

SEQUENCE LISTING

<110> WuXi Biologics (Shanghai) Co., LTD.
Wuxi Biologics Ireland Limited

<120> Fully human antibodies against OX40, method for preparing the
same, and use thereof

<130> IEC196027PCT

<150> PCT/CN2018/086574

<151> 2018-05-11

<150> CN201810529840.5

<151> 2018-05-29

<160> 56

<170> PatentIn version 3.5

<210> 1

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR1 of 1.7.10-u1-IgG1K

<400> 1

Gly Phe Thr Phe Ser Asp Tyr Tyr Met Ser
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<223> LCDR1 of 1.7.10-u1-IgG1K

<400> 2

Arg Ala Ser Gln Gly Ile Ser Ser Trp Leu Ala
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<211> 17

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<213> artificial sequence

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<223> HCDR2 of 1.7.10-u1-IgG1K

<400> 3

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

Gly

<210> 4

<211> 7

<212> PRT

<213> artificial sequence

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<223> LCDR2 of 1.7.10-u1-IgG1K

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Ala Ala Ser Ser Leu Gln Gly
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<210> 5

<211> 12

<212> PRT

<213> artificial sequence

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<223> HCDR3 of 1.7.10-u1-IgG1K

<400> 5

Glu Arg Gly Ala Ala Gly Thr Gly Trp Phe Asp Pro
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<210> 6

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<213> artificial sequence

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<223> LCDR3 of 1.7.10-u1-IgG1K

<400> 6

Gln Gln Val Asn Ser Phe Pro Trp Thr
1 5

<210> 7

<211> 12

<212> PRT
<213> artificial sequence

<220>
<223> HCDR1 of 1.62.3-u1-IgG1K

<400> 7

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

<210> 8
<211> 17
<212> PRT
<213> artificial sequence

<220>
<223> LCDR1 of 1.62.3-u1-IgG1K

<400> 8

Lys Ser Ser Gln Ser Val Val Phe Ser Ser Asn Asn Lys Ile Cys Leu
1 5 10 15

Ala

<210> 9
<211> 16
<212> PRT
<213> artificial sequence

<220>
<223> HCDR2 of 1.62.3-u1-IgG1K or 1.62.3-u1-3-IgG1K

<400> 9

Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 10
<211> 7
<212> PRT
<213> artificial sequence

<220>
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<400> 10

Trp Ser Ser Thr Arg Glu Ser
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<210> 11

<211> 10

<212> PRT

<213> artificial sequence

<220>

<223> HCDR3 of 1.62.3-u1-IgG1K or 1.62.3-u1-3-IgG1K

<400> 11

Asp Glu Trp Glu Leu Arg Gly Phe Asp Tyr
1 5 10

<210> 12

<211> 9

<212> PRT

<213> artificial sequence

<220>

<223> LCDR3 of 1.62.3-u1-IgG1K or 1.62.3-u1-3-IgG1K

<400> 12

Gln Gln Tyr Tyr Ser Ser Pro Trp Thr
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<210> 13

<211> 12

<212> PRT

<213> artificial sequence

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<223> HCDR1 of 1.62.3-u1-3-IgG1K

<400> 13

Gly Gly Ser Ile Ser Asn Ala Gly Tyr Tyr Trp Ser
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<210> 14

<211> 17

<212> PRT

<213> artificial sequence

<220>

<223> LCDR1 of 1.62.3-u1-3-IgG1K

<400> 14

Lys Ser Ser Gln Ser Val Val Phe Ser Ser Asn Asn Lys Ile Ser Leu
1 5 10 15

Ala

<210> 15

<211> 11

<212> PRT

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<223> HCDR1 of 1.134.9-u1-IgG1L

<400> 15

Gly Gly Ser Ile Ser Ser Tyr Asn Trp Trp Ser
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<210> 16

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<212> PRT

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<223> LCDR1 of 1.134.9-u1-IgG1L

<400> 16

Gln Gly Asp Asn Leu Arg Thr Tyr Tyr Ala Ser
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<210> 17

<211> 16

<212> PRT

<213> artificial sequence

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<223> HCDR2 of 1.134.9-u1-IgG1L

<400> 17

Glu Ile Tyr His Gly Gly Asn Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 18
<211> 7
<212> PRT
<213> artificial sequence

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<223> LCDR2 of 1.134.9-u1-IgG1L

<400> 18

Gly Arg Asn Lys Arg Pro Ser
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<210> 19
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<212> PRT
<213> artificial sequence

<220>
<223> HCDR3 of 1.134.9-u1-IgG1L

<400> 19

Ala Pro Gly Asp Trp Gly Gly Ser Pro Tyr Phe Asp Phe
1 5 10

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<220>
<223> LCDR3 of 1.134.9-u1-IgG1L

<400> 20

Asn Ser Arg Asp Ser Ser Gly Asn Pro Val Val
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<210> 21
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<212> PRT
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<220>
<223> HCDR1 of 1.186.19-u1-IgG1K

<400> 21

Gly Phe Thr Phe Ser Asp Tyr Tyr Met Gly
1 5 10

<210> 22
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<212> PRT
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<220>
<223> LCDR1 of 1.186.19-u1-IgG1K

<400> 22

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

<210> 23
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<223> HCDR2 of 1.186.19-u1-IgG1K

<400> 23

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

Gly

<210> 24
<211> 7
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<213> artificial sequence

<220>
<223> LCDR2 of 1.186.19-u1-IgG1K

<400> 24

Ala Ala Ser Ser Leu Gln Gly
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<210> 25
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<220>
<223> HCDR3 of 1.186.19-u1-IgG1K

<400> 25

Glu Arg Gly Ala Ala Gly Ala Gly Trp Phe Asp Pro
1 5 10

<210> 26

<211> 9

<212> PRT

<213> artificial sequence

<220>

<223> LCDR3 of 1.186.19-u1-IgG1K

<400> 26

Gln Gln Val Asn Ser Phe Pro Trp Thr
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<210> 27

<211> 11

<212> PRT

<213> artificial sequence

<220>

<223> HCDR1 of 1.214.23-u1-IgG1K

<400> 27

Gly Gly Ser Ile Ser Asn Arg Asn Trp Trp Ser
1 5 10

<210> 28

<211> 11

<212> PRT

<213> artificial sequence

<220>

<223> LCDR1 of 1.214.23-u1-IgG1K

<400> 28

Arg Ala Ser Gln Asp Ile Asn Ser Tyr Leu Ala
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<210> 29

<211> 16

<212> PRT

<213> artificial sequence

<220>

<223> HCDR2 of 1.214.23-u1-IgG1K

<400> 29

Glu Ile Phe His Ser Gly Asn Thr Asn Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 30

<211> 7

<212> PRT

<213> artificial sequence

<220>

<223> LCDR2 of 1.214.23-u1-IgG1K

<400> 30

Ala Ala Ser Ser Leu Gln Ser
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<210> 31

<211> 8

<212> PRT

<213> artificial sequence

<220>

<223> HCDR3 of 1.214.23-u1-IgG1K

<400> 31

Ser Phe Ala Val Ala Leu Asp Ser
1 5

<210> 32

<211> 9

<212> PRT

<213> artificial sequence

<220>

<223> LCDR3 of 1.214.23-u1-IgG1K

<400> 32

Gln Gln Leu Phe Ser Tyr Pro Ile Thr
1 5

<210> 33

<211> 121

<212> PRT

<213> artificial sequence

<220>

<223> VH of 1.7.10-u1-IgG1K

<400> 33

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

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

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

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

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

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

Ala Arg Glu Arg Gly Ala Ala Gly Thr Gly Trp Phe Asp Pro Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 34

<211> 107

<212> PRT

<213> artificial sequence

<220>

<223> VL of 1.7.10-u1-IgG1K

<400> 34

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

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

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

35 40 45

Tyr Ala Ala Ser Ser Leu Gln Gly 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 Val Asn Ser Phe Pro Trp
85 90 95

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

<210> 35
<211> 120
<212> PRT
<213> artificial sequence

<220>
<223> VH of 1.62.3-u1-IgG1K
<400> 35

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 Gly Ser Ile Ser Asn Gly
20 25 30

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

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

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

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

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

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 36

<211> 113

<212> PRT

<213> artificial sequence

<220>

<223> VL of 1.62.3-u1-IgG1K

<400> 36

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 Val Val Phe Ser
20 25 30

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

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

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

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

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

Lys

<210> 37

<211> 120

<212> PRT

<213> artificial sequence

<220>

<223> VH of 1.62.3-u1-3-IgG1K

<400> 37

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 Gly Ser Ile Ser Asn Ala
20 25 30

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

Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
50 55 60

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

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

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

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 38

<211> 113

<212> PRT

<213> artificial sequence

<220>

<223> VL of 1.62.3-u1-3-IgG1K

<400> 38

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 Val Val Phe Ser
20 25 30

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

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

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

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

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

Lys

<210> 39

<211> 122

<212> PRT

<213> artificial sequence

<220>

<223> VH of 1.134.9-u1-IgG1L

<400> 39

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

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

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

Ile Gly Glu Ile Tyr His Gly Gly Asn Thr Asn Tyr Asn Pro Ser Leu
50 55 60

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

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

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

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

<210> 40

<211> 108

<212> PRT

<213> artificial sequence

<220>

<223> VL of 1.134.9-u1-IgG1L

<400> 40

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

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

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

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

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

Asp Glu Ala Ala Tyr Tyr Cys Asn Ser Arg Asp Ser Ser Gly Asn Pro
85 90 95

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

<210> 41

<211> 121

<212> PRT

<213> artificial sequence

<220>

<223> VH of 1.186.19-u1-IgG1K

<400> 41

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

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

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

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

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

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

Ala Lys Glu Arg Gly Ala Ala Gly Ala Gly Trp Phe Asp Pro Trp Gly
100 105 110

Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 42

<211> 107

<212> PRT

<213> artificial sequence

<220>

<223> VL of 1.186.19-u1-IgG1K

<400> 42

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

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

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

Tyr Ala Ala Ser Ser Leu Gln Gly 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 His Cys Gln Gln Val Asn Ser Phe Pro Trp
85 90 95

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

<210> 43

<211> 117

<212> PRT

<213> artificial sequence

<220>

<223> VH of 1.214.23-u1-IgG1K

<400> 43

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

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

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

Ile Gly Glu Ile Phe His Ser Gly Asn Thr Asn Tyr Asn Pro Ser Leu
50 55 60

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

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

Ala Lys Ser Phe Ala Val Ala Leu Asp Ser Trp Gly Gln Gly Thr Leu
100 105 110

Val Thr Val Ser Ser

<210> 44

<211> 107

<212> PRT

<213> artificial sequence

<220>

<223> VL of 1.214.23-u1-IgG1K

<400> 44

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

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

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

Thr 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 Gln Leu Phe Ser Tyr Pro Ile
 85 90 95

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

<210> 45

<211> 363

<212> DNA

<213> artificial sequence

<220>

<223> VH of 1.7.10-u1-IgG1K

<400> 45

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ccaggggaagg ggctggagtg ggtttcatat attagtggta gtggtaaacac catttactac 180

gcagactctg tgaagggccg attcaccatc tccagggaca acgccaagaa ctactgtat 240
 ctgcaaatga acagcctgag agccgacgac acggccgtat atttctgtgc gagagagaga 300
 ggagcagctg gtacaggggtg gttcgacccc tggggccagg gaaccctggc caccgtctcc 360
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<210> 46
 <211> 321
 <212> DNA
 <213> artificial sequence

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 <223> VL of 1.7.10-u1-IgG1K

<400> 46
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 gggaaagccc ctaagctct gatctatgct gcatccagtt tgcaaggtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagat ttactctca ccatcagcag cctgcagcct 240
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 gggaccaagg tggaaatcaa a 321

<210> 47
 <211> 360
 <212> DNA
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 <223> VH of 1.62.3-u1-IgG1K

<400> 47
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 cagcaccag ggaagggcct ggagtggatt ggggtacatct attacagtgg gagcacctac 180
 tacaaccctg cctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc 240
 tccctgaaac tgagctctgt gactgccgag gacacggccg tgtattactg tgcgagagat 300
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<210> 48

<211> 339
<212> DNA
<213> artificial sequence

<220>
<223> VL of 1.62.3-u1-IgG1K

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tggtaccagc agaaaccagg acagcctcct aagctgctca ttactggtc atctaccgg 180
gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
atcagcagcc tgcaggctga agatgtggca gtttattact gtcagcaata ttatagttct 300
ccgtggacgt tcggccaagg gaccaagggtg gaaatcaaa 339

<210> 49
<211> 360
<212> DNA
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<220>
<223> VH of 1.62.3-u1-3-IgG1K

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caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
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cagcaccag ggaagggcct ggagtggatt gggtagatct attacagtgg gagcacctac 180
tacaaccgt cctcaagag tcgagttacc atatcagtag acacgtctaa gaaccagttc 240
tccctgaaac tgagctctgt gactgccgcg gacacggccg tgtattactg tgcgagagat 300
gagtgggagc tacggggggtt tgactactgg ggccaggga ccctgggtcac cgtctctca 360

<210> 50
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<220>
<223> VL of 1.62.3-u1-3-IgG1K

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atcaactgca agtccagcca gagtggtgta ttcagctcca acaataagat cagcttagct 120

tggtagcagc agaaaccagg acagcctcct aagctgctca ttactgggc atctaccgg 180
 gaatccgggg tccctgaccg attcagtggc agcgggtctg ggacagattt cactctcacc 240
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<210> 51
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 <223> VH of 1.134.9-u1-IgG1L

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 cccccagga agggactgga gtggattggg gaaatctatc atggtgggaa caccaactac 180
 aaccgtccc tcaagagtcg agtcaccatg ttagtagaca actccaagaa ccagttctcc 240
 ctgaagctga gctctgtgac cgccgcggac acggccgtat attactgtgc gagagcccc 300
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 tcctca 366

<210> 52
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<220>
 <223> VL of 1.134.9-u1-IgG1L

<400> 52
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 atcccagacc gattctctgg ctccagctcg ggaaacacag ctcccttgac catcactggg 240
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<210> 53
<211> 363
<212> DNA
<213> artificial sequence

<220>
<223> VH of 1.186.19-u1-IgG1K

<400> 53
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