgagacag acttcaccct caacatccat 240
cctgtggagg aggaggatgg tgcaacctat ttctgtcagc aaagtattga gtatcctcgg 300
acgttcggtg gaggcaccaa gctggaaatc aatcgt 336

<210> 162
<211> 218
<212> PRT
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 162
Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly
 1   5   10   15
Gln Arg Ala Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Ser Ile His
            20   25   30
Gly Thr His Leu Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
        35   40   45
Lys Leu Leu Ile Tyr Ala Ala Ser Asn Leu Glu Ser Gly Val Pro Ala
    50   55   60
Arg Phe Ser Gly Gly Gly Ser Glu Thr Asp Phe Thr Leu Asn Ile His
65   70   75   80
Pro Val Glu Glu Glu Asp Gly Ala Thr Tyr Phe Cys Gln Gln Ser Ile
                85   90   95
Glu Tyr Pro Arg Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Asn Arg
            100   105   110
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
        115   120   125
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
    130   135   140
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
145   150   155   160
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
                165   170   175
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
            180   185   190
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
        195   200   205
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
    210   215

<210> 163
<211> 654
<212> DNA
<213> Artificial Sequence

<220>
<223> Chimeric antibody sequence

<400> 163
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atctcctgca gagccagtga aagtgtcagt attcatggta ctcatttaat gcactggtac 120
caacagaaac caggacagcc acccaaactc ctcatctatg ctgcatccaa cctagaatct 180
ggagtccctg ccaggttcag tggcggtggg tctgagacag acttcaccct caacatccat 240
cctgtggagg aggaggatgg tgcaacctat ttctgtcagc aaagtattga gtatcctcgg 300
acgttcggtg gaggcaccaa gctggaaatc aatcgtacgg tggccgcccc cagcgtgttc 360
atcttccccc ccagcgatga gcagctgaag agcggcaccg ccagcgtggt gtgtctgctg 420
aacaacttct acccccggga ggccaaggtg cagtggaagg tggacaatgc cctgcagagc 480
ggcaacagcc aggagagcgt gaccgagcag gacagcaagg actccaccta cagcctgagc 540
agcaccctga ccctgagcaa ggccgactac gagaagcaca aggtgtacgc ctgtgaggtg 600
acccaccagg gcctgtccag ccccgtgacc aagagcttca accggggcga gtgc   654

<210> 164
<211> 5
<212> PRT

<213> mus musculus

<400> 164
Asp Tyr Tyr Asn Met
 1   5

<210> 165
<211> 16
<212> PRT
<213> mus musculus

<400> 165
Val Ile Asn Pro Tyr Asn Gly Gly Thr Asp Tyr Asn Gln Lys Phe Gly
 1   5   10   15

<210> 166
<211> 9
<212> PRT
<213> mus musculus

<400> 166
Ser Val Tyr Asp Tyr Pro Phe Asp Tyr
 1   5

<210> 167
<211> 15
<212> PRT
<213> mus musculus

<400> 167
Arg Ala Ser Glu Ser Val Ser Ile His Gly Thr His Leu Met His
 1   5   10   15

<210> 168
<211> 7
<212> PRT
<213> mus musculus

<400> 168
Ala Ala Ser Asn Leu Glu Ser
 1   5

<210> 169
<211> 9
<212> PRT
<213> mus musculus

<400> 169
Gln Gln Ser Ile Glu Asp Pro Arg Thr
 1   5

<210> 170
<211> 5
<212> PRT
<213> mus musculus

<400> 170

Asp Tyr Ser Ile Asp
 1   5

<210> 171
<211> 17
<212> PRT
<213> mus musculus

<400> 171
Asp Ile Asp Pro Asn Tyr Gly Asp Pro Ile Tyr Asn His Lys Phe Lys
 1   5   10   15
Gly

<210> 172
<211> 10
<212> PRT
<213> mus musculus

<400> 172
Arg Ala Thr Gly Thr Asp Trp Phe Ala Phe
 1   5   10

<210> 173
<211> 11
<212> PRT
<213> mus musculus

<400> 173
Arg Ala Ser Glu Asn Ile Tyr Asn Asn Leu Ala
 1   5   10

<210> 174
<211> 7
<212> PRT
<213> mus musculus

<400> 174
Ala Ala Thr Ile Leu Ala Asp
 1   5

<210> 175
<211> 9
<212> PRT
<213> mus musculus

<400> 175
Gln His Phe Trp Gly Thr Pro Leu Thr
 1   5

<210> 176
<211> 5
<212> PRT
<213> mus musculus

<400> 176
Asn Tyr Trp Met His

1 5

<210> 177
<211> 17
<212> PRT
<213> mus musculus

<400> 177
Ile Ile His Pro Asn Ser Gly Ser Thr Asn Tyr Asn Glu Lys Phe Lys
1 5 10 15
Ser

<210> 178
<211> 9
<212> PRT
<213> mus musculus

<400> 178
Gly Ile Tyr Asp Tyr Pro Phe Ala Tyr
1 5

<210> 179
<211> 15
<212> PRT
<213> mus musculus

<400> 179
Arg Ala Ser Glu Ser Val Ser Ile His Gly Thr His Leu Met His
1 5 10 15

<210> 180
<211> 7
<212> PRT
<213> mus musculus

<400> 180
Ala Ala Ser Asn Leu Glu Ser
1 5

<210> 181
<211> 9
<212> PRT
<213> mus musculus

<400> 181
Gln Gln Ser Ile Glu Asp Pro Tyr Thr
1 5

<210> 182
<211> 5
<212> PRT
<213> mus musculus

<400> 182
Arg Tyr Trp Met Ser
1 5

<210> 183
<211> 17
<212> PRT
<213> mus musculus

<400> 183
Glu Ile Asn Pro Asp Arg Ser Thr Ile Asn Tyr Ala Pro Ser Leu Lys
 1   5   10   15
Asp

<210> 184
<211> 11
<212> PRT
<213> mus musculus

<400> 184
Phe Tyr Tyr Asp Tyr Glu Gly Ala Met Asp Tyr
 1   5   10

<210> 185
<211> 11
<212> PRT
<213> mus musculus

<400> 185
Lys Ala Ser Gln Asn Val Asp Thr Asn Val Ala
 1   5   10

<210> 186
<211> 7
<212> PRT
<213> mus musculus

<400> 186
Ser Ala Ser Tyr Arg Phe Ser
 1   5

<210> 187
<211> 9
<212> PRT
<213> mus musculus

<400> 187
Gln Gln Tyr Asn Ser Phe Pro Phe Thr
 1   5

<210> 188
<211> 5
<212> PRT
<213> mus musculus

<400> 188
Ser Tyr Trp Met His
 1   5

<210> 189
<211> 17
<212> PRT
<213> mus musculus

<400> 189
Val Ile Asp Pro Ser Asp Ser Tyr Thr Asn Tyr Asn Gln Lys Phe Lys
 1   5   10   15
Gly

<210> 190
<211> 9
<212> PRT
<213> mus musculus

<400> 190
Gln Val Phe Asp Tyr Pro Met Asp Tyr
 1   5

<210> 191
<211> 15
<212> PRT
<213> mus musculus

<400> 191
Arg Ala Ser Glu Ser Val Ser Ile His Gly Thr His Leu Met His
 1   5   10   15

<210> 192
<211> 7
<212> PRT
<213> mus musculus

<400> 192
Ala Ala Ser Asn Leu Glu Ser
 1   5

<210> 193
<211> 9
<212> PRT
<213> mus musculus

<400> 193
Gln Gln Ser Ile Glu Asp Pro Trp Thr
 1   5

<210> 194
<211> 5
<212> PRT
<213> mus musculus

<400> 194
Asp Tyr Glu Met His
 1   5

<210> 195
<211> 17
<212> PRT
<213> mus musculus

<400> 195
Ala Ile Asp Pro Glu Thr Gly Gly Thr Ala Tyr Asn Gln Lys Phe Lys
 1   5   10   15
Gly

<210> 196
<211> 9
<212> PRT
<213> mus musculus

<400> 196
Ser Ile Tyr Asp Tyr Tyr Phe Asp Tyr
 1   5

<210> 197
<211> 15
<212> PRT
<213> mus musculus

<400> 197
Arg Ala Ser Glu Ser Val Ser Ile His Gly Thr His Leu Met His
 1   5   10   15

<210> 198
<211> 7
<212> PRT
<213> mus musculus

<400> 198
Ala Ala Ser Asn Leu Glu Ser
 1   5

<210> 199
<211> 9
<212> PRT
<213> mus musculus

<400> 199
Gln Gln Ser Ile Glu Tyr Pro Arg Thr
 1   5