

Sequence Listing

<110> Yunnan Baiyao Group Co., Ltd.

<120> Antibody Molecule Against Growth And Differentiation Factor 15 And Use Thereof

<130> LC22210004P

<160> 52

<170> PatentIn version 3.3

<210> 1

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> VH

<400> 1

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

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

Asn Met Asp Trp Val Lys Gln Ser His Gly Lys Ser Leu Glu Trp Ile
35 40 45

Gly Gln Ile Asn Pro Asn Asn Gly Gly Ile Phe Phe Asn Gln Lys Phe
50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala Phe
65 70 75 80

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

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

Gly Thr Ser Val Thr Val Ser Ser
115 120

<210> 2
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VL

<400> 2

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

Glu Thr Val Thr Ile Thr Cys Arg Thr Ser Glu Asn Leu His Asn Tyr
 20 25 30

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

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

Ser Gly Ser Gly Thr Gln Tyr Ser Leu Lys Ile Asn Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Gly Ser Tyr Tyr Cys Gln His Phe Trp Ser Ser Pro Tyr
 85 90 95

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

<210> 3
 <211> 324
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> CH1-CH3

<400> 3

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

Ala Gln Thr Asn Ser Met Val Thr Leu Gly Cys Leu Val Lys Gly Tyr

20					25					30					
Phe	Pro	Glu	Pro	Val	Thr	Val	Thr	Trp	Asn	Ser	Gly	Ser	Leu	Ser	Ser
		35					40					45			
Gly	Val	His	Thr	Phe	Pro	Ala	Val	Leu	Gln	Ser	Asp	Leu	Tyr	Thr	Leu
	50					55					60				
Ser	Ser	Ser	Val	Thr	Val	Pro	Ser	Ser	Thr	Trp	Pro	Ser	Glu	Thr	Val
65						70					75				80
Thr	Cys	Asn	Val	Ala	His	Pro	Ala	Ser	Ser	Thr	Lys	Val	Asp	Lys	Lys
				85					90					95	
Ile	Val	Pro	Arg	Asp	Cys	Gly	Cys	Lys	Pro	Cys	Ile	Cys	Thr	Val	Pro
			100					105						110	
Glu	Val	Ser	Ser	Val	Phe	Ile	Phe	Pro	Pro	Lys	Pro	Lys	Asp	Val	Leu
		115					120					125			
Thr	Ile	Thr	Leu	Thr	Pro	Lys	Val	Thr	Cys	Val	Val	Val	Asp	Ile	Ser
	130					135						140			
Lys	Asp	Asp	Pro	Glu	Val	Gln	Phe	Ser	Trp	Phe	Val	Asp	Asp	Val	Glu
145						150					155				160
Val	His	Thr	Ala	Gln	Thr	Gln	Pro	Arg	Glu	Glu	Gln	Phe	Asn	Ser	Thr
				165					170					175	
Phe	Arg	Ser	Val	Ser	Glu	Leu	Pro	Ile	Met	His	Gln	Asp	Trp	Leu	Asn
			180					185					190		
Gly	Lys	Glu	Phe	Lys	Cys	Arg	Val	Asn	Ser	Ala	Ala	Phe	Pro	Ala	Pro
		195					200					205			
Ile	Glu	Lys	Thr	Ile	Ser	Lys	Thr	Lys	Gly	Arg	Pro	Lys	Ala	Pro	Gln
	210					215					220				
Val	Tyr	Thr	Ile	Pro	Pro	Pro	Lys	Glu	Gln	Met	Ala	Lys	Asp	Lys	Val
225						230					235				240

Ser Leu Thr Cys Met Ile Thr Asp Phe Phe Pro Glu Asp Ile Thr Val
 245 250 255

Glu Trp Gln Trp Asn Gly Gln Pro Ala Glu Asn Tyr Lys Asn Thr Gln
 260 265 270

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

Val Gln Lys Ser Asn Trp Glu Ala Gly Asn Thr Phe Thr Cys Ser Val
 290 295 300

Leu His Glu Gly Leu His Asn His His Thr Glu Lys Ser Leu Ser His
 305 310 315 320

Ser Pro Gly Lys

<210> 4
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> CL1

<400> 4

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
 1 5 10 15

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

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
 35 40 45

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser
 50 55 60

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
 65 70 75 80

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
 85 90 95

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
 100 105

<210> 5
 <211> 330
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> CH1-CH3

<400> 5

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

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

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

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

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

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

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

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

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

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

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

Glu Gln Tyr 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 Asp Glu
 225 230 235 240

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

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

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

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

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

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

<210> 6

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> CL1

<400> 6

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
 1 5 10 15

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

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

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

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

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

Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 100 105

<210> 7

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> VH

<400> 7

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

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

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

Trp Leu Ala His Ile Leu Trp Asp Asp Val Lys Arg Tyr Asn Pro Ala
 50 55 60

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

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

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

Leu Val Thr Val Ser Ala
 115

<210> 8
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VL

<400> 8

Asp Ile Val Met Thr Gln Ala Gln Lys Phe Met Ser Thr Ser Val Glu
 1 5 10 15

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

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

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

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

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

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

<210> 9
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 9

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

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

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

Trp Leu Ala His Ile Arg Trp Asp Asp Val Lys Arg Tyr Asn Pro Ala
 50 55 60

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

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

Cys Ala Gln Met Ala Trp Asp Trp Phe Ala Tyr Trp Gly Gln Gly Thr
 100 105 110

Leu Val Thr Val Ser Ala
 115

<210> 10
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VL

<400> 10

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

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

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

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

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

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

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

<210> 11

<211> 120

<212> PRT

<213> Artificial Sequence

<220>

<223> VH

<400> 11

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

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

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

Trp Leu Ala His Ile Trp Trp Asn Asp Asp Lys Tyr Tyr Asn Pro Ala

50

55

60

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

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

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

Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 12

<211> 111

<212> PRT

<213> Artificial Sequence

<220>

<223> VL

<400> 12

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

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

Ser Phe Ser Tyr Met His Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro
 35 40 45

Lys Leu Leu Ile Lys Tyr Ala Ser Asn Leu Glu Ser Gly Val 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

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

Glu Ile Pro Tyr Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys

100

105

110

<210> 13
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 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 13

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

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

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

Trp Leu Ala His Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Asn Pro Ser
 50 55 60

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

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

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

Ser Phe Thr Val Ser Ser
 115

<210> 14
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VL

<400> 14

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

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

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

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

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

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

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

<210> 15
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 15

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

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

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

Trp Leu Ala His Ile Trp Trp Asn Asp Asp Lys Tyr Tyr Asn Pro Ser
 50 55 60

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

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

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

Thr Leu Thr Val Ser Ser
115

<210> 16
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> VL

<400> 16

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

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

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

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

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

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

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

<210> 17
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 17

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

Pro Phe Arg Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
 20 25 30

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

Trp Leu Ala Thr Ile Trp Trp Asp Asp Asp Asn Arg Tyr Asn Pro Ser
 50 55 60

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

Phe Leu Asn Ile Ile Thr Val Glu Thr Ala Asp Thr Ala Ile Tyr Tyr
 85 90 95

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

Leu Val Thr Val Ser Ala
 115

<210> 18
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VL

<400> 18

Asp Ile Val Met Thr Gln Ser Gln Lys Phe Met Ser Thr Ser Val Gly

1 5 10 15
 Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Gly Thr Asn
 20 25 30
 Val Ala Trp Tyr Gln Gln Lys Ser Gly Gln Ser Pro Lys Ala Leu Ile
 35 40 45
 Tyr Ser Ala Ser Tyr Arg Asn Ser Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Glu Ser
 65 70 75 80
 Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser His Pro Val
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 19
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 19

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 Phe Ser Gly Phe Ser Leu Ser Thr Ser
 20 25 30
 Gly Met Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu
 35 40 45
 Trp Leu Ala His Ile Leu Trp Asp Asp Val Lys Arg Tyr Asn Pro Ala
 50 55 60
 Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Ser Ser Lys Ser Gln Ile

65 70 75 80

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

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

Thr Val Thr Val Ser Ser
115

<210>	20
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<213>	Artificial Sequence

$\langle 220 \rangle$
 $\langle 223 \rangle$ VL

<400> 20

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 Ala Ser Gln Asn Val Asp Thr Asn
20 25 30

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

Tyr Ser Ala Ser Tyr Arg Ser 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 Tyr His Ser Tyr Pro Thr
85 90 95

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

$\langle 210 \rangle$ 21

<211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VH

<400> 21

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 Phe Ser Gly Phe Ser Leu Ser Thr Ser
 20 25 30

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

Trp Leu Ala His Ile Arg Trp Asp Asp Val Lys Arg Tyr Asn Pro Ala
 50 55 60

Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Ser Gln Ile
 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 Gln Met Ala Trp Asp Trp Phe Ala Tyr Trp Gly Gln Gly Thr
 100 105 110

Thr Val Thr Val Ser Ser
 115

<210> 22
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> VL

<400> 22

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 Ala Ser Gln Asn Val Asp Thr Asp
 20 25 30

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

Tyr Ser Ala Ser Tyr Arg Tyr 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 His Gln Tyr Asn Ser Tyr Pro Thr
 85 90 95

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

<210> 23
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-1

<400> 23

Thr Ser Gly Met Gly Val Gly
 1 5

<210> 24
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-2

<400> 24

His Ile Leu Trp Asp Asp Val Lys Arg Tyr Asn Pro Ala Leu Lys Ser
 1 5 10 15

<210> 25

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

<220>
 <223> HCDR-3

<400> 25

Met Ala Trp Asp Trp Phe Ala Tyr
 1 5

<210> 26
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-1

<400> 26

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

<210> 27
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-2

<400> 27

Ser Ala Ser Tyr Arg Ser Ser
 1 5

<210> 28
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-3

<400> 28

Gln Gln Tyr His Ser Tyr Pro Thr
 1 5

<210> 29
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-2

<400> 29

His Ile Arg Trp Asp Asp Val Lys Arg Tyr Asn Pro Ala Leu Lys Ser
 1 5 10 15

<210> 30
 <211> 11
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-1

<400> 30

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

<210> 31
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-2

<400> 31

Ser Ala Ser Tyr Arg Tyr Ser
 1 5

<210> 32
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-3

<400> 32

His Gln Tyr Asn Ser Tyr Pro Thr

1 5

<210> 33
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-1

<400> 33

Thr Ala Gly Met Thr Val Gly
 1 5

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

<220>
 <223> HCDR-2

<400> 34

His Ile Trp Trp Asn Asp Asp Lys Tyr Tyr Asn Pro Ala Leu Lys Ser
 1 5 10 15

<210> 35
 <211> 10
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-3

<400> 35

Ile Ala Thr Met Asn Tyr Ala Met Asp Tyr
 1 5 10

<210> 36
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-1

<400> 36

Arg Ala Ser Gln Ser Val Ser Thr Ser Ser Phe Ser Tyr Met His
 1 5 10 15

<210> 37
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-2

<400> 37

Tyr Ala Ser Asn Leu Glu Ser
 1 5

<210> 38
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> LCDR-3

<400> 38

Gln His Ser Trp Glu Ile Pro Tyr Thr
 1 5

<210> 39
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-1

<400> 39

Thr Ser Gly Met Gly Val Asp
 1 5

<210> 40
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> HCDR-2

<400> 40

His Ile Tyr Trp Asp Asp Asp Lys Arg Tyr Asn Pro Ser Leu Lys Ser
1 5 10 15

<210> 41

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR-3

<400> 41

Arg Ala Trp Asp Ala Met Asp Tyr
1 5

<210> 42

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> LCDR-1

<400> 42

Lys Ala Arg Gln Asn Val Gly Thr Asn Val Ala
1 5 10

<210> 43

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> LCDR-3

<400> 43

Gln Gln Tyr Asn Ser Tyr Pro Tyr Thr
1 5

<210> 44

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR-2

<400> 44

His	Ile	Trp	Trp	Asn	Asp	Asp	Lys	Tyr	Tyr	Asn	Pro	Ser	Leu	Lys	Ser
1				5					10					15	

<210> 45

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR-3

<400> 45

Gly	Ala	Tyr	Asp	Phe	Phe	Asp	Tyr
1				5			

<210> 46

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> LCDR-3

<400> 46

Gln	Gln	Tyr	Asn	Thr	Tyr	Pro	Tyr	Thr
1				5				

<210> 47

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

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<400> 47

Thr	Ser	Gly	Ile	Gly	Ile	Thr
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<210> 48

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> HCDR-2

<400> 48

Thr	Ile	Trp	Trp	Asp	Asp	Asp	Asn	Arg	Tyr	Asn	Pro	Ser	Leu	Lys	Ser
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<211> 8

<212> PRT

<213> Artificial Sequence

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Ser	Ala	Trp	Asp	Trp	Phe	Ala	Tyr
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Lys	Ala	Ser	Gln	Asn	Val	Gly	Thr	Asn	Val	Ala
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Ser	Ala	Ser	Tyr	Arg	Asn	Ser
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<210> 52

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<220>
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<400> 52

Gln Gln Tyr Asn Ser His Pro Val Thr
1 5