SEQUENCE LISTING

<110> Synovex Corporation
McArthur, James G.

<120> HUMANIZED ANTIBODIES TARGETING THE EC1
DOMAIN OF CADHERIN-11 AND RELATED COMPOSITIONS AND METHODS

<130> 4164.1004001

<140> PCT/US11/44172
<141> 2011-07-15

<150> 61/364,698
<151> 2010-07-15

<160> 75

<170> FastSEQ for Windows Version 4.0

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<212> DNA
<213> Homo sapiens

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Gln Arg Ser Lys Arg Gly Trp Val Trp Asn Gln Phe Phe Val Ile Glu
    50                  55                  60
Glu Tyr Thr Gly Pro Asp Pro Val Leu Val Gly Arg Leu His Ser Asp
65                  70                  75                  80
Ile Asp Ser Gly Asp Gly Asn Ile Lys Tyr Ile Leu Ser Gly Glu Gly
                85                  90                  95
Ala Gly Thr Ile Phe Val Ile Asp Asp Lys Ser Gly Asn Ile His Ala
            100                 105                 110
Thr Lys Thr Leu Asp Arg Glu Glu Arg Ala Gln Tyr Thr Leu Met Ala
        115                 120                 125
Gln Ala Val Asp Arg Asp Thr Asn Arg Pro Leu Glu Pro Pro Ser Glu
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Phe Ile Val Lys Val Gln Asp Ile Asn Asp Asn Pro Pro Glu Phe Leu
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His Glu Thr Tyr His Ala Asn Val Pro Glu Arg Ser Asn Val Gly Thr
                165                 170                 175
Ser Val Ile Gln Val Thr Ala Ser Asp Ala Asp Asp Pro Thr Tyr Gly
            180                 185                 190
Asn Ser Ala Lys Leu Val Tyr Ser Ile Leu Glu Gly Gln Pro Tyr Phe
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Ser Val Glu Ala Gln Thr Gly Ile Ile Arg Thr Ala Leu Pro Asn Met
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Asp Arg Glu Ala Lys Glu Glu Tyr His Val Val Ile Gln Ala Lys Asp
225                 230                 235                 240
Met Gly Gly His Met Gly Gly Leu Ser Gly Thr Thr Lys Val Thr Ile
                245                 250                 255
Thr Leu Thr Asp Val Asn Asp Asn Pro Pro Lys Phe Pro Gln Ser Val
            260                 265                 270
Tyr Gln Met Ser Val Ser Glu Ala Ala Val Pro Gly Glu Glu Val Gly
        275                 280                 285
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Tyr Asn Ile Val Asp Gly Asp Gly Met Glu Ser Phe Glu Ile Thr Thr
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        355                 360                 365
Thr Val Lys Ile Ser Val Glu Asp Ala Asp Glu Pro Pro Met Phe Leu
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Ala Pro Ser Tyr Ile His Glu Val Gln Glu Asn Ala Ala Ala Gly Thr
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Val Val Gly Arg Val His Ala Lys Asp Pro Asp Ala Ala Asn Ser Pro
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Ile Arg Tyr Ser Ile Asp Arg His Thr Asp Leu Asp Arg Phe Phe Thr
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Glu Glu Thr Ala Trp Leu Asn Ile Thr Val Phe Ala Ala Glu Ile His
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Cys Glu Ser Asp Gln Thr Lys Pro Leu Ser Asn Gln Pro Ile Val Thr
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Ile Ser Ala Asp Asp Lys Asp Asp Thr Ala Asn Gly Pro Arg Phe Ile
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Phe Ser Leu Pro Pro Glu Ile Ile His Asn Pro Asn Phe Thr Val Arg
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Ser Arg Gln Lys Gln Asp Leu Tyr Leu Leu Pro Ile Val Ile Ser Asp
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Cys Gly Cys Asp Val Asn Gly Ala Leu Leu Ser Cys Asn Ala Glu Ala
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Tyr Ile Leu Asn Ala Gly Leu Ser Thr Gly Ala Leu Ile Ala Ile Leu
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Ala Cys Ile Val Ile Leu Leu Val Ile Val Val Leu Phe Val Thr Leu
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Arg Arg Gln Lys Lys Glu Pro Leu Ile Val Phe Glu Glu Glu Asp Val
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Arg Glu Asn Ile Ile Thr Tyr Asp Asp Glu Gly Gly Gly Glu Glu Asp
            660                 665                 670
Thr Glu Ala Phe Asp Ile Ala Thr Leu Gln Asn Pro Asp Gly Ile Asn
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Tyr Asp Ser Ile Gln Ile Tyr Gly Tyr Glu Gly Arg Gly Ser Val Ala
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<210> 4
<211> 34
<212> PRT
<213> Homo sapiens

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20 25 30
Lys Lys

<210> 5
<211> 34
<212> PRT
<213> Homo sapeins

<400> 5
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<212> PRT
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        35   40   45
Gln Arg Ser Lys Arg Gly Trp Val Trp Asn Gln Phe Phe Val Ile Glu
    50   55   60
Glu Tyr Thr Gly Pro Asp Pro Val Leu Val Gly Arg Leu His Ser Asp
65   70   75   80
Ile Asp Ser Gly Asp Gly Asn Ile Lys Tyr Ile Leu Ser Gly Glu Gly
                85   90   95
Ala Gly Thr Ile Phe Val Ile Asp Asp Lys Ser Gly Asn Ile His Ala
            100   105   110
Thr Lys Thr Leu Asp Arg Glu Glu Arg Ala Gln Tyr Thr Leu Met Ala
        115   120   125
Gln Ala Val Asp Arg Asp Thr Asn Arg Pro Leu Glu Pro Pro Ser Glu
    130   135   140
Phe Ile Val Lys Val Gln Arg Ser Val Glu Cys Pro Pro Cys Pro Ala
145   150   155   160
Pro Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
                165   170   175
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
            180   185   190
Asp Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp
        195   200   205
Gly Met Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe
    210   215   220
Asn Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp
225   230   235   240
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu
                245   250   255
Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg
            260   265   270
Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys
        275   280   285
Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
    290   295   300
Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
305   310   315   320
Thr Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
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<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

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<213> Homo sapiens

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<210> 12
<211> 19
<212> PRT
<213> Homo sapiens

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<210> 13
<211> 37
<212> PRT
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<210> 42
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<223> PCR primer

<400> 42
actagtcgac atgtatatat gtttgttgtc tatttct 37

<210> 43
<211> 39
<212> DNA

<213> Artificial Sequence

<220>
<223> PCR primer

<400> 43
actagtcgac atgaagttgc ctgttaggct gttggtgct 39

<210> 44
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 44
actagtcgac atggatttwc argtgcagat twtcagctt 39

<210> 45
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 45
actagtcgac atggtyctya tvtccttgct gttctgg 37

<210> 46
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 46
actagtcgac atggtyctya tvttrctgct gctatgg 37

<210> 47
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 47
cccaagctta ctggatggtg ggaagatgga 30

<210> 48
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<400> 48
gggaattcat ggcctggayt ycwctywtmy tct 33

<210> 49
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer

<220>
<221> misc_feature
<222> 24
<223> n = inosine

<400> 49
cccaagctta gctcytcwgw gganggyggr aa 32

<210> 50
<211> 356
<212> DNA
<213> Mus musculus

<400> 50
gaggttcagc tgcagcagtc tggacctgag ctggtgaagc ctggggcttc agtgaagata 60
tcctgcaagg cttctggtta ctcatttact ggctacttta tgaactgggt gaagcagagc 120
catggaaaga gccttgagtg gattggacgt attaatcctt acactggtga tactttctac 180
aaccagaagt tcaagggcaa ggccacattg actgttgaca aatcctctag cacagcccac 240
atggagctcc tgagcctgtc atctgaagac tctgcagtct attattgtgg acgactcggt 300
agtaggtact ggtacttcga tgtctggggc gcagggacca cggtcaccgt ctcctc 356

<210> 51
<211> 119
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable heavy chain sequence

<400> 51
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 Ser Phe Thr Gly Tyr
20 25 30
Phe Met Asn Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asn Pro Tyr Thr Gly Asp Thr Phe Tyr Asn Gln Lys Phe
50 55 60
Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser Thr Ala His
65 70 75 80
Met Glu Leu Leu Ser Leu Ser Ser Glu Asp Ser Ala Val Tyr Tyr Cys
85 90 95
Gly Arg Leu Gly Ser Arg Tyr Trp Tyr Phe Asp Val Trp Gly Ala Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 52
<211> 5
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable heavy chain CDR1

<400> 52
Gly Tyr Phe Met Asn
1 5

<210> 53
<211> 17
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable heavy chain CDR2

<400> 53
Arg Ile Asn Pro Tyr Thr Gly Asp Thr Phe Tyr Asn Gln Lys Phe Lys
 1   5   10   15
Gly

<210> 54
<211> 10
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable heavy chain CDR3

<400> 54
Leu Gly Ser Arg Tyr Trp Tyr Phe Asp Val
 1   5   10

<210> 55
<211> 336
<212> DNA
<213> Mus musculus

<220>
<223> H1M1 variable light chain coding sequence

<400> 55
gatgttttga tgacccaaac tccactctcc ctgcctgtca gtcttggaga tcaagcctcc 60
atctcttgca gatctagtca gagcattata catagtaatg gaaacaccta tttagaatgg 120
tacctgcaga aaccaggcca gtctccaaag ctcctgatct acaaagtttc caaccgattt 180
tctggggtcc cagacaggtt cactggcagt ggatcaggga cagatttcac actcaagatc 240
agcagagtgg aggctgagga tctgggagtt tattactgct ttcaaggttc acatgttcct 300
tggacgttcg gtggaggcac caagctggaa atcaaa   336

<210> 56
<211> 124
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable light chain sequence

<400> 56
Asp Val Leu Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
 1   5   10   15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Ile His Ser
            20   25   30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
        35   40   45
Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
    50   55   60
Asp Arg Phe Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Thr
65   70   75   80
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu
                85   90   95
Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly Ser His Val Pro
            100   105   110
Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
        115   120

<210> 57
<211> 16
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable light chain CDR1

<400> 57
Arg Ser Ser Gln Ser Ile Ile His Ser Asn Gly Asn Thr Tyr Leu Glu
 1   5   10   15

<210> 58
<211> 7
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable light chain CDR2

<400> 58
Lys Val Ser Asn Arg Phe Ser
 1   5

<210> 59
<211> 9
<212> PRT
<213> Mus musculus

<220>
<223> H1M1 variable light chain CDR3

<400> 59
Phe Gln Gly Ser His Val Pro Trp Thr
 1   5

<210> 60
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 60
gaggttcagc tggtgcagtc tggacctgag ctgaagaagc ctggggcttc agtgaagata 60
tcctgcaagg cttctggtta ctcatttact ggctacttta tgaactgggt gaagcaggcc 120
catggacagg gccttgagtg gattggacgt attaatcctt acactggtga tactttctac 180
aaccagaagt tcaagggcag ggccacattg actgttgaca aatcctctag cacagcctac 240
atggagctcg tgagcctgtc atctgaagac tctgcagtct attattgtgg acgactcggt 300
agtaggtact ggtacttcga tgtctggggc caggggacca cggtcaccgt ctcctca   357

<210> 61
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

<400> 61
Glu Val Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Lys Pro Gly Ala
 1   5   10   15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
            20   25   30

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

<210> 62
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 62
gaggttcagc tggtgcagtc tggagccgag gtgaagaagc ctggggcttc agtgaagata 60
tcctgcaagg cttctggtta ctcatttact ggctacttta tgaactgggt gaagcaggcc 120
cctggacagg gccttgagtg gattggacgt attaatcctt acactggtga tactttctac 180
aaccagaagt tcaagggcag ggccacattg actgttgaca aatccaccag cacagcctac 240
atggagctct ccagcctgag atctgaagac accgcagtct attattgtgg acgactcggt 300
agtaggtact ggtacttcga tgtctggggc caggggacca cggtcaccgt ctcctca 357

<210> 63
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

<400> 63
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30
Phe Met Asn Trp Val Lys Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asn Pro Tyr Thr Gly Asp Thr Phe 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
Gly Arg Leu Gly Ser Arg Tyr Trp Tyr Phe Asp Val Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 64
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 64
gaggttcagc tggtgcagtc tggagccgag gtgaagaagc ctggggcttc agtgaagata 60
tcctgcaagg cttctggtta ctcatttact ggctacttta tgaactgggt gaggcaggcc 120

cctggacagg gccttgagtg gattggacgt attaatcctt acactggtga tactttctac 180
aaccagaagt tcaagggcag ggccacattg actgttgaca aatccaccag cacagcctac 240
atggagctct ccagcctgag atctgaagac accgcagtct attattgtgg acgactcggt 300
agtaggtact ggtacttcga tgtctggggc caggggacca cggtcaccgt ctcctca 357

<210> 65
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

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

<210> 66
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 66
gaggttcagc tggtgcagtc tggagccgag gtgaagaagc ctggggcttc agtgaaggtg 60
tcctgcaagg cttctggtta ctcatttact ggctacttta tgaactgggt gaggcaggcc 120
cctggacagg gccttgagtg gattggacgt attaatcctt acactggtga tactttctac 180
aaccagaagt tcaagggcag ggccacaatc actgttgaca aatccaccag cacagcctac 240
atggagctct ccagcctgag atctgaagac accgcagtct attattgtgg acgactcggt 300
agtaggtact ggtacttcga tgtctggggc caggggacca cggtcaccgt ctcctca 357

<210> 67
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

<400> 67
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30
Phe Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asn Pro Tyr Thr Gly Asp Thr Phe Tyr Asn Gln Lys Phe
50 55 60
Lys Gly Arg Ala Thr Ile 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
Gly Arg Leu Gly Ser Arg Tyr Trp Tyr Phe Asp Val Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 68
<211> 357
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 68
gaggttcagc tggtgcagtc tggagccgag gtgaagaagc ctggggcttc agtgaaggtg 60
tcctgcaagg cttctggtta ctcatttact ggctacttta tgaactgggt gaggcaggcc 120
cctggacagg gccttgagtg gattggacgt attaatcctt acactggtga tactttctac 180
aaccagaagt tcaagggcag ggtgacaatc actgttgaca aatccaccag cacagcctac 240
atggagctct ccagcctgag atctgaagac accgcagtct attattgtgg acgactcggt 300
agtaggtact ggtacttcga tgtctggggc caggggacca cggtcaccgt ctcctca 357

<210> 69
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

<400> 69
Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Gly Tyr
20 25 30
Phe Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
35 40 45
Gly Arg Ile Asn Pro Tyr Thr Gly Asp Thr Phe Tyr Asn Gln Lys Phe
50 55 60
Lys Gly Arg Val Thr Ile 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
Gly Arg Leu Gly Ser Arg Tyr Trp Tyr Phe Asp Val Trp Gly Gln Gly
100 105 110
Thr Thr Val Thr Val Ser Ser
115

<210> 70
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 70
gatgttttga tgacccaaac tccactctcc tcccctgtca cccttggaca gccagcctcc 60
atctcttgca gatctagtca gagcattata catagtaatg gaaacaccta tttagaatgg 120
tacctgcaga aaccaggcca gtctccacag ctcctgatct acaaagtttc caaccgattt 180
tctggggtcc cagacaggtt cactggcagt ggatcaggga cagatttcac actcaagatc 240
agcagagtgg aggctgagga tgtgggagtt tattactgct ttcaaggttc acatgttcct 300
tggacgttcg gtcagggcac caagctggaa atcaaa 336

<210> 71
<211> 112

<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

<400> 71
Asp Val Leu Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1 5 10 15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Ile His Ser
20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95
Ser His Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 72
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 72
gatgttttga tgacccaaac tccactctcc tcccctgtca cccttggaca gccagcctcc 60
atctcttgca gatctagtca gagcattata catagtaatg gaaacaccta tttagaatgg 120
tacctgcaga aaccaggcca gtctccacag ctcctgatct acaaagtttc caaccgattt 180
tctggggtcc cagacaggtt cagcggcagt ggatcaggga cagatttcac actcaagatc 240
agcagagtgg aggctgagga tgtgggagtt tattactgct ttcaaggttc acatgttcct 300
tggacgttcg gtcagggcac caagctggaa atcaaa 336

<210> 73
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

<400> 73
Asp Val Leu Met Thr Gln Thr Pro Leu Ser Ser Pro Val Thr Leu Gly
1 5 10 15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Ile His Ser
20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45
Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95
Ser His Val Pro Trp Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 74
<211> 336
<212> DNA
<213> Artificial Sequence

<220>
<223> coding sequence for humanized antibody chain

<400> 74
gatgttgtga tgacccaaac tccactctcc tcccctgtca cccttggaca gccagcctcc 60
atctcttgca gatctagtca gagcattata catagtaatg gaaacaccta tttagaatgg 120
tacctgcaga aaccaggcca gtctccacag ctcctgatct acaaagtttc caaccgattt 180
tctggggtcc cagacaggtt cagcggcagt ggatcaggga cagatttcac actcaagatc 240
agcagagtgg aggctgagga tgtgggagtt tattactgct ttcaaggttc acatgttcct 300
tggacgttcg gtcagggcac caagctggaa atcaaa 336

<210> 75
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> humanized antibody chain

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