

SEQUENCE LISTING

<110> CSL Limited

<120> IL-11R BINDING PROTEINS AND USES THEREOF

<130> 514695

<150> AU 2013900389

<151> 2013-02-07

<150> US 61/764756

<151> 2013-02-14

<160> 110

<170> PatentIn version 3.5

<210> 1

<211> 422

<212> PRT

<213> Homo sapiens

<400> 1

Met Ser Ser Ser Cys Ser Gly Leu Ser Arg Val Leu Val Ala Val Ala
1 5 10 15

Thr Ala Leu Val Ser Ala Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro
20 25 30

Pro Gly Val Gln Tyr Gly Gln Pro Gly Arg Ser Val Lys Leu Cys Cys
35 40 45

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

Pro Lys Leu Leu Gln Gly Pro Asp Ser Gly Leu Gly His Glu Leu Val
65 70 75 80

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

Leu Asp Gly Ala Leu Gly Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro
100 105 110

Pro Ala Arg Pro Val Val Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe
115 120 125

Ser Cys Thr Trp Ser Pro Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr
130 135 140

Leu Thr Ser Tyr Arg Lys Lys Thr Val Leu Gly Ala Asp Ser Gln Arg
145 150 155 160

Arg Ser Pro Ser Thr Gly Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly
165 170 175

Ala Ala Arg Cys Val Val His Gly Ala Glu Phe Trp Ser Gln Tyr Arg
 180 185 190

Ile Asn Val Thr Glu Val Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu
 195 200 205

Asp Val Ser Leu Gln Ser Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu
 210 215 220

Arg Val Glu Ser Val Pro Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp
 225 230 235 240

Thr Tyr Pro Ala Ser Trp Pro Cys Gln Pro His Phe Leu Leu Lys Phe
 245 250 255

Arg Leu Gln Tyr Arg Pro Ala Gln His Pro Ala Trp Ser Thr Val Glu
 260 265 270

Pro Ala Gly Leu Glu Glu Val Ile Thr Asp Ala Val Ala Gly Leu Pro
 275 280 285

His Ala Val Arg Val Ser Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp
 290 295 300

Ser Thr Trp Ser Pro Glu Ala Trp Gly Thr Pro Ser Thr Gly Thr Ile
 305 310 315 320

Pro Lys Glu Ile Pro Ala Trp Gly Gln Leu His Thr Gln Pro Glu Val
 325 330 335

Glu Pro Gln Val Asp Ser Pro Ala Pro Pro Arg Pro Ser Leu Gln Pro
 340 345 350

His Pro Arg Leu Leu Asp His Arg Asp Ser Val Glu Gln Val Ala Val
 355 360 365

Leu Ala Ser Leu Gly Ile Leu Ser Phe Leu Gly Leu Val Ala Gly Ala
 370 375 380

Leu Ala Leu Gly Leu Trp Leu Arg Leu Arg Arg Gly Gly Lys Asp Gly
 385 390 395 400

Ser Pro Lys Pro Gly Phe Leu Ala Ser Val Ile Pro Val Asp Arg Arg
 405 410 415

Pro Gly Ala Pro Asn Leu
 420

<210> 2
 <211> 432
 <212> PRT

<213> Macaca fascicularis

<400> 2

Met Ser Ser Ser Cys Ser Gly Leu Thr Arg Val Leu Val Ala Val Ala
1 5 10 15

Thr Ala Leu Val Ser Ser Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro
20 25 30

Pro Gly Val Gln Tyr Gly Gln Pro Gly Arg Pro Val Met Leu Cys Cys
35 40 45

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

Ser Arg Leu Leu Gln Gly Pro Asp Ser Gly Leu Gly His Arg Leu Val
65 70 75 80

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

Leu Asp Gly Val Ser Gly Gly Met Val Thr Leu Lys Leu Gly Phe Pro
100 105 110

Pro Ala Arg Pro Glu Val Ser Cys Gln Ala Val Asp Tyr Glu Asn Phe
115 120 125

Ser Cys Thr Trp Ser Pro Gly Gln Val Ser Gly Leu Pro Thr Arg Tyr
130 135 140

Leu Thr Ser Tyr Arg Lys Lys Thr Leu Pro Gly Ala Glu Ser Gln Arg
145 150 155 160

Glu Ser Pro Ser Thr Gly Pro Trp Pro Cys Pro Gln Asp Pro Leu Glu
165 170 175

Ala Ser Arg Cys Val Val His Gly Ala Glu Phe Trp Ser Glu Tyr Arg
180 185 190

Ile Asn Val Thr Glu Val Asn Pro Leu Gly Ala Ser Thr Cys Leu Leu
195 200 205

Asp Val Arg Leu Gln Ser Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu
210 215 220

Arg Val Glu Ser Val Pro Gly Tyr Pro Arg Arg Leu His Ala Ser Trp
225 230 235 240

Thr Tyr Pro Ala Ser Trp Arg Arg Gln Pro His Phe Leu Leu Lys Phe
245 250 255

Arg Leu Gln Tyr Arg Pro Ala Gln His Pro Ala Trp Ser Thr Val Glu
260 265 270

Pro Ile Gly Leu Glu Glu Val Ile Thr Asp Thr Val Ala Gly Leu Pro
275 280 285

His Ala Val Arg Val Ser Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp
290 295 300

Ser Ala Trp Ser Pro Glu Ala Trp Gly Thr Pro Ser Thr Gly Leu Leu
305 310 315 320

Gln Asp Glu Ile Pro Asp Trp Ser Gln Gly His Gly Gln Gln Leu Glu
325 330 335

Ala Val Val Ala Gln Glu Asp Ser Leu Ala Pro Ala Arg Pro Ser Leu
340 345 350

Gln Pro Asp Pro Arg Pro Leu Asp His Arg Asp Pro Leu Glu Gln Val
355 360 365

Ala Val Leu Ala Ser Leu Gly Ile Phe Ser Cys Leu Gly Leu Ala Val
370 375 380

Gly Ala Leu Ala Leu Gly Leu Trp Leu Arg Leu Arg Arg Ser Gly Lys
385 390 395 400

Glu Gly Pro Gln Lys Pro Gly Leu Leu Ala Pro Met Ile Pro Val Glu
405 410 415

Lys Leu Pro Gly Ile Pro Asn Leu Gln Arg Thr Pro Glu Asn Phe Ser
420 425 430

<210> 3

<211> 349

<212> PRT

<213> artificial

<220>

<223> polypeptide comprising amino acids 23 to 363 of SEQ ID NO: 1
comprising a 8xHIS tag and a serine at a position corresponding
to position 248 of SEQ ID NO: 1 (also referred to as "WT F/L")

<400> 3

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro	Asp	Ser	Gly	Leu	Gly	His	Glu	Leu	Val	Leu	Ala	Gln	Ala	Asp	Ser	50	55	60
Thr	Asp	Glu	Gly	Thr	Tyr	Ile	Cys	Gln	Thr	Leu	Asp	Gly	Ala	Leu	Gly	65	70	75
Gly	Thr	Val	Thr	Leu	Gln	Leu	Gly	Tyr	Pro	Pro	Ala	Arg	Pro	Val	Val	85	90	95
Ser	Cys	Gln	Ala	Ala	Asp	Tyr	Glu	Asn	Phe	Ser	Cys	Thr	Trp	Ser	Pro	100	105	110
Ser	Gln	Ile	Ser	Gly	Leu	Pro	Thr	Arg	Tyr	Leu	Thr	Ser	Tyr	Arg	Lys	115	120	125
Lys	Thr	Val	Leu	Gly	Ala	Asp	Ser	Gln	Arg	Arg	Ser	Pro	Ser	Thr	Gly	130	135	140
Pro	Trp	Pro	Cys	Pro	Gln	Asp	Pro	Leu	Gly	Ala	Ala	Arg	Cys	Val	Val	145	150	155
His	Gly	Ala	Glu	Phe	Trp	Ser	Gln	Tyr	Arg	Ile	Asn	Val	Thr	Glu	Val	165	170	175
Asn	Pro	Leu	Gly	Ala	Ser	Thr	Arg	Leu	Leu	Asp	Val	Ser	Leu	Gln	Ser	180	185	190
Ile	Leu	Arg	Pro	Asp	Pro	Pro	Gln	Gly	Leu	Arg	Val	Glu	Ser	Val	Pro	195	200	205
Gly	Tyr	Pro	Arg	Arg	Leu	Arg	Ala	Ser	Trp	Thr	Tyr	Pro	Ala	Ser	Trp	210	215	220
Pro	Ser	Gln	Pro	His	Phe	Leu	Leu	Lys	Phe	Arg	Leu	Gln	Tyr	Arg	Pro	225	230	235
Ala	Gln	His	Pro	Ala	Trp	Ser	Thr	Val	Glu	Pro	Ala	Gly	Leu	Glu	Glu	245	250	255
Val	Ile	Thr	Asp	Ala	Val	Ala	Gly	Leu	Pro	His	Ala	Val	Arg	Val	Ser	260	265	270
Ala	Arg	Asp	Phe	Leu	Asp	Ala	Gly	Thr	Trp	Ser	Thr	Trp	Ser	Pro	Glu	275	280	285
Ala	Trp	Gly	Thr	Pro	Ser	Thr	Gly	Thr	Ile	Pro	Lys	Glu	Ile	Pro	Ala	290	295	300
Trp	Gly	Gln	Leu	His	Thr	Gln	Pro	Glu	Val	Glu	Pro	Gln	Val	Asp	Ser	305	310	315

Pro Ala Pro Pro Arg Pro Ser Leu Gln Pro His Pro Arg Leu Leu Asp
325 330 335

His Arg Asp Ser Val His His His His His His His His
340 345

<210> 4
<211> 422
<212> PRT
<213> Homo sapiens

<400> 4

Met Ser Ser Ser Cys Ser Gly Leu Ser Arg Val Leu Val Ala Val Ala
1 5 10 15

Thr Ala Leu Val Ser Ala Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro
20 25 30

Pro Gly Val Gln Tyr Gly Gln Pro Gly Arg Ser Val Lys Leu Cys Cys
35 40 45

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

Pro Lys Leu Leu Gln Gly Pro Asp Ser Gly Leu Gly His Glu Leu Val
65 70 75 80

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

Leu Asp Gly Ala Leu Gly Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro
100 105 110

Pro Ala Arg Pro Val Val Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe
115 120 125

Ser Cys Thr Trp Ser Pro Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr
130 135 140

Leu Thr Ser Tyr Arg Lys Lys Thr Val Leu Gly Ala Asp Ser Gln Arg
145 150 155 160

Arg Ser Pro Ser Thr Gly Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly
165 170 175

Ala Ala Arg Cys Val Val His Gly Ala Glu Phe Trp Ser Gln Tyr Arg
180 185 190

Ile Asn Val Thr Glu Val Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu
195 200 205

Asp Val Ser Leu Gln Ser Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu

210

215

220

Arg Val Glu Ser Val Pro Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp
 225 230 235 240

Thr Tyr Pro Ala Ser Trp Pro Cys Gln Pro His Phe Leu Leu Lys Phe
 245 250 255

Arg Leu Gln Tyr Arg Pro Ala Gln His Pro Ala Trp Ser Thr Val Glu
 260 265 270

Pro Ala Gly Leu Glu Glu Val Ile Thr Asp Ala Val Ala Gly Leu Pro
 275 280 285

His Ala Val Arg Val Ser Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp
 290 295 300

Ser Thr Trp Ser Pro Glu Ala Trp Gly Thr Pro Ser Thr Gly Thr Ile
 305 310 315 320

Pro Lys Glu Ile Pro Ala Trp Gly Gln Leu His Thr Gln Pro Glu Val
 325 330 335

Glu Pro Gln Val Asp Ser Pro Ala Pro Pro Arg Pro Ser Leu Gln Pro
 340 345 350

His Pro Arg Leu Leu Asp His Arg Asp Ser Val Glu Gln Val Ala Val
 355 360 365

Leu Ala Ser Leu Gly Ile Leu Ser Phe Leu Gly Leu Val Ala Gly Ala
 370 375 380

Leu Ala Leu Gly Leu Trp Leu Arg Leu Arg Arg Gly Gly Lys Asp Gly
 385 390 395 400

Ser Pro Lys Pro Gly Phe Leu Ala Ser Val Ile Pro Val Asp Arg Arg
 405 410 415

Pro Gly Ala Pro Asn Leu
 420

<210> 5
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VL chain of antibody 8E2

<400> 5

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 6
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VL chain of antibody TS-303
<400> 6

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 Gln Ala Ser Gln Asp Val Asp Tyr Trp
20 25 30

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 7
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-305

<400> 7

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 Gln Ala Ser Gln Asp Val Gly Ile Tyr
20 25 30

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 8

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-306

<400> 8

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 Gln Ala Ser Gln Asp Val Asp Lys Tyr
20 25 30

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys

<210> 9
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-307

<400> 9

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 Gln Ala Ser Gln Asp Val Ser Met Tyr
 20 25 30

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 10
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-310

<400> 10

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 Gln Ala Ser Gln Asp Val Ala Met Tyr
 20 25 30

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro

65		70		75		80									
Glu	Asp	Ile	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Tyr	Asp	Asn	Leu	Ser	Pro
				85					90					95	

Thr	Phe	Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys
			100					105		

<210> 11
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VL chain of antibody TS-311

<400> 11

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	Gln	Ala	Ser	Gln	Asp	Val	Ser	Gln	Tyr
			20					25					30		

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

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

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

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

Thr	Phe	Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys
			100					105		

<210> 12
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VL chain of antibody TS-312

<400> 12

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	Gln	Ala	Ser	Gln	Asp	Ile	Gly	Gln	Tyr
			20					25					30		

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

35

40

45

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 13

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-313

<400> 13

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 Gln Ala Ser Gln Asp Val Ser Gly Tyr
20 25 30

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 14

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-322

<400> 14

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

<210> 15
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VL chain of antibody TS-2

<400> 15

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

<210> 16
 <211> 107
 <212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-4

<400> 16

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 17

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-6

<400> 17

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 18

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-7

<400> 18

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 19

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-9

<400> 19

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 20

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-13

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 21

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-14

<400> 21

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 22

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-17

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 23

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-20

<400> 23

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 24

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-21

<400> 24

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 25

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

<220>

<223> amino acid sequence of VL chain of antibody TS-22

<400> 25

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 26
<211> 107
<212> PRT
<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-29

<400> 26

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

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

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

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

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Ser Glu Glu Gln Ser Pro

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 27

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-32

<400> 27

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

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

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

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

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

Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 28

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-49

<400> 28

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

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

Tyr Asp Ala Ser Asn Leu Gln Thr Gly Val Pro Ser Arg Phe Ser Gly

50

55

60

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

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

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

<210> 29

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-51

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

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

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

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

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

Phe Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 30

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-55

<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 Gln Ala Ser Gln Asp Ile Asn Asn Tyr

20

25

30

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

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

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

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

Ala Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 31

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-57

<400> 31

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

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

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

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

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

Leu Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 32

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-58

<400> 32

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

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

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

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

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

Phe Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 33

<211> 107

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VL chain of antibody TS-63

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

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

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

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

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

Asn Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 34
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VL chain of antibody TS-64

<400> 34

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

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

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

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

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

Gln Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 35
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of consensus of VL chain of 8E2 antibody and derivatives

<220>
<221> VARIANT
<222> (29)..(29)
<223> X=I or V

<220>
<221> VARIANT
<222> (30)..(30)
<223> X=N or D or G or S or A or H

<220>
<221> VARIANT
<222> (31)..(31)
<223> X=N or Y or I or K or M or Q or G or H

<220>
<221> VARIANT
<222> (32)..(32)
<223> X=Y or W

<220>
 <221> VARIANT
 <222> (33)..(33)
 <223> X=L or V or I or M

<220>
 <221> VARIANT
 <222> (34)..(34)
 <223> X=N or E

<220>
 <221> VARIANT
 <222> (89)..(89)
 <223> X=Q or E or S or T

<220>
 <221> VARIANT
 <222> (91)..(91)
 <223> X=Y or A or H or F or N or S or W

<220>
 <221> VARIANT
 <222> (92)..(92)
 <223> X=D or E

<220>
 <221> VARIANT
 <222> (93)..(93)
 <223> X=N or D or F or S or E or T

<220>
 <221> VARIANT
 <222> (94)..(94)
 <223> X=L or Q

<220>
 <221> VARIANT
 <222> (95)..(95)
 <223> X=S or A or W or T or M or Q

<220>
 <221> VARIANT
 <222> (97)..(97)
 <223> X=T or E or F or A or L or N or Q

<400> 35

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	Gln	Ala	Ser	Gln	Asp	Xaa	Xaa	Xaa	Xaa
		20					25					30			

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

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

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

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

Xaa	Phe	Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys
			100					105		

<210> 36
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of consensus of VL chain of 8E2 antibody and select derivatives

<220>
 <221> VARIANT
 <222> (29)..(29)
 <223> X=I or V

<220>
 <221> VARIANT
 <222> (30)..(30)
 <223> X=D or N

<220>
 <221> VARIANT
 <222> (31)..(31)
 <223> X=K or N

<220>
 <221> VARIANT
 <222> (33)..(33)
 <223> X=L or V

<220>
 <221> VARIANT
 <222> (34)..(34)
 <223> X=N or E

<220>
 <221> VARIANT
 <222> (91)..(91)
 <223> X=Y or A or H

<220>
 <221> VARIANT
 <222> (92)..(92)
 <223> X=D or E

<220>
 <221> VARIANT
 <222> (93)..(93)
 <223> X=N or D or F or N or S

<220>
 <221> VARIANT
 <222> (94)..(94)
 <223> X=L or Q

<220>
 <221> VARIANT
 <222> (95)..(95)
 <223> X=S or W

<220>
<221> VARIANT
<222> (97)..(97)
<223> X=T or F

<400> 36

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 Gln Ala Ser Gln Asp Xaa Xaa Xaa Tyr
20 25 30

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

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

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

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

Xaa Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
100 105

<210> 37
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody 8E2

<400> 37

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 38
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-66

<400> 38

Glu Val Gln Leu Leu 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 Ala Trp Trp
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 39
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-69

<400> 39

Glu Val Gln Leu Leu 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 Gly Trp Trp
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 40

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-71

<400> 40

Glu Val Gln Leu Leu 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 Trp Arg Trp
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 41

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

<220>
<223> amino acid sequence of VH chain of antibody TS-76

<400> 41

Glu Val Gln Leu Leu 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 Trp Arg Trp
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 42
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-79

<400> 42

Glu Val Gln Leu Leu 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 Ala Trp Phe
20 25 30

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

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

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

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

Ala	Lys	Gly	Pro	Gly	Trp	Gly	Ser	Phe	Asp	Leu	Trp	Gly	Arg	Gly	Thr
			100					105					110		

Leu	Val	Thr	Val	Ser	Ser
					115

<210> 43
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-82

<400> 43

Glu	Val	Gln	Leu	Leu	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	Trp	Arg	Trp
			20					25					30		

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

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

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

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

Ala	Lys	Gly	Pro	Gly	Trp	Gly	Ser	Phe	Asp	Leu	Trp	Gly	Arg	Gly	Thr
			100					105					110		

Leu	Val	Thr	Val	Ser	Ser
					115

<210> 44
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-88

<400> 44

Glu	Val	Gln	Leu	Leu	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	Trp	Arg	Trp
	20							25					30		
Ser	Thr	Thr	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
	35						40					45			
Ser	Ser	Ile	Val	Pro	Ser	Gly	Gly	His	Thr	Gln	Tyr	Ala	Asp	Ser	Val
	50					55					60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr
65					70					75					80
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85						90					95	
Ala	Lys	Gly	Pro	Gly	Trp	Gly	Ser	Phe	Asp	Leu	Trp	Gly	Arg	Gly	Thr
			100					105					110		
Leu	Val	Thr	Val	Ser	Ser										
	115														

<210> 45
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-89
 <400> 45

Glu	Val	Gln	Leu	Leu	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	Trp	Arg	Trp
		20						25					30		
Ser	Ile	Thr	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
	35						40					45			
Ser	Ser	Ile	Val	Pro	Ser	Gly	Gly	His	Thr	Gln	Tyr	Ala	Asp	Ser	Val
	50					55					60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr
65					70					75					80
Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85						90					95	
Ala	Lys	Gly	Pro	Gly	Trp	Gly	Ser	Phe	Asp	Leu	Trp	Gly	Arg	Gly	Thr
			100					105					110		

Leu Val Thr Val Ser Ser
115

<210> 46
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-91

<400> 46

Glu Val Gln Leu Leu 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 Gly Trp Trp
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 47
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-92

<400> 47

Glu Val Gln Leu Leu 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 Trp Trp
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 48

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-97

<400> 48

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

Ser Ser Ile Val Pro Trp Ala Asp Tyr Thr Gln Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 49

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-101

<400> 49

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 50

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-103

<400> 50

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
 100 105 110

Leu Val Thr Val Ser Ser
 115

<210> 51
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-104

<400> 51

Glu Val Gln Leu Leu 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 Trp Tyr
 20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
 100 105 110

Leu Val Thr Val Ser Ser
 115

<210> 52
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-107

<400> 52

Glu Val Gln Leu Leu 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 Trp Tyr

20

25

30

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

Ser Ser Ile Val Pro Trp Gly Asp Phe Thr Gln Tyr Ala Asp Ser Val
 50 55 60

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
 100 105 110

Leu Val Thr Val Ser Ser
 115

<210> 53

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-108

<400> 53

Glu Val Gln Leu Leu 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 Trp Tyr
 20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
 100 105 110

Leu Val Thr Val Ser Ser
 115

<210> 54
<211> 118
<212> PRT
<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-115

<400> 54

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 55
<211> 118
<212> PRT
<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-129

<400> 55

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

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

Leu Val Thr Val Ser Ser
115

<210> 56
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-133

<400> 56

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Pro Val Asp Trp Gly Arg Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 57
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-134

<400> 57

Glu Val Gln Leu Leu 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 Trp Tyr
 20 25 30
 Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Ser Ile Val Pro Ser Gly Gly His Thr Gln Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Lys Pro Glu Asp Trp Gly Leu Phe Asp Leu Trp Gly Arg Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ser
 115
 <210> 58
 <211> 118
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> amino acid sequence of VH chain of antibody TS-135
 <400> 58
 Glu Val Gln Leu Leu 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 Trp Tyr
 20 25 30
 Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Ser Ile Val Pro Ser Gly Gly His Thr Gln Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Lys Pro Leu Asp Trp Gly Leu Phe Asp Leu Trp Gly Arg Gly Thr

100

105

110

Leu Val Thr Val Ser Ser
115

<210> 59

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-136

<400> 59

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Pro Leu Asp Trp Gly Arg Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 60

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-140

<400> 60

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

Ser Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

35

40

45

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

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

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

Ala Lys Pro Asn Asp Trp Gly Leu Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 61

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-143

<400> 61

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Pro His Asp Trp Gly Leu Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 62

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-151

<400> 62

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Pro His Asp Trp Gly Arg Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 63

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-156

<400> 63

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

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

Leu Val Thr Val Ser Ser
115

<210> 64
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-213

<400> 64

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Gln Phe Ala Val Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 65
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody TS-214

<400> 65

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Trp Phe Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 66

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-215

<400> 66

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Trp Gln Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser

<210> 67
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-218

<400> 67

Glu Val Gln Leu Leu 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 Trp Tyr
 20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Trp Glu Trp Gly Arg Gly Thr
 100 105 110

Leu Val Thr Val Ser Ser
 115

<210> 68
 <211> 118
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of VH chain of antibody TS-221

<400> 68

Glu Val Gln Leu Leu 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 Trp Tyr
 20 25 30

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

Ser Ser Ile Val Pro Ser Gly Gly His Thr Gln Tyr Ala Asp Ser Val

50

55

60

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Trp Tyr Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 69

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-222

<400> 69

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Thr Phe Ala Tyr Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 70

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody TS-224

<400> 70

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Trp Thr Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 71

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of consensus of VH chain of 8E2 antibody and derivatives

<220>

<221> misc_feature

<222> (30)..(30)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> VARIANT

<222> (31)..(31)

<223> X=W or R

<220>

<221> VARIANT

<222> (32)..(32)

<223> X=Y or W or F

<220>

<221> VARIANT

<222> (34)..(34)

<223> X=M or I or V or T or L

<220>

<221> VARIANT

<222> (35)..(35)

<223> X=T or A

<220>

<221> VARIANT

<222> (53)..(53)

<223> X=S or W or Y or H

<220>

<221> VARIANT

<222> (54)..(54)

<223> X=G or A

<220>

<221> VARIANT

<222> (55)..(55)

<223> X=G or D or T

<220>

<221> VARIANT

<222> (56)..(56)

<223> X=H or Y or L or I or F

<220>

<221> misc_feature

<222> (57)..(57)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> VARIANT

<222> (99)..(99)

<223> X=G or P

<220>

<221> VARIANT

<222> (100)..(100)

<223> X=P or E or V or L or N or H or E

<220>

<221> VARIANT

<222> (101)..(101)

<223> X=G or D

<220>

<221> VARIANT

<222> (104)..(104)

<223> X=S or M or R or L or Q or T

<220>

<221> VARIANT

<222> (106)..(106)

<223> X=D or A or W

<220>

<221> VARIANT

<222> (107)..(107)

<223> X=L or V or F or Q or E or Y or T

<400> 71

Glu Val Gln Leu Leu 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 Xaa Xaa Xaa
20 25 30

Ser Xaa Xaa Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val

35

40

45

Ser Ser Ile Val Pro Xaa Xaa Xaa Xaa Thr Gln Tyr Ala Asp Ser Val
50 55 60

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

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

Ala Lys Xaa Xaa Xaa Trp Gly Xaa Phe Xaa Xaa Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 72
<211> 118
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of consensus of VH chain of 8E2 antibody and
select derivatives

<220>
<221> VARIANT
<222> (53)..(53)
<223> X=W or S

<220>
<221> misc_feature
<222> (54)..(54)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> VARIANT
<222> (55)..(55)
<223> X=G or D or T

<220>
<221> VARIANT
<222> (56)..(56)
<223> X=H or L

<220>
<221> misc_feature
<222> (57)..(57)
<223> Xaa can be any naturally occurring amino acid

<220>
<221> VARIANT
<222> (99)..(99)
<223> X=G or P

<220>
<221> VARIANT
<222> (100)..(100)
<223> X=P or E or L

<220>
<221> VARIANT
<222> (101)..(101)
<223> X=G or D

<220>
<221> VARIANT
<222> (104)..(104)
<223> X=S or L or R

<400> 72

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Xaa Xaa Xaa Trp Gly Xaa Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

Leu Val Thr Val Ser Ser
115

<210> 73
<211> 114
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VL chain of antibody 8E4

<400> 73

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

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

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

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

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

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Gly Gly Ser
85 90 95

Asn Asn Ala Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
100 105 110

Gln Pro

<210> 74
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VH chain of antibody 8E4

<400> 74

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

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

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser
115 120 125

<210> 75
<211> 107
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of VL chain of antibody 8D10

<400> 75

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

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

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

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

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

Ser Phe Gly Pro Gly Thr Thr Val Asp Ile Lys
100 105

<210> 76

<211> 118

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of VH chain of antibody 8D10

<400> 76

Glu Val Gln Leu Leu 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 Arg Tyr
20 25 30

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

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

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

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

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

Leu Val Thr Val Ser Ser
115

<210> 77
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of consensus of CDR1 of VL chain of 8E2
antibody and derivatives

<220>
<221> VARIANT
<222> (6)..(6)
<223> X=I or V

<220>
<221> VARIANT
<222> (7)..(7)
<223> X=N or D or G or S or A or H

<220>
<221> VARIANT
<222> (8)..(8)
<223> X=N or Y or I or K or M or Q or G or H

<220>
<221> VARIANT
<222> (9)..(9)
<223> X=Y or W

<220>
<221> VARIANT
<222> (10)..(10)
<223> X=L or V or I or M

<220>
<221> VARIANT
<222> (11)..(11)
<223> X=N or E

<400> 77

Gln Ala Ser Gln Asp Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10

<210> 78
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of consensus of CDR3 of VL chain of 8E2
antibody and derivatives

<220>
<221> VARIANT
<222> (1)..(1)
<223> X=Q or E or S or T

<220>
<221> VARIANT
<222> (3)..(3)

<223> X=Y or A or H or F or N or S or W

<220>

<221> VARIANT

<222> (4)..(4)

<223> X=D or E

<220>

<221> VARIANT

<222> (5)..(5)

<223> X=N or D or F or S or E or T

<220>

<221> VARIANT

<222> (6)..(6)

<223> X=L or Q

<220>

<221> misc_feature

<222> (7)..(7)

<223> Xaa can be any naturally occurring amino acid

<220>

<221> VARIANT

<222> (9)..(9)

<223> X=T or F or A or L or N or Q

<400> 78

Xaa Gln Xaa Xaa Xaa Xaa Xaa Pro Xaa

1 5

<210> 79

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of consensus of CDR1 of VH chain of 8E2 antibody and derivatives

<220>

<221> VARIANT

<222> (1)..(1)

<223> X=W or R

<220>

<221> VARIANT

<222> (2)..(2)

<223> X=Y or W or F

<220>

<221> VARIANT

<222> (4)..(4)

<223> X=M or I or V or T or L

<220>

<221> VARIANT

<222> (5)..(5)

<223> X=T or A

<400> 79

Xaa Xaa Ser Xaa Xaa

1 5

<210> 80
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of consensus of CDR2 of VH chain of 8E2
antibody and derivatives

<220>
<221> VARIANT
<222> (5)..(5)
<223> X=S or W or Y or H

<220>
<221> VARIANT
<222> (6)..(6)
<223> X=G or A

<220>
<221> VARIANT
<222> (7)..(7)
<223> X=G or D or T

<220>
<221> VARIANT
<222> (8)..(8)
<223> X=H or Y or L or I or F

<400> 80

Ser Ile Val Pro Xaa Xaa Xaa Xaa Thr Gln Tyr Ala Asp Ser Val Lys
1 5 10 15

Gly

<210> 81
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of consensus of CDR3 of VH chain of 8E2
antibody and derivatives

<220>
<221> VARIANT
<222> (1)..(1)
<223> X=G or P

<220>
<221> VARIANT
<222> (2)..(2)
<223> X=P or E or V or L or N or H or E

<220>
<221> VARIANT
<222> (3)..(3)
<223> X=G or D

<220>
<221> VARIANT

<222> (6)..(6)
<223> X=S or M or R or L or Q or T

<220>
<221> VARIANT
<222> (8)..(8)
<223> X=D or A or W

<220>
<221> VARIANT
<222> (9)..(9)
<223> X=L or V or F or Q or E or Y or T

<400> 81

Xaa Xaa Xaa Trp Gly Xaa Phe Xaa Xaa
1 5

<210> 82
<211> 424
<212> PRT
<213> Mus musculus

<400> 82

Met Ser Ser Ser Cys Ser Gly Leu Thr Arg Val Leu Val Ala Val Ala
1 5 10 15

Thr Ala Leu Val Ser Ser Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro
20 25 30

Pro Gly Val Gln Tyr Gly Gln Pro Gly Arg Pro Val Met Leu Cys Cys
35 40 45

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

Ser Arg Leu Leu Gln Gly Pro Asp Ser Gly Leu Gly His Arg Leu Val
65 70 75 80

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

Leu Asp Gly Val Ser Gly Gly Met Val Thr Leu Lys Leu Gly Phe Pro
100 105 110

Pro Ala Arg Pro Glu Val Ser Cys Gln Ala Val Asp Tyr Glu Asn Phe
115 120 125

Ser Cys Thr Trp Ser Pro Gly Gln Val Ser Gly Leu Pro Thr Arg Tyr
130 135 140

Leu Thr Ser Tyr Arg Lys Lys Thr Leu Pro Gly Ala Glu Ser Gln Arg
145 150 155 160

Glu Ser Pro Ser Thr Gly Pro Trp Pro Cys Pro Gln Asp Pro Leu Glu
165 170 175

Ala Ser Arg Cys Val Val His Gly Ala Glu Phe Trp Ser Glu Tyr Arg
180 185 190

Ile Asn Val Thr Glu Val Asn Pro Leu Gly Ala Ser Thr Cys Leu Leu
195 200 205

Asp Val Arg Leu Gln Ser Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu
210 215 220

Arg Val Glu Ser Val Pro Gly Tyr Pro Arg Arg Leu His Ala Ser Trp
225 230 235 240

Thr Tyr Pro Ala Ser Trp Arg Arg Gln Pro His Phe Leu Leu Lys Phe
245 250 255

Arg Leu Gln Tyr Arg Pro Ala Gln His Pro Ala Trp Ser Thr Val Glu
260 265 270

Pro Ile Gly Leu Glu Glu Val Ile Thr Asp Thr Val Ala Gly Leu Pro
275 280 285

His Ala Val Arg Val Ser Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp
290 295 300

Ser Ala Trp Ser Pro Glu Ala Trp Gly Thr Pro Ser Thr Gly Leu Leu
305 310 315 320

Gln Asp Glu Ile Pro Asp Trp Ser Gln Gly His Gly Gln Gln Leu Glu
325 330 335

Ala Val Val Ala Gln Glu Asp Ser Leu Ala Pro Ala Arg Pro Ser Leu
340 345 350

Gln Pro Asp Pro Arg Pro Leu Asp His Arg Asp Pro Leu Glu Gln Val
355 360 365

Ala Val Leu Ala Ser Leu Gly Ile Phe Ser Cys Leu Gly Leu Ala Val
370 375 380

Gly Ala Leu Ala Leu Gly Leu Trp Leu Arg Leu Arg Arg Ser Gly Lys
385 390 395 400

Glu Gly Pro Gln Lys Pro Gly Leu Leu Ala Pro Met Ile Pro Val Glu
405 410 415

Lys Leu Pro Gly Ile Pro Asn Leu
420

<210> 83
<211> 214

<212> PRT
<213> Artificial Sequence

<220>

<223> amino acid sequence of heavy chain of antibody 8E2

<400> 83

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 84

<211> 302

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of light chain of antibody 8E2

<400> 84

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

Ala Lys Gly Pro Gly Trp Gly Ser Phe Asp Leu Trp Gly Arg Gly Thr
100 105 110

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

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
130 135 140

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

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

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

Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys
210 215 220

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

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

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

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

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

<210> 85

<211> 304

<212> PRT

<213> Artificial Sequence

<220>

<223> polypeptide comprising amino acids 23 to 318 of Homo sapiens
IL-11R? (SEQ ID NO: 1), a 8xHIS tag and a serine at a position
corresponding to position 248 of SEQ ID NO:1 (also referred to as
"WT D1/2")

<400> 85

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val
85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val

165

170

175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
 180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
 195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
 210 215 220

Pro Ser Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
 225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
 245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
 260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
 275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly His His His His His His His His
 290 295 300

<210> 86

<211> 353

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of a polypeptide comprising amino acids
 23-110 of SEQ ID NO: 1 and amino acids 111-367 of SEQ ID NO: 82
 in which there is a serine at a position corresponding to
 position 206 of SEQ ID NO: 82 and a HIS tag

<400> 86

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
 1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
 20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
 50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
 65 70 75 80

Gly	Thr	Val	Thr	Leu	Gln	Leu	Gly	Phe	Pro	Pro	Ala	Arg	Pro	Glu	Val	85	90	95
Ser	Cys	Gln	Ala	Val	Asp	Tyr	Glu	Asn	Phe	Ser	Cys	Thr	Trp	Ser	Pro	100	105	110
Gly	Gln	Val	Ser	Gly	Leu	Pro	Thr	Arg	Tyr	Leu	Thr	Ser	Tyr	Arg	Lys	115	120	125
Lys	Thr	Leu	Pro	Gly	Ala	Glu	Ser	Gln	Arg	Glu	Ser	Pro	Ser	Thr	Gly	130	135	140
Pro	Trp	Pro	Cys	Pro	Gln	Asp	Pro	Leu	Glu	Ala	Ser	Arg	Cys	Val	Val	145	150	155
His	Gly	Ala	Glu	Phe	Trp	Ser	Glu	Tyr	Arg	Ile	Asn	Val	Thr	Glu	Val	165	170	175
Asn	Pro	Leu	Gly	Ala	Ser	Thr	Ser	Leu	Leu	Asp	Val	Arg	Leu	Gln	Ser	180	185	190
Ile	Leu	Arg	Pro	Asp	Pro	Pro	Gln	Gly	Leu	Arg	Val	Glu	Ser	Val	Pro	195	200	205
Gly	Tyr	Pro	Arg	Arg	Leu	His	Ala	Ser	Trp	Thr	Tyr	Pro	Ala	Ser	Trp	210	215	220
Arg	Arg	Gln	Pro	His	Phe	Leu	Leu	Lys	Phe	Arg	Leu	Gln	Tyr	Arg	Pro	225	230	235
Ala	Gln	His	Pro	Ala	Trp	Ser	Thr	Val	Glu	Pro	Ile	Gly	Leu	Glu	Glu	245	250	255
Val	Ile	Thr	Asp	Ala	Val	Ala	Gly	Leu	Pro	His	Ala	Val	Arg	Val	Ser	260	265	270
Ala	Arg	Asp	Phe	Leu	Asp	Ala	Gly	Thr	Trp	Ser	Ala	Trp	Ser	Pro	Glu	275	280	285
Ala	Trp	Gly	Thr	Pro	Ser	Thr	Gly	Pro	Leu	Gln	Asp	Glu	Ile	Pro	Asp	290	295	300
Trp	Ser	Gln	Gly	His	Gly	Gln	Gln	Leu	Glu	Ala	Val	Val	Ala	Gln	Glu	305	310	315
Asp	Ser	Pro	Ala	Pro	Ala	Arg	Pro	Ser	Leu	Gln	Pro	Asp	Pro	Arg	Pro	325	330	335
Leu	Asp	His	Arg	Asp	Pro	Leu	Glu	Gln	His	His	His	His	His	His	His	340	345	350

His

<210> 87

<211> 353

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of a polypeptide comprising amino acids
23-215 of SEQ ID NO: 1 and amino acids 216-367 of SEQ ID NO: 82
and a HIS tag

<400> 87

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val
85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
195 200 205

Gly Tyr Pro Arg Arg Leu His Ala Ser Trp Thr Tyr Pro Ala Ser Trp
210 215 220

Arg Arg Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ile Gly Leu Glu Glu
245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Ala Trp Ser Pro Glu
275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly Pro Leu Gln Asp Glu Ile Pro Asp
290 295 300

Trp Ser Gln Gly His Gly Gln Gln Leu Glu Ala Val Val Ala Gln Glu
305 310 315 320

Asp Ser Pro Ala Pro Ala Arg Pro Ser Leu Gln Pro Asp Pro Arg Pro
325 330 335

Leu Asp His Arg Asp Pro Leu Glu Gln His His His His His His His
340 345 350

His

<210> 88
<211> 353
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of a polypeptide comprising amino acids
23-318 of SEQ ID NO: 1 in which there is a serine at a position
corresponding to position 226 of SEQ ID NO: 1 and amino acids
319-367 of SEQ ID NO: 82 and a HIS tag

<400> 88

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr	Asp	Glu	Gly	Thr	Tyr	Ile	Cys	Gln	Thr	Leu	Asp	Gly	Ala	Leu	Gly	65	70	75	80
Gly	Thr	Val	Thr	Leu	Gln	Leu	Gly	Tyr	Pro	Pro	Ala	Arg	Pro	Val	Val	85	90	95	
Ser	Cys	Gln	Ala	Ala	Asp	Tyr	Glu	Asn	Phe	Ser	Cys	Thr	Trp	Ser	Pro	100	105	110	
Ser	Gln	Ile	Ser	Gly	Leu	Pro	Thr	Arg	Tyr	Leu	Thr	Ser	Tyr	Arg	Lys	115	120	125	
Lys	Thr	Val	Leu	Gly	Ala	Asp	Ser	Gln	Arg	Arg	Ser	Pro	Ser	Thr	Gly	130	135	140	
Pro	Trp	Pro	Cys	Pro	Gln	Asp	Pro	Leu	Gly	Ala	Ala	Arg	Cys	Val	Val	145	150	155	160
His	Gly	Ala	Glu	Phe	Trp	Ser	Gln	Tyr	Arg	Ile	Asn	Val	Thr	Glu	Val	165	170	175	
Asn	Pro	Leu	Gly	Ala	Ser	Thr	Arg	Leu	Leu	Asp	Val	Ser	Leu	Gln	Ser	180	185	190	
Ile	Leu	Arg	Pro	Asp	Pro	Pro	Gln	Gly	Leu	Arg	Val	Glu	Ser	Val	Pro	195	200	205	
Gly	Tyr	Pro	Arg	Arg	Leu	Arg	Ala	Ser	Trp	Thr	Tyr	Pro	Ala	Ser	Trp	210	215	220	
Pro	Ser	Gln	Pro	His	Phe	Leu	Leu	Lys	Phe	Arg	Leu	Gln	Tyr	Arg	Pro	225	230	235	240
Ala	Gln	His	Pro	Ala	Trp	Ser	Thr	Val	Glu	Pro	Ala	Gly	Leu	Glu	Glu	245	250	255	
Val	Ile	Thr	Asp	Ala	Val	Ala	Gly	Leu	Pro	His	Ala	Val	Arg	Val	Ser	260	265	270	
Ala	Arg	Asp	Phe	Leu	Asp	Ala	Gly	Thr	Trp	Ser	Thr	Trp	Ser	Pro	Glu	275	280	285	
Ala	Trp	Gly	Thr	Pro	Ser	Thr	Gly	Pro	Leu	Gln	Asp	Glu	Ile	Pro	Asp	290	295	300	
Trp	Ser	Gln	Gly	His	Gly	Gln	Gln	Leu	Glu	Ala	Val	Val	Ala	Gln	Glu	305	310	315	320
Asp	Ser	Pro	Ala	Pro	Ala	Arg	Pro	Ser	Leu	Gln	Pro	Asp	Pro	Arg	Pro	325	330	335	

Leu Asp His Arg Asp Pro Leu Glu Gln His His His His His His His
340 345 350

His

<210> 89

<211> 348

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of a polypeptide comprising amino acids
24-215 of SEQ ID NO: 82 in which there is a serine at a position
corresponding to position 206 of SEQ ID NO: 82 and amino acids
216-363 of SEQ ID NO: 1 and a HIS tag

<400> 89

Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly Gln
1 5 10 15

Pro Gly Arg Pro Val Met Leu Cys Cys Pro Gly Val Ser Ala Gly Thr
20 25 30

Pro Val Ser Trp Phe Arg Asp Gly Asp Ser Arg Leu Leu Gln Gly Pro
35 40 45

Asp Ser Gly Leu Gly His Arg Leu Val Leu Ala Gln Val Asp Ser Pro
50 55 60

Asp Glu Gly Thr Tyr Val Cys Gln Thr Leu Asp Gly Val Ser Gly Gly
65 70 75 80

Met Val Thr Leu Lys Leu Gly Phe Pro Pro Ala Arg Pro Glu Val Ser
85 90 95

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

Gln Val Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys Lys
115 120 125

Thr Leu Pro Gly Ala Glu Ser Gln Arg Glu Ser Pro Ser Thr Gly Pro
130 135 140

Trp Pro Cys Pro Gln Asp Pro Leu Glu Ala Ser Arg Cys Val Val His
145 150 155 160

Gly Ala Glu Phe Trp Ser Glu Tyr Arg Ile Asn Val Thr Glu Val Asn
165 170 175

Pro Leu Gly Ala Ser Thr Ser Leu Leu Asp Val Arg Leu Gln Ser Ile
180 185 190

Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro Gly
195 200 205

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

Ser Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro Ala
225 230 235 240

Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu Val
245 250 255

Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser Ala
260 265 270

Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu Ala
275 280 285

Trp Gly Thr Pro Ser Thr Gly Thr Ile Pro Lys Glu Ile Pro Ala Trp
290 295 300

Gly Gln Leu His Thr Gln Pro Glu Val Glu Pro Gln Val Asp Ser Pro
305 310 315 320

Ala Pro Pro Arg Pro Ser Leu Gln Pro His Pro Arg Leu Leu Asp His
325 330 335

Arg Asp Ser Val His His His His His His His His
340 345

<210> 90
<211> 352
<212> PRT
<213> artificial

<220>
<223> amino acid sequence of Mus musculus sIL-11Ra comprising amino
acids 24 to 367 of SEQ ID NO: 82 comprising a HIS tag and a
serine at a position corresponding to position 206 of SEQ ID NO:
82

<400> 90

Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly Gln
1 5 10 15

Pro Gly Arg Pro Val Met Leu Cys Cys Pro Gly Val Ser Ala Gly Thr
20 25 30

Pro Val Ser Trp Phe Arg Asp Gly Asp Ser Arg Leu Leu Gln Gly Pro
35 40 45

Asp Ser Gly Leu Gly His Arg Leu Val Leu Ala Gln Val Asp Ser Pro

50

55

60

Asp Glu Gly Thr Tyr Val Cys Gln Thr Leu Asp Gly Val Ser Gly Gly
65 70 75 80

Met Val Thr Leu Lys Leu Gly Phe Pro Pro Ala Arg Pro Glu Val Ser
85 90 95

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

Gln Val Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys Lys
115 120 125

Thr Leu Pro Gly Ala Glu Ser Gln Arg Glu Ser Pro Ser Thr Gly Pro
130 135 140

Trp Pro Cys Pro Gln Asp Pro Leu Glu Ala Ser Arg Cys Val Val His
145 150 155 160

Gly Ala Glu Phe Trp Ser Glu Tyr Arg Ile Asn Val Thr Glu Val Asn
165 170 175

Pro Leu Gly Ala Ser Thr Ser Leu Leu Asp Val Arg Leu Gln Ser Ile
180 185 190

Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro Gly
195 200 205

Tyr Pro Arg Arg Leu His Ala Ser Trp Thr Tyr Pro Ala Ser Trp Arg
210 215 220

Arg Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro Ala
225 230 235 240

Gln His Pro Ala Trp Ser Thr Val Glu Pro Ile Gly Leu Glu Glu Val
245 250 255

Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser Ala
260 265 270

Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Ala Trp Ser Pro Glu Ala
275 280 285

Trp Gly Thr Pro Ser Thr Gly Pro Leu Gln Asp Glu Ile Pro Asp Trp
290 295 300

Ser Gln Gly His Gly Gln Gln Leu Glu Ala Val Val Ala Gln Glu Asp
305 310 315 320

Ser Pro Ala Pro Ala Arg Pro Ser Leu Gln Pro Asp Pro Arg Pro Leu

325

330

335

Asp His Arg Asp Pro Leu Glu Gln His His His His His His His His
 340 345 350

<210> 91

<211> 217

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of light chain of antibody 8E4

<400> 91

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

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

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

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

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

Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Gly Gly Ser
 85 90 95

Asn Asn Ala Gly Val Phe Gly Thr Gly Thr Lys Val Thr Val Leu Gly
 100 105 110

Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser Glu
 115 120 125

Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
 130 135 140

Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro Val
 145 150 155 160

Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn Lys
 165 170 175

Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
 180 185 190

His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
 195 200 205

Lys Thr Val Ala Pro Thr Glu Cys Ser
210 215

<210> 92

<211> 453

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of heavy chain of antibody 8E4

<400> 92

Glu Val Gln Leu Leu 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 Trp Tyr
20 25 30

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

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

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

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

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

Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser Ser Ala Ser
115 120 125

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr
130 135 140

Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
145 150 155 160

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
165 170 175

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
180 185 190

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Lys Thr Tyr Thr
195 200 205

Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val

210

215

220

Glu Ser Lys Tyr Gly Pro Pro Cys Pro Pro Cys Pro Ala Pro Glu Phe
 225 230 235 240

Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr
 245 250 255

Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val
 260 265 270

Ser Gln Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly Val
 275 280 285

Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser
 290 295 300

Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu
 305 310 315 320

Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro Ser
 325 330 335

Ser Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro
 340 345 350

Gln Val Tyr Thr Leu Pro Pro Ser Gln Glu Glu Met Thr Lys Asn Gln
 355 360 365

Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala
 370 375 380

Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr
 385 390 395 400

Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Arg Leu
 405 410 415

Thr Val Asp Lys Ser Arg Trp Gln Glu Gly Asn Val Phe Ser Cys Ser
 420 425 430

Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser
 435 440 445

Leu Ser Leu Gly Lys
 450

<210> 93

<211> 214

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of light chain of antibody 8D10

<400> 93

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

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

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

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

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

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

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

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

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

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

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

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

Phe Asn Arg Gly Glu Cys
210

<210> 94

<211> 445

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of heavy chain of antibody 8D10

<400> 94

Glu Val Gln Leu Leu 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 Arg Tyr
20 25 30

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

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

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

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

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

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

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
130 135 140

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

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

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

Ser Leu Gly Thr Lys Thr Tyr Thr Cys Asn Val Asp His Lys Pro Ser
195 200 205

Asn Thr Lys Val Asp Lys Arg Val Glu Ser Lys Tyr Gly Pro Pro Cys
210 215 220

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

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

Val Thr Cys Val Val Val Asp Val Ser Gln Glu Asp Pro Glu Val Gln

260

265

270

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

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

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

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

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

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

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

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

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

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

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

<210> 95

<211> 304

<212> PRT

<213> artificial

<220>

<223> amino acid sequence of SEQ ID NO: 85 comprising a glutamic acid
 at a position corresponding to position 117 of SEQ ID NO: 1

<400> 95

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
 1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
 20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Glu Val
85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
210 215 220

Pro Cys Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly His His His His His His His His
290 295 300

<210> 96
<211> 304

<212> PRT
<213> artificial

<220>

<223> amino acid sequence of SEQ ID NO: 85 comprising an arginine at a position corresponding to position 66 of SEQ ID NO: 1

<400> 96

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

Asp Pro Val Ser Trp Phe Arg Asp Gly Glu Pro Arg Leu Leu Gln Gly
35 40 45

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val
85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
210 215 220

Pro Cys Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly His His His His His His His His
290 295 300

<210> 97

<211> 304

<212> PRT

<213> artificial

<220>

<223> amino acid sequence of SEQ ID NO: 85 comprising a serine at a
position corresponding to position 65 of SEQ ID NO: 1

<400> 97

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val
85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
210 215 220

Pro Cys Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly His His His His His His His His
290 295 300

<210> 98

<211> 304

<212> PRT

<213> artificial

<220>

<223> amino acid sequence of SEQ ID NO: 85 comprising a serine at a
position corresponding to position 101 of SEQ ID NO: 1

<400> 98

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

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

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val

85

90

95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
210 215 220

Pro Cys Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly His His His His His His His His
290 295 300

<210> 99

<211> 304

<212> PRT

<213> artificial

<220>

<223> amino acid sequence of SEQ ID NO: 85 comprising an serine at a position corresponding to position 178 of SEQ ID NO: 1

<400> 99

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
 20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
 50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
 65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val
 85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
 100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
 115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
 130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ser Arg Cys Val Val
 145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
 165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
 180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
 195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
 210 215 220

Pro Cys Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
 225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
 245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
 260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
 275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly His His His His His His His His
290 295 300

<210> 100
<211> 400
<212> PRT
<213> Homo sapiens

<400> 100

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
1 5 10 15

Gln Pro Gly Arg Ser Val Lys Leu Cys Cys Pro Gly Val Thr Ala Gly
20 25 30

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

Pro Asp Ser Gly Leu Gly His Glu Leu Val Leu Ala Gln Ala Asp Ser
50 55 60

Thr Asp Glu Gly Thr Tyr Ile Cys Gln Thr Leu Asp Gly Ala Leu Gly
65 70 75 80

Gly Thr Val Thr Leu Gln Leu Gly Tyr Pro Pro Ala Arg Pro Val Val
85 90 95

Ser Cys Gln Ala Ala Asp Tyr Glu Asn Phe Ser Cys Thr Trp Ser Pro
100 105 110

Ser Gln Ile Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys
115 120 125

Lys Thr Val Leu Gly Ala Asp Ser Gln Arg Arg Ser Pro Ser Thr Gly
130 135 140

Pro Trp Pro Cys Pro Gln Asp Pro Leu Gly Ala Ala Arg Cys Val Val
145 150 155 160

His Gly Ala Glu Phe Trp Ser Gln Tyr Arg Ile Asn Val Thr Glu Val
165 170 175

Asn Pro Leu Gly Ala Ser Thr Arg Leu Leu Asp Val Ser Leu Gln Ser
180 185 190

Ile Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro
195 200 205

Gly Tyr Pro Arg Arg Leu Arg Ala Ser Trp Thr Tyr Pro Ala Ser Trp
210 215 220

Pro Cys Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro
 225 230 235 240

Ala Gln His Pro Ala Trp Ser Thr Val Glu Pro Ala Gly Leu Glu Glu
 245 250 255

Val Ile Thr Asp Ala Val Ala Gly Leu Pro His Ala Val Arg Val Ser
 260 265 270

Ala Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Thr Trp Ser Pro Glu
 275 280 285

Ala Trp Gly Thr Pro Ser Thr Gly Thr Ile Pro Lys Glu Ile Pro Ala
 290 295 300

Trp Gly Gln Leu His Thr Gln Pro Glu Val Glu Pro Gln Val Asp Ser
 305 310 315 320

Pro Ala Pro Pro Arg Pro Ser Leu Gln Pro His Pro Arg Leu Leu Asp
 325 330 335

His Arg Asp Ser Val Glu Gln Val Ala Val Leu Ala Ser Leu Gly Ile
 340 345 350

Leu Ser Phe Leu Gly Leu Val Ala Gly Ala Leu Ala Leu Gly Leu Trp
 355 360 365

Leu Arg Leu Arg Arg Gly Gly Lys Asp Gly Ser Pro Lys Pro Gly Phe
 370 375 380

Leu Ala Ser Val Ile Pro Val Asp Arg Arg Pro Gly Ala Pro Asn Leu
 385 390 395 400

<210> 101
 <211> 410
 <212> PRT
 <213> *Macaca fascicularis*

<400> 101

Ser Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly
 1 5 10 15

Gln Pro Gly Arg Pro Val Met Leu Cys Cys Pro Gly Val Ser Ala Gly
 20 25 30

Thr Pro Val Ser Trp Phe Arg Asp Gly Asp Ser Arg Leu Leu Gln Gly
 35 40 45

Pro Asp Ser Gly Leu Gly His Arg Leu Val Leu Ala Gln Val Asp Ser
 50 55 60

Pro	Asp	Glu	Gly	Thr	Tyr	Val	Cys	Gln	Thr	Leu	Asp	Gly	Val	Ser	Gly	65	70	75	80
Gly	Met	Val	Thr	Leu	Lys	Leu	Gly	Phe	Pro	Pro	Ala	Arg	Pro	Glu	Val	85	90	95	
Ser	Cys	Gln	Ala	Val	Asp	Tyr	Glu	Asn	Phe	Ser	Cys	Thr	Trp	Ser	Pro	100	105	110	
Gly	Gln	Val	Ser	Gly	Leu	Pro	Thr	Arg	Tyr	Leu	Thr	Ser	Tyr	Arg	Lys	115	120	125	
Lys	Thr	Leu	Pro	Gly	Ala	Glu	Ser	Gln	Arg	Glu	Ser	Pro	Ser	Thr	Gly	130	135	140	
Pro	Trp	Pro	Cys	Pro	Gln	Asp	Pro	Leu	Glu	Ala	Ser	Arg	Cys	Val	Val	145	150	155	160
His	Gly	Ala	Glu	Phe	Trp	Ser	Glu	Tyr	Arg	Ile	Asn	Val	Thr	Glu	Val	165	170	175	
Asn	Pro	Leu	Gly	Ala	Ser	Thr	Cys	Leu	Leu	Asp	Val	Arg	Leu	Gln	Ser	180	185	190	
Ile	Leu	Arg	Pro	Asp	Pro	Pro	Gln	Gly	Leu	Arg	Val	Glu	Ser	Val	Pro	195	200	205	
Gly	Tyr	Pro	Arg	Arg	Leu	His	Ala	Ser	Trp	Thr	Tyr	Pro	Ala	Ser	Trp	210	215	220	
Arg	Arg	Gln	Pro	His	Phe	Leu	Leu	Lys	Phe	Arg	Leu	Gln	Tyr	Arg	Pro	225	230	235	240
Ala	Gln	His	Pro	Ala	Trp	Ser	Thr	Val	Glu	Pro	Ile	Gly	Leu	Glu	Glu	245	250	255	
Val	Ile	Thr	Asp	Thr	Val	Ala	Gly	Leu	Pro	His	Ala	Val	Arg	Val	Ser	260	265	270	
Ala	Arg	Asp	Phe	Leu	Asp	Ala	Gly	Thr	Trp	Ser	Ala	Trp	Ser	Pro	Glu	275	280	285	
Ala	Trp	Gly	Thr	Pro	Ser	Thr	Gly	Leu	Leu	Gln	Asp	Glu	Ile	Pro	Asp	290	295	300	
Trp	Ser	Gln	Gly	His	Gly	Gln	Gln	Leu	Glu	Ala	Val	Val	Ala	Gln	Glu	305	310	315	320
Asp	Ser	Leu	Ala	Pro	Ala	Arg	Pro	Ser	Leu	Gln	Pro	Asp	Pro	Arg	Pro	325	330	335	

Leu Asp His Arg Asp Pro Leu Glu Gln Val Ala Val Leu Ala Ser Leu
340 345 350

Gly Ile Phe Ser Cys Leu Gly Leu Ala Val Gly Ala Leu Ala Leu Gly
355 360 365

Leu Trp Leu Arg Leu Arg Arg Ser Gly Lys Glu Gly Pro Gln Lys Pro
370 375 380

Gly Leu Leu Ala Pro Met Ile Pro Val Glu Lys Leu Pro Gly Ile Pro
385 390 395 400

Asn Leu Gln Arg Thr Pro Glu Asn Phe Ser
405 410

<210> 102
<211> 401
<212> PRT
<213> Mus musculus

<400> 102

Ser Pro Cys Pro Gln Ala Trp Gly Pro Pro Gly Val Gln Tyr Gly Gln
1 5 10 15

Pro Gly Arg Pro Val Met Leu Cys Cys Pro Gly Val Ser Ala Gly Thr
20 25 30

Pro Val Ser Trp Phe Arg Asp Gly Asp Ser Arg Leu Leu Gln Gly Pro
35 40 45

Asp Ser Gly Leu Gly His Arg Leu Val Leu Ala Gln Val Asp Ser Pro
50 55 60

Asp Glu Gly Thr Tyr Val Cys Gln Thr Leu Asp Gly Val Ser Gly Gly
65 70 75 80

Met Val Thr Leu Lys Leu Gly Phe Pro Pro Ala Arg Pro Glu Val Ser
85 90 95

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

Gln Val Ser Gly Leu Pro Thr Arg Tyr Leu Thr Ser Tyr Arg Lys Lys
115 120 125

Thr Leu Pro Gly Ala Glu Ser Gln Arg Glu Ser Pro Ser Thr Gly Pro
130 135 140

Trp Pro Cys Pro Gln Asp Pro Leu Glu Ala Ser Arg Cys Val Val His
145 150 155 160

Gly Ala Glu Phe Trp Ser Glu Tyr Arg Ile Asn Val Thr Glu Val Asn

165

170

175

Pro Leu Gly Ala Ser Thr Cys Leu Leu Asp Val Arg Leu Gln Ser Ile
 180 185 190

Leu Arg Pro Asp Pro Pro Gln Gly Leu Arg Val Glu Ser Val Pro Gly
 195 200 205

Tyr Pro Arg Arg Leu His Ala Ser Trp Thr Tyr Pro Ala Ser Trp Arg
 210 215 220

Arg Gln Pro His Phe Leu Leu Lys Phe Arg Leu Gln Tyr Arg Pro Ala
 225 230 235 240

Gln His Pro Ala Trp Ser Thr Val Glu Pro Ile Gly Leu Glu Glu Val
 245 250 255

Ile Thr Asp Thr Val Ala Gly Leu Pro His Ala Val Arg Val Ser Ala
 260 265 270

Arg Asp Phe Leu Asp Ala Gly Thr Trp Ser Ala Trp Ser Pro Glu Ala
 275 280 285

Trp Gly Thr Pro Ser Thr Gly Leu Leu Gln Asp Glu Ile Pro Asp Trp
 290 295 300

Ser Gln Gly His Gly Gln Gln Leu Glu Ala Val Val Ala Gln Glu Asp
 305 310 315 320

Ser Leu Ala Pro Ala Arg Pro Ser Leu Gln Pro Asp Pro Arg Pro Leu
 325 330 335

Asp His Arg Asp Pro Leu Glu Gln Val Ala Val Leu Ala Ser Leu Gly
 340 345 350

Ile Phe Ser Cys Leu Gly Leu Ala Val Gly Ala Leu Ala Leu Gly Leu
 355 360 365

Trp Leu Arg Leu Arg Arg Ser Gly Lys Glu Gly Pro Gln Lys Pro Gly
 370 375 380

Leu Leu Ala Pro Met Ile Pro Val Glu Lys Leu Pro Gly Ile Pro Asn
 385 390 395 400

Leu

<210> 103

<211> 6

<212> PRT

<213> Artificial Sequence

<220>
<223> 8E2 L1 consensus sequence

<220>
<221> VARIANT
<222> (3)..(3)
<223> X=Y or I or K or M or Q or G or H

<400> 103

Val Ser Xaa Tyr Val Glu
1 5

<210> 104
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> 8E2 L3.1 consensus sequence

<220>
<221> VARIANT
<222> (3)..(3)
<223> X=A or H or F or N or S or W

<400> 104

Gln Gln Xaa Glu Ser Gln
1 5

<210> 105
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> 8E2 L3.2

<220>
<221> VARIANT
<222> (4)..(4)
<223> X=A or W or T or M or Q or W

<400> 105

Glu Thr Gln Xaa Pro Phe
1 5

<210> 106
<211> 6
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<400> 106

Trp Trp Trp Ser Ile Thr
1 5

<210> 107
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Val Pro Trp Gly Asp Leu
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Trp Gly Ser Phe Trp Tyr
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<400> 110

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

Arg Gln Leu Ala Ala Gln Leu Arg Asp Lys Phe Pro Ala Asp Gly Asp

35

40

45

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

Gly Ala Leu Gln Leu Pro Gly Val Leu Thr Arg Leu Arg Ala Asp Leu
 65 70 75 80

Leu Ser Tyr Leu Arg His Val Gln Trp Leu Arg Arg Ala Gly Gly Ser
 85 90 95

Ser Leu Lys Thr Leu Glu Pro Glu Leu Gly Thr Leu Gln Ala Arg Leu
 100 105 110

Asp Arg Leu Leu Arg Arg Leu Gln Leu Leu Met Ser Arg Leu Ala Leu
 115 120 125

Pro Gln Pro Pro Pro Asp Pro Pro Ala Pro Pro Leu Ala Pro Pro Ser
 130 135 140

Ser Ala Ala Gly Gly Ile Arg Ala Ala His Ala Ile Leu Gly Gly Leu
 145 150 155 160

His Leu Thr Leu Asp Trp Ala Val Arg Gly Leu Leu Leu Leu Lys Thr
 165 170 175

Arg Leu