

SEQUENCE LISTING

<110> SHIONOGI & CO., LTD.
OSAKA UNIVERSITY

<120> Novel anti-CCR8 antibody

<130> 19P00089W0

<150> JP2018-245044

<151> 2018-12-27

<150> JP2019-099923

<151> 2019-05-29

<160> 59

<170> PatentIn version 3.5

<210> 1

<211> 355

<212> PRT

<213> Homo sapiens

<400> 1

Met Asp Tyr Thr Leu Asp Leu Ser Val Thr Thr Val Thr Asp Tyr Tyr
1 5 10 15

Tyr Pro Asp Ile Phe Ser Ser Pro Cys Asp Ala Glu Leu Ile Gln Thr
20 25 30

Asn Gly Lys Leu Leu Leu Ala Val Phe Tyr Cys Leu Leu Phe Val Phe
35 40 45

Ser Leu Leu Gly Asn Ser Leu Val Ile Leu Val Leu Val Val Cys Lys
50 55 60

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

Asp Leu Leu Phe Val Phe Ser Phe Pro Phe Gln Thr Tyr Tyr Leu Leu
85 90 95

Asp Gln Trp Val Phe Gly Thr Val Met Cys Lys Val Val Ser Gly Phe
 100 105 110

Tyr Tyr Ile Gly Phe Tyr Ser Ser Met Phe Phe Ile Thr Leu Met Ser
 115 120 125

Val Asp Arg Tyr Leu Ala Val Val His Ala Val Tyr Ala Leu Lys Val
 130 135 140

Arg Thr Ile Arg Met Gly Thr Thr Leu Cys Leu Ala Val Trp Leu Thr
 145 150 155 160

Ala Ile Met Ala Thr Ile Pro Leu Leu Val Phe Tyr Gln Val Ala Ser
 165 170 175

Glu Asp Gly Val Leu Gln Cys Tyr Ser Phe Tyr Asn Gln Gln Thr Leu
 180 185 190

Lys Trp Lys Ile Phe Thr Asn Phe Lys Met Asn Ile Leu Gly Leu Leu
 195 200 205

Ile Pro Phe Thr Ile Phe Met Phe Cys Tyr Ile Lys Ile Leu His Gln
 210 215 220

Leu Lys Arg Cys Gln Asn His Asn Lys Thr Lys Ala Ile Arg Leu Val
 225 230 235 240

Leu Ile Val Val Ile Ala Ser Leu Leu Phe Trp Val Pro Phe Asn Val
 245 250 255

Val Leu Phe Leu Thr Ser Leu His Ser Met His Ile Leu Asp Gly Cys
 260 265 270

Ser Ile Ser Gln Gln Leu Thr Tyr Ala Thr His Val Thr Glu Ile Ile
 275 280 285

Ser Phe Thr His Cys Cys Val Asn Pro Val Ile Tyr Ala Phe Val Gly
 290 295 300

Glu Lys Phe Lys Lys His Leu Ser Glu Ile Phe Gln Lys Ser Cys Ser
 305 310 315 320

Gln Ile Phe Asn Tyr Leu Gly Arg Gln Met Pro Arg Glu Ser Cys Glu
 325 330 335

Lys Ser Ser Ser Cys Gln Gln His Ser Ser Arg Ser Ser Ser Val Asp
 340 345 350

Tyr Ile Leu
 355

<210> 2
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<400> 2

Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr
 1 5 10 15

<210> 3
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<220>
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<400> 3

Arg Met Ser Asn Leu Ala Ser
 1 5

<210> 4
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>

<223> CDR3 of 10A11 VL

<400> 4

Met Gln His Leu Glu Tyr Pro Leu Thr

1 5

<210> 5

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR1 of 10A11 VH

<400> 5

Thr Tyr Ala Leu Tyr

1 5

<210> 6

<211> 19

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR2 of 10A11 VH

<400> 6

Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp Ser

1 5 10 15

Val Lys Asp

<210> 7

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR3 of 10A11 VH

<400> 7

Ala Arg Phe Tyr Tyr Ser Asp Tyr Gly Tyr Ala Met Asp Tyr
1 5 10

<210> 8

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR2 of 27G1 VH

<400> 8

Thr Tyr Ala Met Tyr
1 5

<210> 9

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<400> 9

Arg Val Ser Asn Leu Ala Ser
1 5

<210> 10

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<212> PRT

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<223> CDR3 of 19D7 VL

<400> 10

Met Gln His Leu Glu Tyr Pro Phe Thr
1 5

<210> 11

<211> 12

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<400> 11

Gly Gly Tyr Gly Asn Tyr Arg Tyr Ala Met Asp Tyr
 1 5 10

<210> 12
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 <212> PRT
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<220>
 <223> CDR1 of 8F7 VH

<400> 12

Pro Tyr Ala Met Tyr
 1 5

<210> 13
 <211> 8
 <212> PRT
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<220>
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<400> 13

Gly His Gln Gly Thr Met Asp Tyr
 1 5

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

<220>
 <223> CDR1 of 2C7 VL

<400> 14

Arg Ser Ser Gln Ser Leu Val His Ser Asn Gly Asn Thr Tyr Leu His
 1 5 10 15

<210> 15
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 15

Lys Val Ser Asn Arg Phe Ser
 1 5

<210> 16
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<220>
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<400> 16

Ser Gln Ser Thr Gln Val Pro Leu Thr
 1 5

<210> 17
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<220>
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<400> 17

Ala Tyr Gly Val His
 1 5

<210> 18
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>

<223> CDR2 of 2C7 VH

<400> 18

Val	Ile	Trp	Arg	Gly	Gly	Ser	Thr	Asp	Tyr	Asn	Ala	Ala	Phe	Met	Ser
1				5					10					15	

<210> 19

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR3 of 2C7 VH

<400> 19

Lys	Gly	Gly	Ser	Tyr	Ala	Met	Asp	Tyr
1				5				

<210> 20

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<223> CDR1 of 2-7B VL

<400> 20

Arg	Ala	Ser	Gln	Ser	Val	Ser	Ile	Ser	Arg	Tyr	Asn	Ile	Met	His
1				5					10				15	

<210> 21

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR2 of 2-7B VL

<400> 21

Arg	Ala	Ser	Asn	Leu	Ala	Ser
1				5		

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

<220>
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<400> 22

Gln Gln Ser Arg Glu Ser Pro Pro Thr
 1 5

<210> 23
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> CDR1 of 2-7B VH

<400> 23

Asp Tyr Tyr Met Ala
 1 5

<210> 24
 <211> 17
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> CDR2 of 2-7B VH

<400> 24

Thr Ile Thr Tyr Asp Val Tyr Ser Thr Tyr Tyr Arg Asp Ser Val Lys
 1 5 10 15

Gly

<210> 25
 <211> 14

<212> PRT
 <213> Artificial Sequence

<220>
 <223> CDR3 of 2-7B VH

<400> 25

His Gly Gly Asp Gly Tyr Asn Ser Gly Asn Trp Phe Ala Tyr
 1 5 10

<210> 26
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 10A11 VL

<400> 26

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

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
 50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
 85 90 95

Leu Glu Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
 100 105 110

Arg

<210> 27
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<220>
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<400> 27

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

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

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

Ala Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60

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

Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met Tyr
 85 90 95

Tyr Cys Val Arg Ala Arg Phe Tyr Tyr Ser Asp Tyr Gly Tyr Ala Met
 100 105 110

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120 125

<210> 28
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<223> 27G1 VH

<400> 28

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

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

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

Ala Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60

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

Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met Tyr
 85 90 95

Tyr Cys Val Arg Ala Arg Phe Tyr Tyr Ser Asp Tyr Gly Tyr Ala Met
 100 105 110

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120 125

<210> 29

<211> 113

<212> PRT

<213> Artificial Sequence

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<223> 1H4 VL

<400> 29

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

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
 50 55 60

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
 85 90 95

Leu Glu Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
 100 105 110

Arg

<210> 30
 <211> 125
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 1H4 VH

<400> 30

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

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

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

Ala Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60

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

Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met Tyr
 85 90 95

Tyr Cys Val Arg Ala Arg Phe Tyr Tyr Ser Asp Tyr Gly Tyr Ala Met
 100 105 110

Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120 125

<210> 31
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 <212> PRT
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<220>
 <223> 19D7 VL

<400> 31

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

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45

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

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
85 90 95

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

Arg

<210> 32
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> 19D7 VH

<400> 32

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

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

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

Ala Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
50 55 60

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

Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met Tyr
85 90 95

Tyr Cys Val Arg Gly Gly Tyr Gly Asn Tyr Arg Tyr Ala Met Asp Tyr
100 105 110

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

<210> 33
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<400> 33

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

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser
 35 40 45

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

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

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
 85 90 95

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

Arg

<210> 34
 <211> 119

<212> PRT

<213> Artificial Sequence

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<223> 8F7 VH

<400> 34

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

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

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

Ala Arg Ile Arg Ser Lys Ser Asn Asn Tyr Ala Thr Tyr Tyr Ala Asp
 50 55 60

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

Leu Tyr Leu Gln Met Asn Asn Leu Lys Thr Glu Asp Thr Ala Met Tyr
 85 90 95

Tyr Cys Val Arg Gly His Gln Gly Thr Met Asp Tyr Trp Gly Gln Gly
 100 105 110

Thr Ser Val Thr Val Ser Ser
 115

<210> 35

<211> 113

<212> PRT

<213> Artificial Sequence

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<223> 2C7 VL

<400> 35

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

Gly Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Val His Ser
20 25 30

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

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

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

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

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

Arg

<210> 36
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> 2C7 VH

<400> 36

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

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

Gly Val Ile Trp Arg Gly Gly Ser Thr Asp Tyr Asn Ala Ala Phe Met
50 55 60

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

Lys Met Asn Ser Leu Gln Ala Asp Asp Thr Ala Ile Tyr Tyr Cys Ala
85 90 95

Lys Lys Gly Gly Ser Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Ser
100 105 110

Val Thr Val Ser Ser
115

$\langle 210 \rangle$	37
$\langle 211 \rangle$	111
$\langle 212 \rangle$	PRT
$\langle 213 \rangle$	Artificial Sequence

<220>
<223> 2-7B VL

<400> 37

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

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

Tyr Asn Ile Met His Trp Tyr Gln Gln Lys Pro Gly Gln Gln Pro Lys
35 40 45

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

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

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

Ser Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Leu Lys Arg
100 105 110

<210> 38
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> 2-7B VH

<400> 38

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

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

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

Ala Thr Ile Thr Tyr Asp Val Tyr Ser Thr Tyr Tyr Arg Asp Ser Val
50 55 60

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

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

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

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

<210> 39
 <211> 353
 <212> PRT
 <213> Mus musculus

<400> 39

Met Asp Tyr Thr Met Glu Pro Asn Val Thr Met Thr Asp Tyr Tyr Pro
 1 5 10 15

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

Met Leu Tyr Leu Ala Ile Leu Tyr Cys Val Leu Phe Val Leu Gly Leu
 35 40 45

Leu Gly Asn Ser Leu Val Ile Leu Val Leu Val Gly Cys Lys Lys Leu
 50 55 60

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

Leu Phe Val Leu Ser Ile Pro Phe Gln Thr His Asn Leu Leu Asp Gln
 85 90 95

Trp Val Phe Gly Thr Ala Met Cys Lys Val Val Ser Gly Leu Tyr Tyr
 100 105 110

Ile Gly Phe Phe Ser Ser Met Phe Phe Ile Thr Leu Met Ser Val Asp
 115 120 125

Arg Tyr Leu Ala Ile Val His Ala Val Tyr Ala Ile Lys Val Arg Thr
 130 135 140

Ala Ser Val Gly Thr Ala Leu Ser Leu Thr Val Trp Leu Ala Ala Val
 145 150 155 160

Thr Ala Thr Ile Pro Leu Met Val Phe Tyr Gln Val Ala Ser Glu Asp
 165 170 175

Gly Met Leu Gln Cys Phe Gln Phe Tyr Glu Glu Gln Ser Leu Arg Trp
 180 185 190

Lys Leu Phe Thr His Phe Glu Ile Asn Ala Leu Gly Leu Leu Leu Pro
 195 200 205

Phe Ala Ile Leu Leu Phe Cys Tyr Val Arg Ile Leu Gln Gln Leu Arg
 210 215 220

Gly Cys Leu Asn His Asn Arg Thr Arg Ala Ile Lys Leu Val Leu Thr
 225 230 235 240

Val Val Ile Val Ser Leu Leu Phe Trp Val Pro Phe Asn Val Ala Leu
 245 250 255

Phe Leu Thr Ser Leu His Asp Leu His Ile Leu Asp Gly Cys Ala Thr
 260 265 270

Arg Gln Arg Leu Ala Leu Ala Ile His Val Thr Glu Val Ile Ser Phe
 275 280 285

Thr His Cys Cys Val Asn Pro Val Ile Tyr Ala Phe Ile Gly Glu Lys
 290 295 300

Phe Lys Lys His Leu Met Asp Val Phe Gln Lys Ser Cys Ser His Ile
 305 310 315 320

Phe Leu Tyr Leu Gly Arg Gln Met Pro Val Gly Ala Leu Glu Arg Gln
 325 330 335

Leu Ser Ser Asn Gln Arg Ser Ser His Ser Ser Thr Leu Asp Asp Ile
 340 345 350

Leu

<210> 40
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 <212> PRT
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<220>
 <223> 10A11-IGKV3-20

<400> 40

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 Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

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

Pro Arg Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Ile Pro
 50 55 60

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

Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Met Gln His
 85 90 95

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

Arg Thr

<210> 41
 <211> 125
 <212> PRT
 <213> Artificial Sequence

<220>

<223> 10A11-IGHV3-15 T94R

<400> 41

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

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

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

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

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

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

Tyr Cys Thr Arg Ala Arg Phe Tyr Tyr Ser Asp Tyr Gly Tyr Ala Met
 100 105 110

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

<210> 42

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> 10A11-IGKV4-1

<400> 42

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 Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

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

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

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

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

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

Arg Thr

<210> 43
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 10A11-IGKV1-39

<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 Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

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

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

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

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

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

Arg Thr

<210> 44
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 10A11-IGKV2-40

<400> 44

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

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

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

Arg Thr

<210> 45
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 10A11-IGKV1-16

<400> 45

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 Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

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

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

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

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

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

Arg Thr

<210> 46
 <211> 125
 <212> PRT
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<220>
 <223> 10A11-IGHV3-73

<400> 46

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

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

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

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

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

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

Tyr Cys Thr Arg Ala Arg Phe Tyr Tyr Ser Asp Tyr Gly Tyr Ala Met
 100 105 110

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

<210> 47
 <211> 114
 <212> PRT

<213> Artificial Sequence

<220>

<223> 10A11-IGKV2-28

<400> 47

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

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

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

Arg Thr

<210> 48

<211> 360

<212> PRT

<213> Homo sapiens

<400> 48

Met Asn Pro Thr Asp Ile Ala Asp Thr Thr Leu Asp Glu Ser Ile Tyr
1 5 10 15

Ser Asn Tyr Tyr Leu Tyr Glu Ser Ile Pro Lys Pro Cys Thr Lys Glu
 20 25 30

Gly Ile Lys Ala Phe Gly Glu Leu Phe Leu Pro Pro Leu Tyr Ser Leu
 35 40 45

Val Phe Val Phe Gly Leu Leu Gly Asn Ser Val Val Val Leu Val Leu
 50 55 60

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

Leu Ala Ile Ser Asp Leu Leu Phe Val Phe Ser Leu Pro Phe Trp Gly
 85 90 95

Tyr Tyr Ala Ala Asp Gln Trp Val Phe Gly Leu Gly Leu Cys Lys Met
 100 105 110

Ile Ser Trp Met Tyr Leu Val Gly Phe Tyr Ser Gly Ile Phe Phe Val
 115 120 125

Met Leu Met Ser Ile Asp Arg Tyr Leu Ala Ile Val His Ala Val Phe
 130 135 140

Ser Leu Arg Ala Arg Thr Leu Thr Tyr Gly Val Ile Thr Ser Leu Ala
 145 150 155 160

Thr Trp Ser Val Ala Val Phe Ala Ser Leu Pro Gly Phe Leu Phe Ser
 165 170 175

Thr Cys Tyr Thr Glu Arg Asn His Thr Tyr Cys Lys Thr Lys Tyr Ser
 180 185 190

Leu Asn Ser Thr Thr Trp Lys Val Leu Ser Ser Leu Glu Ile Asn Ile
 195 200 205

Leu Gly Leu Val Ile Pro Leu Gly Ile Met Leu Phe Cys Tyr Ser Met
 210 215 220

Ile Ile Arg Thr Leu Gln His Cys Lys Asn Glu Lys Lys Asn Lys Ala
 225 230 235 240

Val Lys Met Ile Phe Ala Val Val Val Leu Phe Leu Gly Phe Trp Thr
 245 250 255

Pro Tyr Asn Ile Val Leu Phe Leu Glu Thr Leu Val Glu Leu Glu Val
 260 265 270

Leu Gln Asp Cys Thr Phe Glu Arg Tyr Leu Asp Tyr Ala Ile Gln Ala
 275 280 285

Thr Glu Thr Leu Ala Phe Val His Cys Cys Leu Asn Pro Ile Ile Tyr
 290 295 300

Phe Phe Leu Gly Glu Lys Phe Arg Lys Tyr Ile Leu Gln Leu Phe Lys
 305 310 315 320

Thr Cys Arg Gly Leu Phe Val Leu Cys Gln Tyr Cys Gly Leu Leu Gln
 325 330 335

Ile Tyr Ser Ala Asp Thr Pro Ser Ser Ser Tyr Thr Gln Ser Thr Met
 340 345 350

Asp His Asp Leu His Asp Ala Leu
 355 360

<210> 49
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> CDR2 consensus sequence of VL

<220>
 <221> misc_feature
 <222> (2)..(2)

<223> Xaa can be any naturally occurring amino acid

<400> 49

Arg Xaa Ser Asn Leu Ala Ser
1 5

<210> 50

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR3 consensus sequence of VL

<220>

<221> misc_feature

<222> (8)..(8)

<223> Xaa can be any naturally occurring amino acid

<400> 50

Met Gln His Leu Glu Tyr Pro Xaa Thr
1 5

<210> 51

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> CDR1 consensus sequence of VH

<220>

<221> misc_feature

<222> (1)..(1)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> misc_feature

<222> (4)..(4)

<223> Xaa can be any naturally occurring amino acid

<400> 51

Xaa Tyr Ala Xaa Tyr

1 5

<210> 52
 <211> 105
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> h10A11 CL

<400> 52

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

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

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

Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
 50 55 60

Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
 65 70 75 80

Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
 85 90 95

Thr Lys Ser Phe Asn Arg Gly Glu Cys
 100 105

<210> 53
 <211> 329
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> h10A11 CH

<400> 53

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

Arg 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 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
 325

<210> 54
 <211> 112
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 19D7-IGKV3-15

<400> 54

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

Glu Arg Ala Thr Leu Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser

36

20

25

30

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

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

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

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

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

<210> 55
<211> 112
<212> PRT
<213> Artificial Sequence

<220>
<223> 19D7-IGKV2-18

<400> 55

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

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

Asp Arg Phe Ser Gly Ser Gly Ser Gly Ser Asp Phe Thr Leu Lys Ile

65 70 75 80

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

<220>
<223> 19D7-IGKV3-20

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

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

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

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

Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Met Gln His
85 90 95

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

<210> 57

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

<220>
 <223> 19D7-IGHV3-15 T94R

<400> 57

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

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

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

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

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

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

Tyr Cys Thr Arg Gly Gly Tyr Gly Asn Tyr Arg Tyr Ala Met Asp Tyr
 100 105 110

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

<210> 58
 <211> 123
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> 19D7-IGHV3-73

<400> 58

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

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

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

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

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

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

Tyr Cys Thr Arg Gly Gly Tyr Gly Asn Tyr Arg Tyr Ala Met Asp Tyr
 100 105 110

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

<210> 59

<211> 114

<212> PRT

<213> Artificial Sequence

<220>

<223> 10A11-IGKV4-1 N53Q+G29R

<400> 59

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 Arg Ser Ser Lys Ser Leu Leu His Ser
 20 25 30

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

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

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

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

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

Arg Thr