

SEQUENCE LISTING

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SHANGHAI SHENGDI PHARMACEUTICAL CO., LTD

<120> ANTI-CD40 ANTIBODY, ANTIGEN-BINDING FRAGMENT AND MEDICAL USE THEREOF

<130> 722083CPCT

<150> CN202110722124.0

<151> 2021-06-28

<160> 100

<170> PatentIn version 3.5

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<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> VH

<400> 1

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

Leu Thr Leu Thr Cys Thr Ala Ser Arg Phe Ser Leu Ser Ser Tyr Asp
20 25 30

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

Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys Ser
50 55 60

Arg Ser Thr Ile Thr Arg Asn Thr Asn Leu Asn Thr Leu Thr Leu Lys
65 70 75 80

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

Gly Trp Thr Arg Leu Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val
100 105 110

Ser Ser

<210> 2
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<400> 2

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

Gly Gly Thr Val Thr Ile Asn Cys Gln Ser Ser Glu Asp Ile Ser Ser
20 25 30

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

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

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

Cys Ala Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Ser Gly
85 90 95

Ile Ser Asn Phe Gly Asn Gly Phe Gly Gly Gly Thr Glu Val Val Val
100 105 110

Lys

<210> 3
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<400> 3

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Asp
20 25 30

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

Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys Ser
50 55 60

Arg Ser Thr Ile Thr Arg Asn Thr Asn Leu Asn Thr Val Thr Leu Lys
65 70 75 80

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

Gly Trp Thr Arg Leu Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val
100 105 110

Ser Ser

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<400> 4

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

Gly Gly Thr Val Thr Ile Lys Cys Gln Ala Ser Glu Asp Ile Ser Ser
20 25 30

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

Ile Phe Pro Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys
50 55 60

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

Cys Ala Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Thr Ser
85 90 95

Thr Ser Asn Phe Gly Asn Gly Phe Gly Gly Gly Thr Glu Val Val Val
100 105 110

Lys

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<400> 5

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Asp
20 25 30

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

Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys Ser

50

55

60

Arg Ser Thr Ile Thr Arg Asn Thr Asn Leu Asn Thr Val Thr Leu Lys
 65 70 75 80

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

Gly Trp Thr Arg Leu Asp Leu Trp Gly Gln Gly Thr Leu Val Thr Val
 100 105 110

Ser Ser

<210> 6

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<400> 6

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

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

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

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

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

Cys Ala Asp Ala Ala Thr Tyr Tyr Cys Gln Gly Ala Tyr Trp Ser Ser
 85 90 95

Thr Ser Tyr Phe Gly Asn Gly Phe Gly Gly Gly Thr Gln Val Val Val
 100 105 110

Lys

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<400> 7

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

Leu Thr Leu Thr Cys Thr Val Ser Arg Phe Ser Leu Ser Ser Tyr Gly
 20 25 30

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

Ala Ile Gly Ser Thr Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
 50 55 60

Arg Ser Thr Ile Thr Arg Asp Thr Asn Leu Asn Thr Val Thr Leu Lys
 65 70 75 80

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

Gly Gly Ile Thr Ala Tyr Ala Ile Trp Gly Pro Gly Thr Leu Val Thr
 100 105 110

Val Ser Ser
 115

<210> 8

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<400> 8

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

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

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

Ala Gly Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys Gly
50 55 60

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

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

Thr Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

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<400> 9

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Asn Ser Tyr Gly
 20 25 30

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

Ala Ile Gly Ser Ser Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Arg Ser
 50 55 60

Arg Ser Thr Ile Thr Arg Asp Thr Asn Leu Asn Thr Val Thr Leu Lys
 65 70 75 80

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

Gly Gly Ile Thr Val Tyr Ala Ile Trp Gly Pro Gly Thr Leu Val Thr
 100 105 110

Val Ser Ser
 115

<210> 10
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<400> 10

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

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

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

Ala Gly Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys Gly
 50 55 60

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

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

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

<210> 11
<211> 115
<212> PRT
<213> Artificial Sequence

<220>
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<400> 11

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Gly
20 25 30

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

Gly Ile Ala Ser Thr Gly Thr Thr Tyr Tyr Ala Asn Trp Ala Lys Ser
50 55 60

Arg Ser Thr Ile Thr Arg Asp Thr Asn Leu Lys Thr Val Thr Leu Lys
65 70 75 80

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

Gly Gly Ile Thr Ala Tyr Ala Ile Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 12
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<400> 12

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

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

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

Ala Gly Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys Gly
50 55 60

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

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

Thr Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

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<400> 13

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Gly
 20 25 30

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

Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
 50 55 60

Arg Ala Thr Ile Thr Arg Asp Thr Asn Leu Lys Thr Val Thr Leu Glu
 65 70 75 80

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

Gly Gly Ile Thr Val Tyr Ala Ile Trp Gly Pro Gly Thr Leu Val Thr
 100 105 110

Val Ser Ser
 115

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<400> 14

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

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

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Val Leu Ile

35

40

45

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys Gly
 50 55 60

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

Ala Asp Gly Ala Thr Tyr Tyr Cys Gln Ser Tyr Phe Ser Ser Ser Ser
 85 90 95

Thr Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
 100 105

<210> 15

<211> 115

<212> PRT

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<400> 15

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Gly
 20 25 30

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

Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
 50 55 60

Arg Ala Thr Ile Thr Arg Asp Thr Asn Leu Lys Thr Val Thr Leu Glu
 65 70 75 80

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

Gly Gly Ile Thr Val Tyr Ala Ile Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

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<400> 16

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

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

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys Gly
50 55 60

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

Ala Asp Gly Ala Thr Tyr Tyr Cys Gln Ser Tyr Phe Ser Ser Ser Ser
85 90 95

Thr Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 17
<211> 115
<212> PRT
<213> Artificial Sequence

<220>

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<400> 17

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Gly
20 25 30

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

Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
50 55 60

Arg Ala Thr Ile Thr Arg Asp Thr Asn Leu Lys Thr Val Thr Leu Glu
65 70 75 80

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

Gly Gly Ile Thr Val Tyr Ala Met Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 18

<211> 108

<212> PRT

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<220>

<223> VL

<400> 18

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

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

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Ser Ser Arg Phe Lys Gly
50 55 60

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

Ala Asp Gly Ala Thr Tyr Tyr Cys Gln Ser Tyr Phe Ser Ser Ser Ser
85 90 95

Thr Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105

<210> 19
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<400> 19

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

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

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

Ala Ile Asp Arg Tyr Gly Thr Thr Tyr Tyr Ala Thr Trp Ala Lys Ser
50 55 60

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

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

Gly Pro Trp Tyr Tyr Gly Gly Asp Val Ala Trp Thr Gly Ser Phe Asp
100 105 110

Pro Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 20
<211> 110
<212> PRT
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<400> 20

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

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

Asp Phe Leu Ser Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu
35 40 45

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

Arg Gly Asn Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Thr Gly Met
65 70 75 80

Gln Cys Asp Asp Ala Ala Thr Tyr Phe Cys Thr Gly Gly Tyr Ala Gly
85 90 95

Pro Ile Tyr Ile Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 21
 <211> 123
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 21

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

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

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

Gly Ile Gly Ser Ser Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
 50 55 60

Arg Ser Thr Ile Thr Arg Asp Thr Asn Leu Asn Thr Val Thr Leu Lys
 65 70 75 80

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

Asp Gly Tyr Ala Gly Ser Ser Trp Gly Ile Tyr Tyr Gly Met Asp Pro
 100 105 110

Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 22
 <211> 110
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<220>
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<400> 22

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

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

Ile Ser Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro Thr Leu Leu Ile
 35 40 45

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

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Gly Gly Val Gln Ala
 65 70 75 80

Glu Asp Ala Ala Thr Tyr Tyr Cys Leu Gly Gly His Ser Tyr Ser Ser
 85 90 95

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

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<400> 23

Ser Tyr Asp Met Ser
 1 5

<210> 24
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<220>
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<400> 24

Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys Ser
1 5 10 15

<210> 25

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 25

Gly Trp Thr Arg Leu Asp Leu
1 5

<210> 26

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 26

Gln Ser Ser Glu Asp Ile Ser Ser Asn Leu Ser
1 5 10

<210> 27

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

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<400> 27

Ala Ala Ser Asn Leu Ala Ser
1 5

<210> 28

<211> 14

<212> PRT
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<400> 28

Gln Gly Gly Tyr Trp Ser Gly Ile Ser Asn Phe Gly Asn Gly
1 5 10

<210> 29
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 29

Gln Ala Ser Glu Asp Ile Ser Ser Asn Leu Ala
1 5 10

<210> 30
<211> 7
<212> PRT
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<220>
<223> CDR

<400> 30

Pro Ala Ser Asn Leu Ala Ser
1 5

<210> 31
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 31

Gln Gly Gly Tyr Trp Thr Ser Thr Ser Asn Phe Gly Asn Gly
1 5 10

<210> 32
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 32

Gln Gly Ala Tyr Trp Ser Ser Thr Ser Tyr Phe Gly Asn Gly
1 5 10

<210> 33
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 33

Ser Tyr Gly Val Thr
1 5

<210> 34
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 34

Ala Ile Gly Ser Thr Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
1 5 10 15

<210> 35
<211> 8
<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 35

Gly Gly Ile Thr Ala Tyr Ala Ile
1 5

<210> 36

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 36

Gln Ala Ser Gln Ser Ile Ser Asn Gly Leu Ala
1 5 10

<210> 37

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 37

Gly Ala Ser Asn Leu Ala Ser
1 5

<210> 38

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR

<400> 38

Gln Ser Tyr Tyr Asn Ser Phe Thr Thr Val
1 5 10

<210> 39
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 39

Ser Tyr Gly Val Ser
1 5

<210> 40
<211> 16
<212> PRT
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<220>
<223> CDR

<400> 40

Ala Ile Gly Ser Ser Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Arg Ser
1 5 10 15

<210> 41
<211> 8
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<400> 41

Gly Gly Ile Thr Val Tyr Ala Ile
1 5

<210> 42
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
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<400> 42

Gln Ala Ser Glu Asp Ile Thr Asn Gly Ile Ala
1 5 10

<210> 43
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 43

Gln Ser Tyr Tyr Ser Ser Ser Tyr Thr Ile
1 5 10

<210> 44
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 44

Gly Ile Ala Ser Thr Gly Thr Thr Tyr Tyr Ala Asn Trp Ala Lys Ser
1 5 10 15

<210> 45
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 45

Gln Ala Ser Gln Ser Ile Thr Asn Gly Leu Ala

1 5 10

<210> 46
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
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<400> 46

Gln Ser Tyr Tyr Asp Ser Ser Ser Thr Val
1 5 10

<210> 47
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 47

Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
1 5 10 15

<210> 48
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 48

Gln Ser Tyr Phe Ser Ser Ser Ser Thr Val
1 5 10

<210> 49
<211> 8
<212> PRT
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<220>
<223> CDR

<400> 49

Gly Gly Ile Thr Val Tyr Ala Met
1 5

<210> 50
<211> 7
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<220>
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<400> 50

Gly Ala Ser Asn Leu Ala Ser
1 5

<210> 51
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 51

Ser Tyr Ala Ile Ser
1 5

<210> 52
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 52

Ala Ile Asp Arg Tyr Gly Thr Thr Tyr Tyr Ala Thr Trp Ala Lys Ser
1 5 10 15

<210> 53
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 53

Gly Pro Trp Tyr Tyr Gly Gly Asp Val Ala Trp Thr Gly Ser Phe Asp
1 5 10 15

Pro

<210> 54
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<212> PRT
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<223> CDR

<400> 54

Gln Ser Ser Gln Ser Val Ala Asn Asn Asp Phe Leu Ser
1 5 10

<210> 55
<211> 7
<212> PRT
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<220>
<223> CDR

<400> 55

Gly Ala Ser Thr Leu Ala Ser
1 5

<210> 56
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<212> PRT
<213> Artificial Sequence

<220>
<223> CDR

<400> 56

Thr Gly Gly Tyr Ala Gly Pro Ile Tyr Ile
1 5 10

<210> 57
<211> 5
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<220>
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<400> 57

Arg Asn Ala Ile Ser
1 5

<210> 58
<211> 16
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<220>
<223> CDR

<400> 58

Gly Ile Gly Ser Ser Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys Ser
1 5 10 15

<210> 59
<211> 16
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<400> 59

Asp Gly Tyr Ala Gly Ser Ser Trp Gly Ile Tyr Tyr Gly Met Asp Pro
1 5 10 15

<210> 60
<211> 11
<212> PRT
<213> Artificial Sequence

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<400> 60

Leu Ala Ser Glu Asp Ile Tyr Arg Gly Ile Ser
1 5 10

<210> 61
<211> 7
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<220>
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<400> 61

Gly Ala Ser Thr Leu Gln Ser
1 5

<210> 62
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<400> 62

Leu Gly Gly His Ser Tyr Ser Ser Ala Gly Leu Thr
1 5 10

<210> 63
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<400> 63

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

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Asp Ile Ser Ser Asn
20 25 30

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

Phe Pro Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Thr Ser Thr
85 90 95

Ser Asn Phe Gly Asn Val Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 64

<211> 112

<212> PRT

<213> Artificial Sequence

<220>

<223> 9E6-L2

<400> 64

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

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Asp Ile Ser Ser Asn
20 25 30

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

Phe Pro Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Thr Ser Thr
85 90 95

Ser Asn Phe Gly Ser Gly Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 65
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> 9E6-L3

<400> 65

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

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Asp Ile Ser Ser Asn
20 25 30

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

Phe Pro Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Thr Ser Thr
85 90 95

Ser Asn Phe Gly Thr Gly Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 66
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> 9E6-L4

<400> 66

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

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Asp Ile Ser Ser Asn
20 25 30

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

Phe Pro Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Thr Ser Thr
85 90 95

Ser Asn Phe Gly Gln Gly Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

<210> 67
<211> 115
<212> PRT
<213> Artificial Sequence

<220>

<223> 9E6-H1

<400> 67

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr
20 25 30

Asp Met Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Leu Asn Gln Val Ser Leu
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Gly Trp Thr Arg Leu Asp Leu Trp Gly Gln Gly Thr Leu Val Thr
100 105 110

Val Ser Ser
115

<210> 68

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> 9E6-H2

<400> 68

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr

20

25

30

Asp Met Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45

Gly Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Leu Asn Gln Val Ser Leu
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

Arg Gly Trp Thr Arg Leu Asp Leu Trp Gly Gln Gly Thr Leu Val Thr
 100 105 110

Val Ser Ser
 115

<210> 69
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR3 of 9E6-L1

<400> 69

Gln Gly Gly Tyr Trp Thr Ser Thr Ser Asn Phe Gly Asn Val
 1 5 10

<210> 70
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR3 of 9E6-L2

<400> 70

Gln Gly Gly Tyr Trp Thr Ser Thr Ser Asn Phe Gly Ser Gly
1 5 10

<210> 71
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR3 of 9E6-L3

<400> 71

Gln Gly Gly Tyr Trp Thr Ser Thr Ser Asn Phe Gly Thr Gly
1 5 10

<210> 72
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR3 of 9E6-L4

<400> 72

Gln Gly Gly Tyr Trp Thr Ser Thr Ser Asn Phe Gly Gln Gly
1 5 10

<210> 73
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> General formula for LCDR3s of 9E6-Ls

<220>
<221> misc_feature
<222> (13)..(14)
<223> Xaa can be any naturally occurring amino acid

<400> 73

Gln Gly Gly Tyr Trp Thr Ser Thr Ser Asn Phe Gly Xaa Xaa
1 5 10

<210> 74
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR1

<220>
<221> misc_feature
<222> (2)..(2)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (11)..(11)
<223> Xaa can be any naturally occurring amino acid

<400> 74

Gln Xaa Ser Glu Asp Ile Ser Ser Asn Leu Xaa
1 5 10

<210> 75
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR2

<220>
<221> misc_feature
<222> (1)..(1)
<223> Xaa can be any naturally occurring amino acid

<400> 75

Xaa Ala Ser Asn Leu Ala Ser
1 5

<210> 76
<211> 14
<212> PRT
<213> Artificial Sequence

<220>

<223> LCDR3

<220>

<221> misc_feature

<222> (3)..(3)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc_feature

<222> (6)..(8)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc_feature

<222> (10)..(10)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc_feature

<222> (13)..(14)

<223> Xaa can be any naturally occurring amino acid

<400> 76

Gln Gly Xaa Tyr Trp Xaa Xaa Xaa Ser Xaa Phe Gly Xaa Xaa
1 5 10

<210> 77

<211> 108

<212> PRT

<213> Artificial Sequence

<220>

<223> 2F12-L1

<400> 77

Ala Phe 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 Gln Ala Ser Gln Ser Ile Ser Asn Val
20 25 30

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 78
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> 2F12-L2

<400> 78

Ala Phe 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 Gln Ala Ser Gln Ser Ile Ser Gln Gly
20 25 30

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 79
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> 2F12-L3

<400> 79

Ala Phe 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 Gln Ala Ser Gln Ser Ile Ser Ser Gly
20 25 30

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 80
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> 2F12-L4

<400> 80

Ala Phe 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 Gln Ala Ser Gln Ser Ile Ser Thr Gly
20 25 30

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

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

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

<210> 81
<211> 116
<212> PRT
<213> Artificial Sequence

<220>
<223> 2F12-H1

<400> 81

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

Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr
20 25 30

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

Ala Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys
50 55 60

Ser Arg Leu Thr Ile Ser Arg Asp Thr Asn Leu Lys Gln Val Val Leu

65		70		75		80
Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala						
		85		90		95
Arg Gly Gly Ile Thr Val Tyr Ala Met Trp Gly Gln Gly Thr Leu Val						
		100		105		110
Thr Val Ser Ser						
		115				
<210> 82						
<211> 116						
<212> PRT						
<213> Artificial Sequence						
<220>						
<223> 2F12-H2						
<400> 82						
Glu Val Thr Val Lys Glu Ser Gly Pro Val Leu Val Lys Pro Thr Glu						
1		5		10		15
Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr						
		20		25		30
Gly Val Ser Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu Trp Leu						
		35		40		45
Gly Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys						
		50		55		60
Ser Arg Leu Thr Ile Ser Arg Asp Thr Asn Leu Lys Gln Val Val Leu						
65		70		75		80
Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala						
		85		90		95
Arg Gly Gly Ile Thr Val Tyr Ala Met Trp Gly Gln Gly Thr Leu Val						
		100		105		110

Thr Val Ser Ser
115

<210> 83
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR1 of 2F12-L1

<400> 83

Gln Ala Ser Gln Ser Ile Ser Asn Val Leu Ala
1 5 10

<210> 84
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR1 of 2F12-L2

<400> 84

Gln Ala Ser Gln Ser Ile Ser Gln Gly Leu Ala
1 5 10

<210> 85
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR1 of 2F12-L3

<400> 85

Gln Ala Ser Gln Ser Ile Ser Ser Gly Leu Ala
1 5 10

<210> 86
<211> 11
<212> PRT

<213> Artificial Sequence

<220>

<223> LCDR1 of 2F12-L4

<400> 86

Gln Ala Ser Gln Ser Ile Ser Thr Gly Leu Ala
1 5 10

<210> 87

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> General formula for LCDR1s of 2F12-Ls

<220>

<221> misc_feature

<222> (8)..(9)

<223> Xaa can be any naturally occurring amino acid

<400> 87

Gln Ala Ser Gln Ser Ile Ser Xaa Xaa Leu Ala
1 5 10

<210> 88

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR1

<220>

<221> misc_feature

<222> (5)..(5)

<223> Xaa can be any naturally occurring amino acid

<400> 88

Ser Tyr Gly Val Xaa
1 5

<210> 89

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

<220>
<223> HCDR2

<220>
<221> misc_feature
<222> (1)..(1)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (3)..(3)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (5)..(5)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (7)..(8)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (12)..(12)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (15)..(15)
<223> Xaa can be any naturally occurring amino acid

<400> 89

Xaa	Ile	Xaa	Ser	Xaa	Gly	Xaa	Xaa	Tyr	Tyr	Ala	Xaa	Trp	Ala	Xaa	Ser
1			5					10						15	

<210> 90
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> HCDR3

<220>
<221> misc_feature
<222> (5)..(5)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (8)..(8)
<223> Xaa can be any naturally occurring amino acid

<400> 90

Gly Gly Ile Thr Xaa Tyr Ala Xaa
1 5

<210> 91
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> LCDR1

<220>
<221> misc_feature
<222> (4)..(5)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> misc_feature
<222> (7)..(9)
<223> Xaa can be any naturally occurring amino acid

<400> 91

Gln Ala Ser Xaa Xaa Ile Xaa Xaa Xaa Leu Ala
1 5 10

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

<220>
<223> LCDR2

<220>
 <221> misc_feature
 <222> (4)..(5)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (7)..(8)
 <223> Xaa can be any naturally occurring amino acid

<220>
 <221> misc_feature
 <222> (10)..(10)
 <223> Xaa can be any naturally occurring amino acid

<400> 92

Gln Ser Tyr Xaa Xaa Ser Xaa Xaa Thr Xaa
 1 5 10

<210> 93
 <211> 445
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 9E6-L4H2 HC

<400> 93

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr
 20 25 30

Asp Met Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45

Gly Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys
 50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Leu Asn Gln Val Ser Leu
 65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala

85

90

95

Arg Gly Trp Thr Arg Leu Asp Leu 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 Ala 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 Glu Glu Met 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> 94
 <211> 219
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 9E6-L4H2 LC

<400> 94

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

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Glu Asp Ile Ser Ser Asn
20 25 30

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

Phe Pro Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

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

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gly Gly Tyr Trp Thr Ser Thr
85 90 95

Ser Asn Phe Gly Gln Gly Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
115 120 125

Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe
130 135 140

Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln
145 150 155 160

Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser
165 170 175

Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu
180 185 190

Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser
195 200 205

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 95

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

<220>
<223> 2F12-L4H2 HC

<400> 95

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

Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr
20 25 30

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

Gly Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys
50 55 60

Ser Arg Leu Thr Ile Ser Arg Asp Thr Asn Leu Lys Gln Val Val Leu
65 70 75 80

Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala
85 90 95

Arg Gly Gly Ile Thr Val Tyr Ala Met Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
115 120 125

Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu
130 135 140

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
145 150 155 160

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
165 170 175

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu
180 185 190

Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr
195 200 205

Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
210 215 220

Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe
225 230 235 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
245 250 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
260 265 270

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
275 280 285

Lys Pro Arg Glu Glu Gln Tyr Ala Ser Thr Tyr Arg Val Val Ser Val
290 295 300

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305 310 315 320

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
325 330 335

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
340 345 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
355 360 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
370 375 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
 385 390 395 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
 405 410 415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 420 425 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 435 440 445

<210> 96
 <211> 215
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 2F12-L4H2 LC

<400> 96

Ala Phe 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 Gln Ala Ser Gln Ser Ile Ser Thr Gly
 20 25 30

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

Val Gly Ala Ser Asn Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

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

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

Thr Val Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala
 100 105 110

Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
115 120 125

Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
130 135 140

Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
145 150 155 160

Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
165 170 175

Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
180 185 190

Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
195 200 205

Ser Phe Asn Arg Gly Glu Cys
210 215

<210> 97
<211> 445
<212> PRT
<213> Artificial Sequence

<220>
<223> 9E6-L4H2-AAYTE HC

<400> 97

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr
20 25 30

Asp Met Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Ala Ile Gly Gly Ala Gly Gly Thr Tyr Tyr Ala Ser Trp Ala Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Leu Asn Gln Val Ser Leu
65 70 75 80

Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
85 90 95

Arg Gly Trp Thr Arg Leu Asp Leu 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 Ala Ala Gly Gly Pro Ser Val Phe Leu
225 230 235 240

Phe Pro Pro Lys Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu 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 Glu Glu Met 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> 98

<211> 446

<212> PRT

<213> Artificial Sequence

<220>

<223> 2F12-L4H2-AAYTE HC

<400> 98

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

Thr Leu Thr Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr
20 25 30

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

Gly Gly Ile Gly Ser Asp Gly Ser Ala Tyr Tyr Ala Ser Trp Ala Lys
50 55 60

Ser Arg Leu Thr Ile Ser Arg Asp Thr Asn Leu Lys Gln Val Val Leu
65 70 75 80

Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr Cys Ala
85 90 95

Arg Gly Gly Ile Thr Val Tyr Ala Met Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala
115 120 125

Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu
130 135 140

Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly
145 150 155 160

Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser
165 170 175

Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu
180 185 190

Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr
195 200 205

Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr
210 215 220

Cys Pro Pro Cys Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe
225 230 235 240

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro
245 250 255

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
260 265 270

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
275 280 285

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
290 295 300

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
305 310 315 320

Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
325 330 335

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
340 345 350

Ser Arg Glu Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
355 360 365

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
370 375 380

Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
385 390 395 400

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp

405

410

415

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
 420 425 430

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
 435 440 445

<210> 99

<211> 330

<212> PRT

<213> Artificial Sequence

<220>

<223> IgG1-Fc(N297A)

<400> 99

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
 65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
 85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
 100 105 110

Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
 115 120 125

Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
165 170 175

Glu Gln Tyr Ala Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330

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

<220>
 <223> IgG1-Fc(AAYTE)

<400> 100

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys
 1 5 10 15

Ser Thr Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 20 25 30

Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 35 40 45

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

Leu Ser Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr
 65 70 75 80

Tyr Ile Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys
 85 90 95

Lys Val Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys
 100 105 110

Pro Ala Pro Glu Ala Ala Gly Gly Pro Ser Val Phe Leu Phe Pro Pro
 115 120 125

Lys Pro Lys Asp Thr Leu Tyr Ile Thr Arg Glu Pro Glu Val Thr Cys
 130 135 140

Val Val Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp
 145 150 155 160

Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu
 165 170 175

Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu
180 185 190

His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn
195 200 205

Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly
210 215 220

Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu
225 230 235 240

Met Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr
245 250 255

Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn
260 265 270

Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe
275 280 285

Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn
290 295 300

Val Phe Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr
305 310 315 320

Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
325 330