SEQUENCE LISTING

<110> Crucell Holland BV

<120> Human binding molecules capable of neutralizing influenza A viruses of phylogenetic group 1 and phylogenetic group 2 and influenza B viruses

<130> 0190 WO 00 ORD

<140> PCT/EP2012/063637
<141> 2012-07-12

<150> EP11173953.8
<151> 2011-07-14

<150> US 61/572,417
<151> 2011-07-14

<160> 177

<170> PatentIn version 3.5

<210> 1
<211> 354
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cctggccaag gccttgagtg gatgggcggg atcagcccaa tctttggttc gacagtctac 180

gcacagaaat ttcagggcag agtcactatt tccgcggaca tattttcaca cactgcctac 240

atggagatga acagcctgac atctgaggac acggccgtct atttctgtgc gaggcacgga 300

aattattatt tctactccgg tatggacctc tggggccaag ggaccacggt cacc 354

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<220>
<223> SC09-003 VH PROTEIN

<400> 2

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Phe
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Val Tyr Ala Gln Lys Phe

50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser His Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Phe Tyr Ser Gly Met Asp Leu Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr
115

<210> 3
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<213> Artificial

<220>
<223> SC09-003 VL DNA

<400> 3
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tcctgtgggg gagacaacgt tggaagtaac agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctggtcgt ctatgatgat cgcgaccgac cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaacacggcc accctgacca tcagcagggt cgaagccggg 240

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actgggacca aggtcaccgt cctag 325

<210> 4
<211> 108
<212> PRT
<213> Artificial

<220>
<223> SC09-003 VL PROTEIN

<400> 4

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

Thr Ala Thr Ile Ser Cys Gly Gly Asp Asn Val Gly Ser Asn Ser Val
20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Asp Asp Arg Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Arg Val Glu Ala Gly

65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Arg Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
100 105

<210> 5
<211> 354
<212> DNA
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<220>
<223> SC09-004 VH DNA

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tcctgcaagt cttctggcgg cacctccaat aactatgcca tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg gtcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagtctgac atctgaggac acggccgtct attattgtgc gagacacggg 300

aattattatt acaactccgg tatggacgtc tggggccaag ggaccacggt cacc 354

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<212> PRT
<213> Artificial

<220>
<223> SC09-004 VH PROTEIN

<400> 6

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Val Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Asn Ser Gly Met Asp Val Trp Gly

100 105 110

Gln Gly Thr Thr Val Thr
115

<210> 7
<211> 331
<212> DNA
<213> Artificial

<220>
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tcgtgttctg gaagtgattc caacatcggg agaagaagtg taaactggta ccagcagttc 120

ccaggaacgg cccccaaact cctcatctat agtaacgatc agcggccctc agtggtccct 180

gaccgattct ctggctccaa gtccggcacc tcagcctccc tggccatcag tgggctccag 240

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ttcggaggag gcacccagct gaccgtcctc g 331

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<212> PRT
<213> Artificial

<220>
<223> SC09-004 VL PROTEIN

<400> 8

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Asp Ser Asn Ile Gly Arg Arg
20 25 30

Ser Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Ser Asn Asp Gln Arg Pro Ser Val Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95

Lys Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 9

<211> 354
<212> DNA
<213> Artificial

<220>
<223> SC09-005 VH DNA

<400> 9
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tcctgcaagt cttctggagg cacctccaat aactatgcta ttagttgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagtctac 180

gcacagaaat tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat atttctgtgc gaggcacggg 300

aactattatt actactccgg tatggacctc tggggccaag ggaccacggt cacc 354

<210> 10
<211> 118
<212> PRT
<213> Artificial

<220>
<223> SC09-005 VH PROTEIN

<400> 10

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Val Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Leu Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr
115

<210> 11
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-005 VL DNA

<400> 11
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tcctgcactg gaaccagcag tgacgtcggt ggttataact atgtctcctg gtaccaacaa 120

cacccaggca aagcccccaa actcctgatt tttgatgtca gtgatcggcc ctcaggggtt 180

tctgatcgct tctctggctc caagtctgcg gacacggcct ccctgaccat ctctggactc 240

caggctcagg acgaggctga ttattactgc tgctcatatg caggtagtgc caagggcgtc 300

ttcggaactg ggaccaaggt caccgtccta g 331

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

<220>
<223> SC09-005 VL PROTEIN

<400> 12

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

Ser Ile Thr Ile Ser Cys Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr
20 25 30

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

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

Ser Gly Ser Lys Ser Ala Asp Thr Ala Ser Leu Thr Ile Ser Gly Leu
65 70 75 80

Gln Ala Gln Asp Glu Ala Asp Tyr Tyr Cys Cys Ser Tyr Ala Gly Ser
85 90 95

Ala Lys Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu
100 105 110

<210> 13
<211> 354
<212> DNA
<213> Artificial

<220>
<223> SC09-006 VH DNA

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tcctgcaagt cttctggagg cacctccaat aactatgcta ttagttgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagtctac 180

gcacagaaat tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat atttctgtgc gaggcacggg 300

aactattatt actactccgg tatggacctc tggggccaag ggaccacggt cacc 354

<210> 14
<211> 118
<212> PRT
<213> Artificial

<220>
<223> SC09-006 VH PROTEIN

<400> 14

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Val Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Leu Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr
115

<210> 15
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-006 VL DNA

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acctgtgggg gaaacaacat tggaagtaaa actgtgcatt ggtaccagca gaactcaggc 120

caggcccctg tgctggtcgt ctatggtgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaccacggcc accctgacca tcagcagggt cgaagccggg 240

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ttcggaggag gcacccagct gaccgtcctc g 331

<210> 16
<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-006 VL PROTEIN

<400> 16

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

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

His Trp Tyr Gln Gln Asn Ser Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Gly Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Pro Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 17
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-007 VH DNA

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tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggaggg atcagcccta tctttggttc agcagcctac 180

gcacagaagt tccagggcag agtcactatt accgcggaca tattttcgaa cacagtgtac 240

atggagctga acagcctgac atctgaggac acggccgtgt attactgtgc gagacacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 18

<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-007 VH PROTEIN

<400> 18

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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Ala Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Ile Phe Ser Asn Thr Val Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 19
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-007 VL DNA

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tcttgttctg gaagcagctc caacatcgga agtaatactg taaactggta ccagcaggtc 120

cccggaacgg cccccaaact cctcatctat ggtgatgatc agcggccctc aggggtccct 180

gaccgattct ctggctccaa gtctggcacc tcagcctccc tggccatcag tgggctccag 240

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ttcggaggag gcacccagct gaccgtcctc g 331

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<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-007 VL PROTEIN

<400> 20

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
20 25 30

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

Ile Tyr Gly Asp Asp Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Thr Trp Asp Asp Ser Leu
85 90 95

Asn Gly His Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 21
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-008 VH DNA

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tcctgtaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat atttctgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 22
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-008 VH PROTEIN

<400> 22

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

1 5 10 15

Ser Val Arg Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 23
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-008 VL DNA

<400> 23
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acctgtgggg gaaacaacat tggaagtaaa actgtgcatt ggtaccagca gaactcaggc 120

caggcccctg tgctggtcgt ctatggtgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaccacggcc accctgacca tcagcagggt cgaagccggg 240

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ttcggaggag gcacccagct gaccgtcctc g 331

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<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-008 VL PROTEIN

<400> 24

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

Thr Ala Arg Ile Thr Cys Gly Gly Asn Asn Ile Gly Ser Lys Thr Val

20 25 30

His Trp Tyr Gln Gln Asn Ser Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Gly Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Pro Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 25
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-009 VH DNA

<400> 25
caggtgcagc tggtgcaatc tggggctgag gtcaagaagc ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaaat tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctggc atctgaggac acggccgtat atttctgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 26
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-009 VH PROTEIN

<400> 26

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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 27
<211> 322
<212> DNA
<213> Artificial

<220>
<223> SC09-009 VL DNA

<400> 27
gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtcacc 60

atcacttgtc gggcgagtca gcatattagc agttggttag cctggtatca gcagaagcca 120

gggaaaggcc ctcagctcct gatctattct gcatcccgtt tgcaaagtgg ggtcccatca 180

aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240

gaagattttg caacttacta ttgtcaacag gctaacagtt tccccctcac tttcggccct 300

gggaccaaag tggatatcaa ac 322

<210> 28
<211> 107
<212> PRT
<213> Artificial

<220>
<223> SC09-009 VL PROTEIN

<400> 28

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

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

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

Tyr Ser Ala Ser Arg Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 29
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-010 VH DNA

<400> 29
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tcctgcaagt cttctggagg cacctccaat aattatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttccaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat attactgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 30
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-010 VH PROTEIN

<400> 30

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys

85 90 95

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 31
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<212> DNA
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<220>
<223> SC09-010 VL DNA

<400> 31
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acctgtgggg gaaacaacat yggaagtaaa actgtgcatt ggtaccagca gaactcaggc 120

caggcccctg tgctggtcgt ctttgttgat agcgaccgtc cctcagggat ccatgagcga 180

ttctgtggct ccaactctgg gtccacggcc accctgacca tcagcagcgt cgaagccggg 240

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ttcggaggag gcacccagct gaccgtcctc g 331

<210> 32
<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-010 VL PROTEIN

<400> 32

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

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

His Trp Tyr Gln Gln Asn Ser Gly Gln Ala Pro Val Leu Val Val Phe
35 40 45

Val Asp Ser Asp Arg Pro Ser Gly Ile His Glu Arg Phe Cys Gly Ser
50 55 60

Asn Ser Gly Ser Thr Ala Thr Leu Thr Ile Ser Ser Val Glu Ala Gly
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Asn Ser Asp His
85 90 95

Pro Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu

100 105 110

<210> 33
<211> 363
<212> DNA
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<220>
<223> SC09-011 VH DNA

<400> 33
gaggtccagc tggtacagtc tggggctgag gtcaagaagc ctgggtcctc ggtgaaggtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcggcaggcc 120

cctggacaag gccttgactg gatgggaggg atcagcccta tctttggttc agcagcctac 180

gcacagaagt tccagggcag agtcactatt accgcggaca tattttcgaa cacagtgtac 240

atggagctga acagcctgac atctgaggac acggccgtgt attactgtgc gagacacggg 300

aattattatt actactccgg tacggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 34
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-011 VH PROTEIN

<400> 34

Glu 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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Ala Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Ile Phe Ser Asn Thr Val Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Thr Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 35
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-011 VL DNA

<400> 35
tcctatgtgc tgactcagcc acccgcagtg tctgggaccc ccgggcagag ggtcaccatc 60

tcgtgttctg gaagtgattc caacatcggg agaagaagtg taaactggta ccagcagttc 120

ccaggaacgg cccccaaact cctcatctat agtaacgatc agcggccctc agtggtccct 180

gaccgattct ctggctccaa gtccggcacc tcagcctccc tggccatcag tgggctccag 240

tctgaagatg aggccgaata ttactgtgca gcatgggatg acagcctgaa gggggctgtg 300

ttcggaggag gcacccagct gaccgtcctc g 331

<210> 36
<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-011 VL PROTEIN

<400> 36

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Asp Ser Asn Ile Gly Arg Arg
20 25 30

Ser Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Ser Asn Asp Gln Arg Pro Ser Val Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95

Lys Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 37
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-012 VH DNA

<400> 37
gaggtccagc tggtacagtc tggggctgag gtcaagaagc ctgggtcctc ggtgaaggtc 60

tcctgcaagt cttctggagg cacctccaat aattatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggaggg atcagcccta tttttggttc agcagtctac 180

gcacagaagt tccagggcag agtcactatt accgcggaca tattttcgaa cacagtgtac 240

atggagctga acagcctgac atctgaggac acggccgtgt attactgtgc gagacacggg 300

acttattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 38
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-012 VH PROTEIN

<400> 38

Glu 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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Ala Val Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Thr Ala Asp Ile Phe Ser Asn Thr Val Tyr
65 70 75 80

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

Ala Arg His Gly Thr Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 39
<211> 334
<212> DNA
<213> Artificial

<220>
<223> SC09-012 VL DNA

<400> 39

cagtctgtcg tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120

cttccaggga cagccccaa actcctcatc tatggtaaca acaatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240

caggttgagg atgaggctga ttattactgc cagtcctatg accagaacct gagtgagggg 300

gtcttcggcg gagggaccaa gctgaccgtc ctag 334

<210> 40
<211> 111
<212> PRT
<213> Artificial

<220>
<223> SC09-012 VL PROTEIN

<400> 40

Gln Ser Val Val Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

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

Leu Ser Glu Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 41
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-029 VH DNA

<400> 41
gaggtgcagc tggtggagtc cggggctgag gtcaagaagc ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat attactgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 42
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-029 VH PROTEIN

<400> 42

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 43
<211> 321
<212> DNA
<213> Artificial

<220>
<223> SC09-029 VL DNA

<400> 43
gaaattgtga tgacgcagtc tccaggcacc ctgtctttgt ctcctgggga aagaggcacc 60

ctctcctgca gggccagtca gagtgttagc agctacttag cctggtacca acagaaacct 120

ggccaggctc ccaggctcct catctatggt gcatccacca gggccactgg catcccagac 180

aggttcactg gcagtgggtc tgggacagac ttcactctca ccatcagcag actggagcct 240

gaagattttg cagtgtatta ctgtcagcag tatgggagct caccattcgc tttcggccct 300

gggaccaagg tggagatcaa a 321

<210> 44
<211> 107
<212> PRT
<213> Artificial

<220>
<223> SC09-029 VL PROTEIN

<400> 44

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

Glu Arg Gly Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
20 25 30

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

Tyr Gly Ala Ser Thr Arg Ala Thr Gly Ile Pro Asp Arg Phe Thr Gly
50 55 60

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

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Gly Ser Ser Pro Phe
85 90 95

Ala Phe Gly Pro Gly Thr Lys Val Glu Ile Lys
100 105

<210> 45
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-030 VH DNA

<400> 45
cagatgcagc tggtgcagtc tggggctgag gtcaagaagc ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat atttctgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 46
<211> 121
<212> PRT

<213> Artificial

<220>
<223> SC09-030 VH PROTEIN

<400> 46

Gln Met 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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 47
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-030 VL DNA

<400> 47
tcctatgtgc tgactcagcc accctcggtg tcagtggccc caggacagac ggccaggatt 60

acctgtgggg gaaacaacat tggaagtaaa agtgtgcact ggtaccagca gaagccaggc 120

caggcccctg tgctggtcgt ctatggtgat agcgaccggc cctcagggat ccctgagcga 180

ttctctggct ccaactctgg gaccacggcc accctgacca tcagcagggt cgaagccggg 240

gatgaggccg actattactg tcaggtgtgg gatagtagta gtgatcatcc cggtgctgtg 300

ttcggaggag gcacccagct gaccgtcctc g 331

<210> 48
<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-030 VL PROTEIN

<400> 48

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

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

His Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Val Tyr
35 40 45

Gly Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

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

Asp Glu Ala Asp Tyr Tyr Cys Gln Val Trp Asp Ser Ser Ser Asp His
85 90 95

Pro Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 49
<211> 362
<212> DNA
<213> Artificial

<220>
<223> SC09-031 VH DNA

<400> 49
caggtccagc tggtacagtc tggggctgag gtcgagaggc ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggcgg cacctccaat aactatgcca tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagtctgac atctgaggac acggccgtct attattgtgc gagacacggg 300

aattattatt acaactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

ag 362

<210> 50
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-031 VH PROTEIN

<400> 50

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Asn Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 51
<211> 340
<212> DNA
<213> Artificial

<220>
<223> SC09-031 VL DNA

<400> 51
cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagctc caacatcggg gcaggttatg atgtacactg gtaccagcag 120

cttccagaaa cagccccaa actcctcatt tatgataaca acaatcgtcc ctcaggggtt 180

tctgaccgat tctctggctc caagtctggc acttcagcct ccctggccat cactgggctc 240

caggctgagg atgaggctga ttattactgc cagtcctatg acagcggcct gagtgcttcg 300

ccttatgtct tcggagctgg gaccaaggtc accgtcctag 340

<210> 52
<211> 113
<212> PRT
<213> Artificial

<220>
<223> SC09-031 VL PROTEIN

<400> 52

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

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ser Asn Ile Gly Ala Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Leu Pro Glu Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Asp Asn Asn Asn Arg Pro Ser Gly Val Ser Asp Arg Phe
50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Gly
85 90 95

Leu Ser Ala Ser Pro Tyr Val Phe Gly Ala Gly Thr Lys Val Thr Val
100 105 110

Leu

<210> 53
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-112 VH DNA

<400> 53
caggtgcagc tggtgcagtc tggggctgag gtcaagaagc ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaagt tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat attactgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 54
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-112 VH PROTEIN

<400> 54

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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Asp Trp Met

35 40 45

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 55
<211> 334
<212> DNA
<213> Artificial

<220>
<223> SC09-112 VL DNA

<400> 55
cagtctgtgt tgacgcagcc gccctcagtg tctggggccc cagggcagag ggtcaccatc 60

tcctgcactg ggagcagcgc caacatcggg gcaggttatg atgtccactg gtaccagcag 120

tttccaggaa cagcccccaa actcctcatc tatggtaaca acaatcggcc ctcaggggtc 180

cctgaccgat tctctggctc caagtctggc acctcagcct ccctggccat cactgggctc 240

caggctgagg atgaggctga ttattactgc cagtcctatg acagcagcct gagtggtgcg 300

ttattcggcg gagggaccaa gctgaccgtc ctag 334

<210> 56
<211> 111
<212> PRT
<213> Artificial

<220>
<223> SC09-112 VL PROTEIN

<400> 56

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

Arg Val Thr Ile Ser Cys Thr Gly Ser Ser Ala Asn Ile Gly Ala Gly
20 25 30

Tyr Asp Val His Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu
35 40 45

Leu Ile Tyr Gly Asn Asn Asn Arg Pro Ser Gly Val Pro Asp Arg Phe

50 55 60

Ser Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu
65 70 75 80

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Ser Ser
85 90 95

Leu Ser Gly Ala Leu Phe Gly Gly Gly Thr Lys Leu Thr Val Leu
100 105 110

<210> 57
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-113 VH DNA

<400> 57
cagatgcagc tggtgcagtc tggggctgag gtcaagaagg ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgagtg gatgggcggg atcagtccaa tctttggttc gacagtctac 180

gcacagaaat tccagggcag agtcactatt tccgcggaca tattttcaca cactgcctac 240

atggagctga acagcctgac atctgaggac acggccgcat atttctgtgc gaggcacgga 300

aactattatt actactccgg tatggacctc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 58
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-113 VH PROTEIN

<400> 58

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

Ser Val Lys Val Ser Cys Lys Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Val Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser His Thr Ala Tyr
65 70 75 80

Met Glu Leu Asn Ser Leu Thr Ser Glu Asp Thr Ala Ala Tyr Phe Cys
85 90 95

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Leu Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

<210> 59
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-113 VL DNA

<400> 59
cagtctgtgc tgactcagcc acccgcagtg tctgggaccc ccgggcagag ggtcaccatc 60

tcgtgttctg gaagtgattc caacatcggg agaagaagtg taaactggta ccagcagttc 120

ccaggaacgg cccccaaact cctcatctat agtaacgatc agcggccctc agtggtccct 180

gaccgattct ctggctccaa gtccggcacc tcagcctccc tggccatcag tgggctccag 240

gctgaggatg aggctgatta ttactgtgca gcatgggatg ccagcctgag tggtcctgtg 300

ttcggaggag gcacccagct gaccgtcctc g 331

<210> 60
<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-113 VL PROTEIN

<400> 60

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Asp Ser Asn Ile Gly Arg Arg
20 25 30

Ser Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Ser Asn Asp Gln Arg Pro Ser Val Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ala Ala Trp Asp Ala Ser Leu
85 90 95

Ser Gly Pro Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 61
<211> 363
<212> DNA
<213> Artificial

<220>
<223> SC09-114 VH DNA

<400> 61
caggtgcagc tggtgcaatc tggggctgag gtcaagaagc ctgggtcctc ggtgaaagtc 60

tcctgcaagt cttctggagg cacctccaat aactatgcta tcagctgggt gcgacaggcc 120

cctggacaag gccttgactg gatgggcggg atcagcccta tctttggttc gacagcctac 180

gcacagaaat tccagggcag agtcactatt tccgcggaca tattttcgaa cacagcctac 240

atggagctga acagcctgac atctgaggac acggccgtat atttctgtgc gaggcacggg 300

aattattatt actactccgg tatggacgtc tggggccaag ggaccacggt caccgtctcg 360

agc 363

<210> 62
<211> 121
<212> PRT
<213> Artificial

<220>
<223> SC09-114 VH PROTEIN

<400> 62

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 Ser Ser Gly Gly Thr Ser Asn Asn Tyr
20 25 30

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

Gly Gly Ile Ser Pro Ile Phe Gly Ser Thr Ala Tyr Ala Gln Lys Phe
50 55 60

Gln Gly Arg Val Thr Ile Ser Ala Asp Ile Phe Ser Asn Thr Ala Tyr
65 70 75 80

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

Ala Arg His Gly Asn Tyr Tyr Tyr Tyr Ser Gly Met Asp Val Trp Gly
100 105 110

Gln Gly Thr Thr Val Thr Val Ser Ser

115 120

<210> 63
<211> 331
<212> DNA
<213> Artificial

<220>
<223> SC09-114 VL DNA

<400> 63
tcctatgtgc tgactcagcc acccgcagtg tctgggaccc ccgggcagag ggtcaccatc 60

tcgtgttctg gaagtgattc caacatcggg agaagaagtg taaactggta ccagcagttc 120

ccaggaacgg cccccaaact cctcatctat agtaacgatc agcggccctc agtggtccct 180

gaccgattct ctggctccaa gtccggcacc tcagcctccc tggccatcag tgggctccag 240

tctgaagatg aggccgaata ttactgtgca gcatgggatg acagcctgaa gggggctgtg 300

ttcggaggag gcacccagct gaccgtcctc g 331

<210> 64
<211> 110
<212> PRT
<213> Artificial

<220>
<223> SC09-114 VL PROTEIN

<400> 64

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

Arg Val Thr Ile Ser Cys Ser Gly Ser Asp Ser Asn Ile Gly Arg Arg
20 25 30

Ser Val Asn Trp Tyr Gln Gln Phe Pro Gly Thr Ala Pro Lys Leu Leu
35 40 45

Ile Tyr Ser Asn Asp Gln Arg Pro Ser Val Val Pro Asp Arg Phe Ser
50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Ser Gly Leu Gln
65 70 75 80

Ser Glu Asp Glu Ala Glu Tyr Tyr Cys Ala Ala Trp Asp Asp Ser Leu
85 90 95

Lys Gly Ala Val Phe Gly Gly Gly Thr Gln Leu Thr Val Leu
100 105 110

<210> 65
<211> 23
<212> DNA
<213> Artificial

<220>
<223> OK1 (HuVK1B)

<400> 65
gacatccagw tgacccagtc tcc 23

<210> 66
<211> 23
<212> DNA
<213> Artificial

<220>
<223> OK2 (HuVK2)

<400> 66
gatgttgtga tgactcagtc tcc 23

<210> 67
<211> 23
<212> DNA
<213> Artificial

<220>
<223> OK3 (HuVK2B2)

<400> 67
gatattgtga tgacccagac tcc 23

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<400> 97
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<400> 121
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1 5

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1 5

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Ser Asn Asp
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Gly Asn Asn
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Asn Ile Gly Ser Lys Ser
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cgcgagcaaa atttaagcta caacaaggca aggcttgacc gacaattgca tgaagaatct 180

gcttagggtt aggcgttttg cgctgcttcg ctaggtggtc aatattggcc attagccata 240

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ccatatcata atatgtacat ttatattggc tcatgtccaa cattaccgcc atgttgacat 360

tgattattga ctagttatta atagtaatca attacggggt cattagttca tagcccatat 420

atggagttcc gcgttacata acttacggta aatggcccgc ctggctgacc gcccaacgac 480

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tatgcccagt acatgacctt atgggacttt cctacttggc agtacatcta cgtattagtc 720

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