

eolf-seql
SEQUENCE LISTING

<110> F. Hoffmann-La Roche AG

<120> ANTI-TRANSFERRIN RECEPTOR ANTIBODIES WITH TAILORED AFFINITY

<130> P32937

<150> EP15173508.1

<151> 2015-06-24

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<151> 2015-07-09

<160> 97

<170> PatentIn version 3.5

<210> 1

<211> 122

<212> PRT

<213> Oryctolagus cuniculus

<400> 1

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

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

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

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

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

Ser Pro Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Arg Tyr
85 90 95

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

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

<210> 2
 <211> 122
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> anti-TfR mAb 567 VH (=humanized 299 VH_basic)

<400> 2

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

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

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

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

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

Ser Pro Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Arg Tyr
 85 90 95

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

Gly Pro Gly Thr Leu Val Thr Val Ser Ser

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115

120

<210> 3
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-001 VH humanization variant

<400> 3

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

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala
 20 25 30

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
 100 105 110

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

<210> 4
 <211> 125
 <212> PRT

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<213> Artificial Sequence

<220>

<223> 299-002 VH humanization variant

<400> 4

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr
20 25 30

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

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

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu
65 70 75 80

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

Arg Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe
100 105 110

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 5

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-005 VH humanization variant

<400> 5

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

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala
20 25 30

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 6
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-006 VH humanization variant

<400> 6

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

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala

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25

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 7

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-007 VH humanization variant_DANG

<400> 7

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

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala
20 25 30

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 8

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-008 VH humanization variant

<400> 8

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

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala
20 25 30

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

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

Arg Phe Thr Ile Ser Lys Thr Ser Thr Thr Leu Tyr Leu Gln Met Asn

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65	70	75	80
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Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg Arg Tyr
 85 90 95

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

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 9
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-009 VH humanization variant_DANG

<400> 9

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

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

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

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

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

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

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Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
 100 105 110

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

<210> 10
 <211> 124
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-009 VH humanization variant_DASG

<400> 10

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

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

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Ser Gly Phe Asp
 100 105 110

Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser

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115

120

<210> 11
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 <213> Artificial Sequence

<220>
 <223> 299-009 VH humanization variant_DAQG

<400> 11

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

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

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Gln Gly Phe Asp
 100 105 110

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

<210> 12
 <211> 124
 <212> PRT

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<213> Artificial Sequence

<220>

<223> 299-011 VH humanization variant

<400> 12

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

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Ser Leu Ser Ser Tyr Ala
20 25 30

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 13

<211> 125

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-012 VH humanization variant

<400> 13

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

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

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

Gly Tyr Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe 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 Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe
100 105 110

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 14
<211> 125
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-013 VH humanization variant

<400> 14

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

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

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

Gly Tyr Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Pro Ser Leu Lys
50 55 60

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys 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 Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe
100 105 110

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120 125

<210> 15

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-015 VH humanization variant

<400> 15

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

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

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

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Tyr Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Pro Ser Leu Lys Ser
50 55 60

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 16
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-016 VH humanization variant

<400> 16

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

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

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

Tyr Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Pro Ser Leu Lys Ser
50 55 60

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

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 65 70 75 80
 Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 85 90 95
 Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
 100 105 110
 Pro Trp Gly Pro Gly Thr Leu Val Thr Val Ser Ser
 115 120
 <210> 17
 <211> 124
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> 299-017 VH humanization variant
 <400> 17
 Gln Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu Thr
 1 5 10 15
 Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Ala
 20 25 30
 Met Ser Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly
 35 40 45
 Tyr Ile Trp Ser Gly Gly Ser Thr Asp Tyr Asn Pro Ser Leu Lys Ser
 50 55 60
 Arg Val Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val Ser Leu Lys
 65 70 75 80
 Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 85 90 95

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Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
 100 105 110

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

<210> 18
 <211> 125
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-018 VH humanization variant

<400> 18

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

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

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

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

Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe 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 Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe
 100 105 110

Asp Pro Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser

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115

120

125

<210> 19

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-019 VH humanization variant

<400> 19

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

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

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 20

<211> 124

<212> PRT

eolf-seql

<213> Artificial Sequence

<220>

<223> 299-020 VH humanization variant

<400> 20

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

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

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 21

<211> 124

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-021 VH humanization variant

<400> 21

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

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

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 22
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-022 VH humanization variant

<400> 22

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

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

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20

25

30

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

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

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

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

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp
100 105 110

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

<210> 23

<211> 122

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-023 VH humanization variant_DANG

<400> 23

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

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

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

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

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

Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Arg Tyr
85 90 95

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

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 24
<211> 122
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-023 VH humanization variant_DASG

<400> 24

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

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

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

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

Arg Val Thr Ile Ser Lys Thr Ser Thr Thr Val Ser Leu Lys Leu Ser

65		70		eolf-seql		80
			75			
Ser Val Thr Ala	Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Arg Tyr					
	85		90			95
Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Ser Gly Phe Asp Pro Trp						
	100		105			110
Gly Gln Gly Thr Leu Val Thr Val Ser Ser						
	115		120			
<210> 25						
<211> 122						
<212> PRT						
<213> Artificial Sequence						
<220>						
<223> 299-023 VH humanization variant_DAGG						
<400> 25						
Gln Ser Met Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln Thr						
1	5		10			15
Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Ser Leu Ser Ser Tyr Ala						
	20		25			30
Met Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly						
	35		40			45
Tyr Ile Trp Ser Gly Gly Ser Thr Asp Tyr Ala Ser Trp Ala Lys Ser						
	50		55			60
Arg Val Thr Ile Ser Lys Thr Ser Thr Thr Val Ser Leu Lys Leu Ser						
65	70		75			80
Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Arg Tyr						
	85		90			95

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

Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 26
 <211> 110
 <212> PRT
 <213> Oryctolagus cuniculus

<400> 26

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

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

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

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

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

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

Val Asp Asn Thr Phe Gly Gly Gly Thr Glu Val Val Val Lys
 100 105 110

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

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<220>

<223> anti-TfR mAb 567 VL (=humanized 299 VL_basic)

<400> 27

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

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

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

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

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

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

Val Asp Asn Thr Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 28

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 567 VL humanization variant_PNYA

<400> 28

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

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

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

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

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

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

Val Asp Asn Thr Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 29

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-001 VL humanization variant

<400> 29

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

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

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

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

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

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

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

<210> 30
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<212> PRT
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<220>
<223> 299-002 VL humanization variant_SYS

<400> 30

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

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

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

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

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

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

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

<210> 31
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-003 VL humanization variant

<400> 31

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

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

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

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

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

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

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

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

<220>

eolf-seql

<223> 299-004 VL humanization variant

<400> 32

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

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

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

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

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

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

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

<210> 33

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-005 VL humanization variant

<400> 33

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

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

eolf-seql

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

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

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

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

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

<210> 34
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-006 VL humanization variant_SYS

<400> 34

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

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

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

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

eolf-seql

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

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

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

<210> 35

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-007 VL humanization variant

<400> 35

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

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

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

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

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

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

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

eolf-seql

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

<220>
 <223> 299-008 VL humanization variant

<400> 36

Ala Tyr 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 Arg Ala Ser Gln Ser Ile Ser Ser Tyr
 20 25 30

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

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

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

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

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

<210> 37
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-009 VL humanization variant_NYA

eolf-seql

<400> 37

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

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

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

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

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

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

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

<210> 38

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-009 VL humanization variant_SYA

<400> 38

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

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

eolf-seq1

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

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

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

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

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

<210> 39

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-009 VL humanization variant_NYS

<400> 39

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

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

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

Tyr Arg Ala Ser Thr 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

eolf-seql

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

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

<210> 40
<211> 110
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-009 VL humanization variant_GYS

<400> 40

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

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

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

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

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

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

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

eolf-seql

<210> 41
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-009 VL humanization variant_CYS

<400> 41

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

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

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

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

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

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

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

<210> 42
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-010 VL humanization variant

<400> 42

eolf-seql

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

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

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

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

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

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

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

<210> 43

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-012 VL humanization variant_HYS

<400> 43

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

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

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

eolf-seql

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

Ser Arg 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 His Tyr Ser Ser Ser Asn
85 90 95

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

<210> 44

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-014 VL humanization variant

<400> 44

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

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Ile Ser Ser Tyr
20 25 30

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

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

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

eolf-seql

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

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

<210> 45

<211> 110

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-015 VL humanization variant_AYS

<400> 45

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

Glu Arg Ala Thr Ile Asn Cys Lys Ser Ser Gln Ser Ile Ser Ser Tyr
20 25 30

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

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

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

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

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

<210> 46

<211> 110

eolf-seql

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-017 VL humanization variant_TYS

<400> 46

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

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

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

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

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

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

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

<210> 47

<211> 119

<212> PRT

<213> Mus musculus

<400> 47

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

Ser Val Lys Leu Ser Cys Pro Ala Ser Gly Phe Asn Ile Lys Asp Thr

eolf-seql

20

25

30

Tyr Ile His Trp Val Ile Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45

Gly Arg Ile Asp Pro Ala Asn Gly Asp Thr Lys Cys Asp Pro Lys Phe
50 55 60

Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80

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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser
115

<210> 48

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> 494 VH variant D52A

<400> 48

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

Ser Val Lys Leu Ser Cys Pro Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Ile Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45

eolf-seql

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

Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80

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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
100 105 110

Thr Thr Leu Thr Val Ser Ser
115

<210> 49
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> 494 VH variant D52L

<400> 49

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

Ser Val Lys Leu Ser Cys Pro Ala Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Ile Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
35 40 45

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

Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr

eolf-seql

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
 100 105 110

Thr Thr Leu Thr Val Ser Ser
 115

<210> 51
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 494 VH variant L101A

<400> 51

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

Ser Val Lys Leu Ser Cys Pro Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30

Tyr Ile His Trp Val Ile Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45

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

Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80

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

Val Arg Asp Tyr Ala Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
 100 105 110

Thr Thr Leu Thr Val Ser Ser

eolf-seql

115

<210> 52
 <211> 119
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 494-001 VH humanization variant

<400> 52

Gln 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 Phe Asn Ile Lys Asp Thr
 20 25 30

Tyr Ile His Trp Val Ile Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35 40 45

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

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

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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
 100 105 110

Thr Thr Val Thr Val Ser Ser
 115

<210> 53
 <211> 119
 <212> PRT

eolf-seql

<213> Artificial Sequence

<220>

<223> 494-002 VH humanization variant

<400> 53

Gln 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 Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Ile Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

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

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

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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 54

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> 494-003 VH humanization variant

<400> 54

eolf-seql

Gln 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 Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Ile Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

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

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

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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 55
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> 494-004 VH humanization variant

<400> 55

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Thr

eolf-seql

20

25

30

Tyr Ile His Trp Val Ile Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

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

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 56

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> 494-005 VH humanization variant

<400> 56

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

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

Tyr Ile His Trp Val Ile Gln Arg Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

eolf-seql

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

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu 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

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
100 105 110

Thr Thr Val Thr Val Ser Ser
115

<210> 57

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> 494-006 VH humanization variant

<400> 57

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

Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile Lys Asp Thr
20 25 30

Tyr Ile His Trp Val Ile Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile
35 40 45

Gly Arg Ile Asp Pro Ala Asn Gly Asp Thr Lys Ser Asp Pro Ser Leu
50 55 60

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

eolf-seql

Val Arg Asp Tyr Leu Tyr Pro Tyr Tyr Phe Asp Phe Trp Gly Gln Gly
 100 105 110

Thr Thr Val Thr Val Ser Ser
 115

<210> 59
 <211> 107
 <212> PRT
 <213> Mus musculus

<400> 59

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

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

Val Ser Trp Tyr Gln Gln Lys Pro Glu Gln Ser Pro Glu Leu Leu Ile
 35 40 45

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

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

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

Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
 100 105

<210> 60
 <211> 107
 <212> PRT
 <213> Artificial Sequence

eolf-seql

<220>

<223> 494-001 VL humanization variant

<400> 60

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

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

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

Tyr Gly Ala Ser Asn Arg Tyr Thr 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 Asp Tyr Tyr Cys Gly Gln Thr Tyr Asn Tyr Pro Leu
85 90 95

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

<210> 61

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> 494-002 VL humanization variant

<400> 61

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

eolf-seql

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

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

Tyr Gly Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Ser 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 Asp Tyr Tyr Cys Gly Gln Thr Tyr Asn Tyr Pro Leu
85 90 95

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

<210> 62

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> 494-003 VL humanization variant

<400> 62

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

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

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

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

eolf-seql

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

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

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

<210> 63

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> 494-004 VL humanization variant

<400> 63

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

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

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

Tyr Gly Ala Ser Asn Arg Tyr Thr Gly Ile Pro Asp Arg Phe Ser 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 Asp Tyr Tyr Cys Gly Gln Thr Tyr Asn Tyr Pro Leu
85 90 95

eolf-seql

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

<210> 64
<211> 118
<212> PRT
<213> Mus musculus

<400> 64

Gln 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 Thr Phe Thr Gly Tyr
20 25 30

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

Gly Arg Ile Asn Pro His Asn Gly Gly Thr Asp Tyr Ala Gln Lys Phe
50 55 60

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

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

Ala Arg Gly Tyr Tyr Tyr Tyr Ser Leu Asp Tyr Trp Gly Gln Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 65
<211> 106
<212> PRT
<213> Mus musculus

eolf-seql

<400> 65

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

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

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

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

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

Asp Phe Ala Thr Tyr Tyr Cys His Gln Arg Asn Ser Tyr Pro Trp Thr
85 90 95

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

<210> 66

<211> 7

<212> PRT

<213> Oryctolagus cuniculus

<400> 66

Gly Phe Ser Leu Ser Ser Tyr
1 5

<210> 67

<211> 5

<212> PRT

<213> Oryctolagus cuniculus

<400> 67

eolf-seql

Ser Tyr Ala Met Ser
1 5

<210> 68
<211> 5
<212> PRT
<213> Oryctolagus cuniculus

<400> 68

Trp Ser Gly Gly Ser
1 5

<210> 69
<211> 16
<212> PRT
<213> Oryctolagus cuniculus

<400> 69

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

<210> 70
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> 299-000 HVR-H2 Kabat G65S

<400> 70

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

<210> 71
<211> 17
<212> PRT
<213> Oryctolagus cuniculus

<400> 71

Arg Tyr Gly Thr Ser Tyr Pro Asp Tyr Gly Asp Ala Asn Gly Phe Asp

		eolf-seql	
1	5	10	15

Pro

<210> 72
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-000 HVR-H3 DASG

<400> 72

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

Pro

<210> 73
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 299-000 HVR-H3 DAQG

<400> 73

Arg	Tyr	Gly	Thr	Ser	Tyr	Pro	Asp	Tyr	Gly	Asp	Ala	Gln	Gly	Phe	Asp
1				5					10					15	

Pro

<210> 74
 <211> 11
 <212> PRT
 <213> Oryctolagus cuniculus

eolf-seql

<400> 74

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

<210> 75

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> 299-000 HVR-L1 RAA

<400> 75

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

<210> 76

<211> 7

<212> PRT

<213> Oryctolagus cuniculus

<400> 76

Arg Ala Ser Thr Leu Ala Ser
1 5

<210> 77

<211> 12

<212> PRT

<213> Oryctolagus cuniculus

<400> 77

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

<210> 78

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

eolf-seql

<223> 299-000 HVR-L3 NYA

<400> 78

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

<210> 79

<211> 119

<212> PRT

<213> Artificial Sequence

<220>

<223> anti-CD20 antibody VH

<400> 79

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

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Tyr Ser
20 25 30

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

Gly Arg Ile Phe Pro Gly Asp Gly Asp Thr Asp Tyr Asn Gly Lys Phe
50 55 60

Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser Thr Ala Tyr
65 70 75 80

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

Ala Arg Asn Val Phe Asp Gly Tyr Trp Leu Val Tyr Trp Gly Gln Gly
100 105 110

Thr Leu Val Thr Val Ser Ser
115

eolf-seql

<210> 80
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> anti-CD20 antibody VL

<400> 80

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

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

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

Pro Gln Leu Leu Ile Tyr Gln Met Ser Asn Leu Val 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 Ala Gln Asn
 85 90 95

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

<210> 81
 <211> 126
 <212> PRT
 <213> Homo sapiens

<400> 81

Gln Val Glu Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly

eolf-seql

1	5	10	15
Ser	Leu	Arg	Leu
	20		
Ser	Cys	Ala	Ala
		25	
Ser	Gly	Phe	Thr
Phe	Ser	Ser	Tyr
	30		
Ala	Met	Ser	Trp
	35		
Val	Arg	Gln	Ala
		40	
Pro	Gly	Lys	Gly
Leu	Glu	Trp	Val
	45		
Ser	Ala	Ile	Asn
	50		
Ala	Ser	Gly	Thr
		55	
Arg	Thr	Tyr	Tyr
Ala	Asp	Ser	Val
	60		
Lys	Gly	Arg	Phe
	65		
Thr	Ile	Ser	Arg
	70		
Asp	Asn	Ser	Lys
		75	
Asn	Thr	Leu	Tyr
			80
Leu	Gln	Met	Asn
Ser	Leu	Arg	Ala
	85		
Glu	Asp	Thr	Ala
	90		
Val	Tyr	Tyr	Cys
		95	
Ala	Arg	Gly	Lys
Gly	Asn	Thr	His
	100		
Lys	Pro	Tyr	Gly
Tyr	Val	Arg	Tyr
	110		
Phe	Asp	Val	Trp
	115		
Gly	Gln	Gly	Thr
Leu	Val	Thr	Val
	120		
Ser	Ser		
	125		
<210>	82		
<211>	108		
<212>	PRT		
<213>	Homo sapiens		
<400>	82		
Asp	Ile	Val	Leu
Thr	Gln	Ser	Pro
Ala	Thr	Leu	Ser
	10		
Leu	Ser	Leu	Ser
Pro	Gly		
	15		
Glu	Arg	Ala	Thr
	20		
Leu	Ser	Cys	Arg
Ala	Ser	Gln	Ser
	25		
Val	Ser	Ser	Ser
	30		
Tyr	Leu	Ala	Trp
Tyr	Gln	Gln	Lys
Pro	Gly	Gln	Ala
Pro	Arg	Leu	Leu
	45		

eolf-seql

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

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

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

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

<210> 83

<211> 116

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized anti-alpha synuclein acntibody 9E4 VH

<400> 83

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

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Tyr
20 25 30

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

Ala Ser Ile Ser Ser Gly Gly Gly Ser Thr Tyr Tyr Pro Asp Asn Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asp Ala Lys Asn Ser Leu Tyr
65 70 75 80

eolf-seql

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

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

Thr Val Ser Ser
115

<210> 84

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> humanized anti-alpha synuclein acntibody 9E4 VL

<400> 84

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

Asp Arg Val Thr Ile Thr Cys Lys Ser Ile Gln Thr Leu Leu Tyr Ser
20 25 30

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

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

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

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

Tyr Tyr Ser Tyr Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile
100 105 110

eolf-seql

Lys

<210> 85
 <211> 115
 <212> PRT
 <213> Mus musculus

<400> 85

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

Ser Val Gln Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr
 20 25 30

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

Gly Ala Thr Asn Pro Asn Asn Gly Tyr Thr Asp Tyr Asn Gln Arg Phe
 50 55 60

Lys Asp Lys Ala Ile Leu Thr Ala Asp Lys Ser Ser Asn Thr Ala Tyr
 65 70 75 80

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

Ala Ser Gly Gly His Leu Ala Tyr Trp Gly Gln Gly Thr Val Val Thr
 100 105 110

Val Ser Ala
 115

<210> 86
 <211> 112
 <212> PRT

eolf-seql

<213> Mus musculus

<400> 86

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

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Phe His Ser
20 25 30

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

Pro Lys Leu Leu Ile Asn Arg 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 Gly Val Glu Ala Glu Asp Leu Gly Val Tyr Phe Cys Ser Gln Ser
85 90 95

Ala His Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Arg
100 105 110

<210> 87

<211> 115

<212> PRT

<213> Mus musculus

<400> 87

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

Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr Tyr
20 25 30

Ile His Trp Val Lys Gln Ser Pro Gly Gln Gly Leu Glu Trp Ile Gly

eolf-seql

35

40

45

Trp Ile Tyr Pro Gly Ser Gly Asn Thr Lys Tyr Ser Glu Lys Phe Lys
50 55 60

Gly Lys Ala Thr Leu Thr Ala Asp Thr Ser Ser Ser Thr Ala Tyr Met
65 70 75 80

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

Arg Asp Gly Cys Tyr Gly Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
100 105 110

Thr Val Ser
115

<210> 88
<211> 111
<212> PRT
<213> Mus musculus

<400> 88

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

Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp
20 25 30

Gly Asp Ser Tyr Met Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
35 40 45

Lys Phe Leu Ile Cys Ala Ala Ser Asn Leu Glu Ser Gly Ile Pro Ala
50 55 60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asn Ile His
65 70 75 80

eolf-seql

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

Glu Asp Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys
100 105 110

<210> 89
<211> 115
<212> PRT
<213> Oryctolagus cuniculus

<400> 89

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

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

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

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

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

Ser Pro Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Arg Asp
85 90 95

Gly Thr Asp Lys Thr Phe Asn Ile Trp Gly Pro Gly Thr Leu Val Thr
100 105 110

Val Ser Leu
115

eolf-seql

<210> 90
 <211> 112
 <212> PRT
 <213> Oryctolagus cuniculus

<400> 90

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

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

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

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

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

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

Thr Ser Asp Cys Phe Thr Phe Gly Gly Gly Thr Gly Val Val Val Arg
 100 105 110

<210> 91
 <211> 119
 <212> PRT
 <213> Oryctolagus cuniculus

<400> 91

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

Leu Thr Leu Thr Cys Thr Val Ser Gly Ile Asp Leu Ser Arg Tyr Ala

eolf-seql

20

25

30

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

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

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

Ser Pro Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg Trp Thr
85 90 95

Tyr Asp Asp Tyr Gly Asp Phe Gln Gly Phe Asn Ile Trp Gly Pro Gly
100 105 110

Thr Leu Val Thr Val Ser Leu
115

<210> 92
<211> 111
<212> PRT
<213> Oryctolagus cuniculus

<400> 92

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

Thr Val Thr Ile Ser Cys Gln Ser Ser Gln Ser Val Tyr Asn Asn Asn
20 25 30

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

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

eolf-seql

Gly Ser Gly Ser Gly Thr Gln Phe Thr Leu Thr Ile Ser Gly Val Gln
65 70 75 80

Cys Asp Asp Ala Ala Thr Tyr Tyr Cys Leu Gly Gly Tyr Asp Asp Asp
85 90 95

Ala Asp Met Gly Ala Phe Gly Gly Gly Thr Glu Val Val Val Lys
100 105 110

<210> 93
<211> 111
<212> PRT
<213> Artificial Sequence

<220>
<223> heavy chain variable domain

<400> 93

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

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

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

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

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

Ile Thr Ser Pro Thr Thr Glu Asp Thr Ala Thr Tyr Phe Cys Ala Arg
85 90 95

eolf-seql

Asn Phe Ser Val Trp Gly Pro Gly Thr Leu Val Thr Val Ser Leu
 100 105 110

<210> 94
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> light chain variable domain

<400> 94

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

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

Arg Leu Ala Trp Phe Gln Gln Met Arg Gly Gln Pro Pro Lys Leu Leu
 35 40 45

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

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

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

Ser Ala Glu Cys Asn Val Phe Gly Gly Gly Thr Glu Val Val Val Lys
 100 105 110

<210> 95
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>

eolf-seql

<223> peptidic linker

<400> 95

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser
20

<210> 96

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> peptidic linker

<400> 96

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
1 5 10 15

Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
20 25 30

<210> 97

<211> 536

<212> PRT

<213> Homo sapiens

<400> 97

Met Glu Phe Ser Ser Pro Ser Arg Glu Glu Cys Pro Lys Pro Leu Ser
1 5 10 15

Arg Val Ser Ile Met Ala Gly Ser Leu Thr Gly Leu Leu Leu Leu Gln
20 25 30

Ala Val Ser Trp Ala Ser Gly Ala Arg Pro Cys Ile Pro Lys Ser Phe
35 40 45

eolf-seql

Gly Tyr Ser Ser Val Val Cys Val Cys Asn Ala Thr Tyr Cys Asp Ser
50 55 60

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

Ser Thr Arg Ser Gly Arg Arg Met Glu Leu Ser Met Gly Pro Ile Gln
85 90 95

Ala Asn His Thr Gly Thr Gly Leu Leu Leu Thr Leu Gln Pro Glu Gln
100 105 110

Lys Phe Gln Lys Val Lys Gly Phe Gly Gly Ala Met Thr Asp Ala Ala
115 120 125

Ala Leu Asn Ile Leu Ala Leu Ser Pro Pro Ala Gln Asn Leu Leu Leu
130 135 140

Lys Ser Tyr Phe Ser Glu Glu Gly Ile Gly Tyr Asn Ile Ile Arg Val
145 150 155 160

Pro Met Ala Ser Cys Asp Phe Ser Ile Arg Thr Tyr Thr Tyr Ala Asp
165 170 175

Thr Pro Asp Asp Phe Gln Leu His Asn Phe Ser Leu Pro Glu Glu Asp
180 185 190

Thr Lys Leu Lys Ile Pro Leu Ile His Arg Ala Leu Gln Leu Ala Gln
195 200 205

Arg Pro Val Ser Leu Leu Ala Ser Pro Trp Thr Ser Pro Thr Trp Leu
210 215 220

Lys Thr Asn Gly Ala Val Asn Gly Lys Gly Ser Leu Lys Gly Gln Pro
225 230 235 240

eolf-seql

Gly Asp Ile Tyr His Gln Thr Trp Ala Arg Tyr Phe Val Lys Phe Leu
245 250 255

Asp Ala Tyr Ala Glu His Lys Leu Gln Phe Trp Ala Val Thr Ala Glu
260 265 270

Asn Glu Pro Ser Ala Gly Leu Leu Ser Gly Tyr Pro Phe Gln Cys Leu
275 280 285

Gly Phe Thr Pro Glu His Gln Arg Asp Phe Ile Ala Arg Asp Leu Gly
290 295 300

Pro Thr Leu Ala Asn Ser Thr His His Asn Val Arg Leu Leu Met Leu
305 310 315 320

Asp Asp Gln Arg Leu Leu Leu Pro His Trp Ala Lys Val Val Leu Thr
325 330 335

Asp Pro Glu Ala Ala Lys Tyr Val His Gly Ile Ala Val His Trp Tyr
340 345 350

Leu Asp Phe Leu Ala Pro Ala Lys Ala Thr Leu Gly Glu Thr His Arg
355 360 365

Leu Phe Pro Asn Thr Met Leu Phe Ala Ser Glu Ala Cys Val Gly Ser
370 375 380

Lys Phe Trp Glu Gln Ser Val Arg Leu Gly Ser Trp Asp Arg Gly Met
385 390 395 400

Gln Tyr Ser His Ser Ile Ile Thr Asn Leu Leu Tyr His Val Val Gly
405 410 415

Trp Thr Asp Trp Asn Leu Ala Leu Asn Pro Glu Gly Gly Pro Asn Trp
420 425 430

eolf-seql

Val Arg Asn Phe Val Asp Ser Pro Ile Ile Val Asp Ile Thr Lys Asp
 435 440 445

Thr Phe Tyr Lys Gln Pro Met Phe Tyr His Leu Gly His Phe Ser Lys
 450 455 460

Phe Ile Pro Glu Gly Ser Gln Arg Val Gly Leu Val Ala Ser Gln Lys
 465 470 475 480

Asn Asp Leu Asp Ala Val Ala Leu Met His Pro Asp Gly Ser Ala Val
 485 490 495

Val Val Val Leu Asn Arg Ser Ser Lys Asp Val Pro Leu Thr Ile Lys
 500 505 510

Asp Pro Ala Val Gly Phe Leu Glu Thr Ile Ser Pro Gly Tyr Ser Ile
 515 520 525

His Thr Tyr Leu Trp Arg Arg Gln
 530 535