

SEQUENCE LISTING (NIB added).txt
SEQUENCE LISTING

<110> YAMAGUCHI UNIVERSITY
NATIONAL CANCER CENTER
NOILE-IMMUNE BIOTECH, INC.

<120> Anti-GPC3 antibody

<130> FH29-004TW

<150> JP 2017-1732

<151> 2017-01-10

<160> 188

<170> PatentIn version 3.1

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<220>

<221> MISC_FEATURE

<223> Inventor: TAMADA, Koji; SAKODA, Yukimi; NAKATSURA, Tetsuya; SAITO
, Keigo

<400> 1

Gly Tyr Asn Met Asn
1 5

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Asn Ile Asp Pro Tyr Tyr Gly Gly Thr Ser Tyr Asn Gln Lys Phe Lys
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Gly

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Gly Asp Tyr Arg Ala Tyr Tyr Phe Asp Tyr
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Gln Val Gln Leu Lys Glu Ser Gly Pro Glu Leu Glu Lys Pro Gly Ala
1 5 10 15

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

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

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

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

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

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

Thr Thr Leu Thr Val Ser
115

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

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

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

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

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

Thr Thr Leu Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr
115 120 125

Pro Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu
130 135 140

Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp
145 150 155 160

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

Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser
180 185 190

Thr Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser
195 200 205

Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys
210 215 220

Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro
225 230 235 240

SEQUENCE LISTING (NIB added).txt

Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser
245 250 255

Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp
260 265 270

Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr
275 280 285

Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val
290 295 300

Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu
305 310 315 320

Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg
325 330 335

Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val
340 345 350

Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr
355 360 365

Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr
370 375 380

Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu
385 390 395 400

Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys
405 410 415

Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu
420 425 430

Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly
435 440 445

SEQUENCE LISTING (NIB added).txt

Lys

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

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

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

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

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

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

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
 130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu

145 150 155 160

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
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Ser Tyr Asp Met Ser
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Tyr Ile Ser Ser Gly Gly Gly Ser Thr Tyr Tyr Pro Asp Thr Val Lys
1 5 10 15

Gly

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Arg Gly Leu Arg Arg Ala Met Asp Tyr
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<400> 14

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

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Lys Val Ser Asn Arg Phe Ser
 1 5

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Ser Gln Ser Thr His Val Pro Leu Thr

SEQUENCE LISTING (NIB added).txt

1 5

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

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

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

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

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

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

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

Ser Val Thr Val Ser
115

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SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

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

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

Arg

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<400> 19

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

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

Ser Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro
115 120 125

Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly
130 135 140

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

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

Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr
180 185 190

Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser
195 200 205

Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro
210 215 220

Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser
225 230 235 240

SEQUENCE LISTING (NIB added).txt

Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu
245 250 255

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

Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala
275 280 285

Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val
290 295 300

Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe
305 310 315 320

Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr
325 330 335

Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu
340 345 350

Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys
355 360 365

Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn
370 375 380

Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys
405 410 415

Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly
420 425 430

Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
435 440 445

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

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

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

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

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

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

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

Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu
 115 120 125

Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe
 130 135 140

Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg
 145 150 155 160

Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser

SEQUENCE LISTING (NIB added).txt

165

170

175

Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu
180 185 190

Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser
195 200 205

Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys
210 215

<210> 21
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Ser Tyr Trp Met Asn
1 5

<210> 22
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Arg Ile Asp Pro Ser Asp Ser Glu Thr His Tyr Asn Gln Lys Phe Lys
1 5 10 15

Asp

<210> 23
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Gly Tyr Tyr Ala Met Asp Tyr

1 5

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<400> 24

Lys Ala Ser Gln Asp Val Ser Thr Ala Val Ala

1 5 10

<210> 25

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Ser Ala Ser Tyr Arg Tyr Thr

1 5

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Gln Gln His Tyr Ser Thr Pro Thr

1 5

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

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

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

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

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

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

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

Thr Val Ser
 115

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<400> 28

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

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1           5           10           15

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

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

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

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

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

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

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<400> 29

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

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

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

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

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SEQUENCE LISTING (NIB added).txt

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

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

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

Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala
115 120 125

Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys Leu
130 135 140

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

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

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

Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys
195 200 205

Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro
210 215 220

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

Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro
245 250 255

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

SEQUENCE LISTING (NIB added).txt

Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr
275 280 285

Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser Ala
290 295 300

Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys
305 310 315 320

Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser
325 330 335

Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro
340 345 350

Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val
355 360 365

Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly
370 375 380

Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser Asp
385 390 395 400

Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn Trp
405 410 415

Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu His
420 425 430

Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
435 440 445

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

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

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

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

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

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

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

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

Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile Asn
130 135 140

Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu Asn
145 150 155 160

Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser Ser
165 170 175

Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr Thr
180 185 190

Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser Phe

SEQUENCE LISTING (NIB added).txt

195

200

205

Asn Arg Asn Glu Cys
210

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<400> 31

Asp Tyr Tyr Met His
1 5

<210> 32

<211> 17

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<223> TF1413-02e014 H Chain CDR 2

<400> 32

Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Pro Lys Phe Gln
1 5 10 15

Gly

<210> 33

<211> 11

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<223> TF1413-02e014 H Chain CDR 3

<400> 33

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

SEQUENCE LISTING (NIB added).txt

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<211> 11
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<400> 34

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

<210> 35
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<400> 35

Trp Ala Ser Thr Arg His Thr
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<210> 36
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<400> 36

Gln Gln Tyr Ser Ser Tyr Pro Leu Thr
1 5

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<400> 37

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

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

Asn Ala Gly Tyr Tyr Asp Tyr Asp Gly Tyr Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Ser Val Thr Val Ser
115 120

<210> 38
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<400> 38

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

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

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

SEQUENCE LISTING (NIB added).txt

35

40

45

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

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

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

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

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<211> 451
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e014 H Chain

<400> 39

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

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

SEQUENCE LISTING (NIB added).txt

Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly
305 310 315 320

Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile
325 330 335

Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val
340 345 350

Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr
355 360 365

Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu
370 375 380

Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val
405 410 415

Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val
420 425 430

His Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr
435 440 445

Pro Gly Lys
450

<210> 40
<211> 214
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e014 L Chain

<400> 40

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

SEQUENCE LISTING (NIB added).txt

1	5	10	15
Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Gly Thr Ala	20	25	30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile	35	40	45
Tyr Trp Ala Ser Thr Arg His Thr Gly Val Pro Asp Arg Phe Thr Gly	50	55	60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser	65	70	75
Glu Asp Leu Ala Asp Tyr Phe Cys Gln Gln Tyr Ser Ser Tyr Pro Leu	85	90	95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala	100	105	110
Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly	115	120	125
Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile	130	135	140
Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu	145	150	155
Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser	165	170	175
Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr	180	185	190
Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser	195	200	205
Phe Asn Arg Asn Glu Cys			

SEQUENCE LISTING (NIB added).txt

210

<210> 41
<211> 5
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e030 H Chain CDR 1

<400> 41

Asp Tyr Tyr Met His
1 5

<210> 42
<211> 17
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e030 H Chain CDR 2

<400> 42

Trp Ile Asp Pro Glu Asn Gly Asn Thr Ile Tyr Asp Pro Lys Phe Gln
1 5 10 15

Gly

<210> 43
<211> 8
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e030 H Chain CDR 3

<400> 43

Thr Met Ile Thr Thr Leu Asp Tyr
1 5

<210> 44
<211> 17
<212> PRT

SEQUENCE LISTING (NIB added).txt

<213> Artificial

<220>

<223> TF1413-02e030 L Chain CDR 1

<400> 44

Lys	Ser	Ser	Gln	Ser	Leu	Leu	Asn	Ser	Ser	Asn	Gln	Lys	Asn	Tyr	Leu
1				5				10						15	

Ala

<210> 45

<211> 7

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e030 L Chain CDR 2

<400> 45

Phe	Ala	Ser	Thr	Arg	Glu	Ser
1				5		

<210> 46

<211> 9

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e030 L Chain CDR 3

<400> 46

Gln	Gln	His	Tyr	Ser	Thr	Pro	Leu	Thr
1				5				

<210> 47

<211> 117

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e030 H Chain V Region

<400> 47

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

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

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

Thr Leu Thr Val Ser
115

<210> 48
<211> 114
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e030 L Chain V Region

<400> 48

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

Gln Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser
20 25 30

Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln

SEQUENCE LISTING (NIB added).txt

35

40

45

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

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

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

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

Lys Arg

<210> 49

<211> 448

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e030 H Chain

<400> 49

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

Thr Leu Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro
115 120 125

Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly
130 135 140

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

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

Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr
180 185 190

Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser
195 200 205

Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro
210 215 220

Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro Ser
225 230 235 240

Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu
245 250 255

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

Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala
275 280 285

SEQUENCE LISTING (NIB added).txt

Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val
290 295 300

Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe
305 310 315 320

Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr
325 330 335

Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu
340 345 350

Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys
355 360 365

Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn
370 375 380

Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp
385 390 395 400

Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys
405 410 415

Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly
420 425 430

Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
435 440 445

<210> 50

<211> 220

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e030 L Chain

<400> 50

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ala Met Ser Val Gly

SEQUENCE LISTING (NIB added).txt

1	5	10	15
Gln Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser Leu Leu Asn Ser	20	25	30
Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln	35	40	45
Ser Pro Lys Leu Leu Val Tyr Phe Ala Ser Thr Arg Glu Ser Gly Val	50	55	60
Pro Asp Arg Phe Ile Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr	65	70	75
Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Asp Tyr Phe Cys Gln Gln	85	90	95
His Tyr Ser Thr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu	100	105	110
Lys Arg Ala Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Ser	115	120	125
Glu Gln Leu Thr Ser Gly Gly Ala Ser Val Val Cys Phe Leu Asn Asn	130	135	140
Phe Tyr Pro Lys Asp Ile Asn Val Lys Trp Lys Ile Asp Gly Ser Glu	145	150	155
Arg Gln Asn Gly Val Leu Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp	165	170	175
Ser Thr Tyr Ser Met Ser Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr	180	185	190
Glu Arg His Asn Ser Tyr Thr Cys Glu Ala Thr His Lys Thr Ser Thr	195	200	205
Ser Pro Ile Val Lys Ser Phe Asn Arg Asn Glu Cys			

SEQUENCE LISTING (NIB added).txt
215 220

210

<210> 51
<211> 5
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e040 H Chain CDR 1

<400> 51

Gly Tyr Thr Met Asn
1 5

<210> 52
<211> 17
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e040 H Chain CDR 2

<400> 52

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

Gly

<210> 53
<211> 8
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e040 H Chain CDR 3

<400> 53

Gly Tyr Tyr Gly Arg Phe Asp Tyr
1 5

<210> 54
<211> 11
<212> PRT

SEQUENCE LISTING (NIB added).txt

<213> Artificial

<220>

<223> TF1413-02e040 L Chain CDR 1

<400> 54

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

<210> 55

<211> 7

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e040 L Chain CDR 2

<400> 55

Leu Ala Ser Asn Arg His Thr
1 5

<210> 56

<211> 9

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e040 L Chain CDR 3

<400> 56

Leu Gln His Trp Asn Tyr Pro Leu Thr
1 5

<210> 57

<211> 116

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e040 H Chain V Region

<400> 57

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

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

Leu Thr Val Ser
115

<210> 58
<211> 108
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e040 L Chain V Region

<400> 58

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

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

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

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

SEQUENCE LISTING (NIB added).txt

50

55

60

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

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

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

<210> 59

<211> 447

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e040 H Chain

<400> 59

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

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

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

Leu Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu
115 120 125

Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys
130 135 140

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

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

Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser Thr Trp
180 185 190

Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr
195 200 205

Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys
210 215 220

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

Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser
245 250 255

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

Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln
275 280 285

Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser
290 295 300

Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys
305 310 315 320

SEQUENCE LISTING (NIB added).txt

Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile
325 330 335

Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro
340 345 350

Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met
355 360 365

Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn
370 375 380

Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser
385 390 395 400

Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn
405 410 415

Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu
420 425 430

His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
435 440 445

<210> 60
<211> 214
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e040 L Chain

<400> 60

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

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

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

SEQUENCE LISTING (NIB added).txt

35

40

45

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

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

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

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 61

<211> 5

<212> PRT

<213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> TF1413-03e001 H Chain CDR 1

<400> 61

Gly Tyr Tyr Met His

1 5

<210> 62

<211> 17

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e001 H Chain CDR 2

<400> 62

Arg Ile Asn Pro Tyr Asn Gly Ala Thr Ser Tyr Asn Gln Asn Phe Lys

1 5 10 15

Asp

<210> 63

<211> 7

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e001 H Chain CDR 3

<400> 63

Asn Tyr Gly Tyr Phe Asp Tyr

1 5

<210> 64

<211> 11

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e001 L Chain CDR 1

<400> 64

Glu Ala Ser Gln Asn Val Asp Asn Asn Val Val

SEQUENCE LISTING (NIB added).txt

1 5 10

<210> 65
<211> 7
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e001 L Chain CDR 2

<400> 65

Ser Ala Ser Tyr Arg Tyr Ser
1 5

<210> 66
<211> 9
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e001 L Chain CDR 3

<400> 66

Gln Gln Tyr Asn Ser Tyr Pro Leu Thr
1 5

<210> 67
<211> 115
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e001 H Chain V Region

<400> 67

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

Thr Val Ser
115

<210> 68
<211> 108
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e001 L Chain V Region

<400> 68

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

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

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

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

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

Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Tyr Pro Leu

SEQUENCE LISTING (NIB added).txt

85

90

95

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

<210> 69

<211> 446

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e001 H Chain

<400> 69

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

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

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

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

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

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

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

Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala
115 120 125

Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys Leu
130 135 140

SEQUENCE LISTING (NIB added).txt

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

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

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

Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys
195 200 205

Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro
210 215 220

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

Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro
245 250 255

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

Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr
275 280 285

Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser Ala
290 295 300

Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys
305 310 315 320

Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser
325 330 335

Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro
340 345 350

SEQUENCE LISTING (NIB added).txt

Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val
355 360 365

Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly
370 375 380

Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser Asp
385 390 395 400

Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys Lys Asn Trp
405 410 415

Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu Gly Leu His
420 425 430

Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly Lys
435 440 445

<210> 70

<211> 214

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e001 L Chain

<400> 70

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

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

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

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

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser

SEQUENCE LISTING (NIB added).txt

65		70		75		80
Glu Asp Leu Ala	Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Tyr Pro Leu					
	85		90		95	
Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg Ala Asp Ala Ala						
	100		105		110	
Pro Thr Val Ser Ile Phe Pro Pro Ser Ser Glu Gln Leu Thr Ser Gly						
	115		120		125	
Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile						
	130		135		140	
Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu						
	145		150		155	160
Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser						
	165		170		175	
Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr						
	180		185		190	
Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser						
	195		200		205	
Phe Asn Arg Asn Glu Cys						
	210					

<210> 71

<211> 5

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e004 H Chain CDR 1

<400> 71

Ser Tyr Trp Met Asn

1 5

SEQUENCE LISTING (NIB added).txt

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

<220>
 <223> TF1413-03e004 H Chain CDR 2

<400> 72

Arg	Ile	Asp	Pro	Ser	Asp	Ser	Glu	Thr	His	Tyr	Asn	Gln	Lys	Phe	Lys
1				5					10					15	

Asp

<210> 73
 <211> 7
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e004 H Chain CDR 3

<400> 73

Gly	Tyr	Tyr	Gly	Ser	Asn	Tyr
1				5		

<210> 74
 <211> 11
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e004 L Chain CDR 1

<400> 74

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

<210> 75
 <211> 7
 <212> PRT
 <213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> TF1413-03e004 L Chain CDR 2

<400> 75

Ser Ala Ser Tyr Arg Tyr Ser

1 5

<210> 76

<211> 9

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e004 L Chain CDR 3

<400> 76

Gln Gln Tyr Asn Ser Tyr Pro Leu Thr

1 5

<210> 77

<211> 115

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e004 H Chain V Region

<400> 77

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

Thr Val Ser
115

<210> 78
<211> 108
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e004 L Chain V Region

<400> 78

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

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

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

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

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

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

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

<210> 79

SEQUENCE LISTING (NIB added).txt

<211> 403
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e004 H Chain

<400> 79

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

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

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

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

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

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

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

Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala
 115 120 125

Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu Gly Cys Leu
 130 135 140

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

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

SEQUENCE LISTING (NIB added).txt

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

Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser Ser Thr Lys
195 200 205

Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys Pro Cys Pro
210 215 220

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

Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser Leu Ser Pro
245 250 255

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

Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr
275 280 285

Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val Val Ser Ala
290 295 300

Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys
305 310 315 320

Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg Thr Ile Ser
325 330 335

Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val Leu Pro Pro
340 345 350

Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr Cys Met Val
355 360 365

Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr Asn Asn Gly
370 375 380

SEQUENCE LISTING (NIB added).txt

Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu Asp Ser Asp
385 390 395 400

Gly Ser Tyr

<210> 80
<211> 214
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e004 L Chain

<400> 80

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

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

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

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

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

130

135

140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 81
<211> 5
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 H Chain CDR 1

<400> 81

Asp Tyr Tyr Met His
1 5

<210> 82
<211> 17
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 H Chain CDR 2

<400> 82

Trp Ile Asp Pro Glu Asn Gly Asp Thr Glu Tyr Ala Pro Lys Phe Gln
1 5 10 15

Gly

SEQUENCE LISTING (NIB added).txt

<210> 83
<211> 11
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 H Chain CDR 3

<400> 83

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

<210> 84
<211> 11
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 L Chain CDR 1

<400> 84

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

<210> 85
<211> 7
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 L Chain CDR 2

<400> 85

Ala Ala Ser Thr Leu Asp Ser
1 5

<210> 86
<211> 9
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 L Chain CDR 3

SEQUENCE LISTING (NIB added).txt

<400> 86

Leu Gln Tyr Ala Ser Tyr Pro Leu Thr
1 5

<210> 87

<211> 120

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e005 H Chain V Region

<400> 87

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

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

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

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

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

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

Asn Ala Phe Tyr Tyr Asp Tyr Asp Gly Tyr Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Ser Val Thr Val Ser
115 120

<210> 88

<211> 108

<212> PRT

SEQUENCE LISTING (NIB added).txt

<213> Artificial

<220>

<223> TF1413-03e005 L Chain V Region

<400> 88

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

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

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

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

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

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

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

<210> 89

<211> 451

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e005 H Chain

<400> 89

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

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

SEQUENCE LISTING (NIB added).txt

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

SEQUENCE LISTING (NIB added).txt

Gly Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met
245 250 255

Ile Ser Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu
260 265 270

Asp Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val
275 280 285

His Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu
290 295 300

Arg Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly
305 310 315 320

Lys Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile
325 330 335

Glu Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val
340 345 350

Tyr Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr
355 360 365

Leu Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu
370 375 380

Trp Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro
385 390 395 400

Val Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val
405 410 415

Glu Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val
420 425 430

His Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr
435 440 445

SEQUENCE LISTING (NIB added).txt

Pro Gly Lys
450

<210> 90
<211> 214
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 L Chain

<400> 90

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

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

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

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

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

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

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu

145 150 155 160

SEQUENCE LISTING (NIB added).txt

<211> 11
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e015 H Chain CDR 3

<400> 93

Gly	Asp	Tyr	Tyr	Pro	Pro	Tyr	Ala	Met	Asp	Tyr
1				5					10	

<210> 94
 <211> 11
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e015 L Chain CDR 1

<400> 94

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

<210> 95
 <211> 7
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e015 L Chain CDR 2

<400> 95

Ser	Ala	Ser	Tyr	Arg	Tyr	Ser
1				5		

<210> 96
 <211> 9
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e015 L Chain CDR 3

<400> 96

Gln	Gln	Tyr	Asn	Arg	Tyr	Pro	Leu	Thr
-----	-----	-----	-----	-----	-----	-----	-----	-----

SEQUENCE LISTING (NIB added).txt

1

5

<210> 97
<211> 119
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e015 H Chain V Region

<400> 97

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

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

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

Gly Leu Ile Asn Pro Tyr Asn Gly Gly Thr Ser Tyr Asn Gln Lys Phe
50 55 60

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

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

Ala Arg Gly Asp Tyr Tyr Pro Pro Tyr Ala Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Ser Val Thr Val Ser
115

<210> 98
<211> 108
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e015 L Chain V Region

SEQUENCE LISTING (NIB added).txt

<400> 98

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

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

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

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

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

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

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

<210> 99

<211> 450

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e015 H Chain

<400> 99

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

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

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

SEQUENCE LISTING (NIB added).txt

Gly Leu Ile Asn Pro Tyr Asn Gly Gly Thr Ser Tyr Asn Gln Lys Phe
50 55 60

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

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

Ala Arg Gly Asp Tyr Tyr Pro Pro Tyr Ala Met Asp Tyr Trp Gly Gln
100 105 110

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

Tyr Pro Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr
130 135 140

Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr
145 150 155 160

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

Leu Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser
180 185 190

Ser Thr Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala
195 200 205

Ser Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile
210 215 220

Lys Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly
225 230 235 240

Pro Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile
245 250 255

SEQUENCE LISTING (NIB added).txt

```

Ser Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp
    260                      265                      270

Asp Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His
    275                      280                      285

Thr Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg
    290                      295                      300

Val Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys
    305                      310                      315                      320

Glu Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu
    325                      330                      335

Arg Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr
    340                      345                      350

Val Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu
    355                      360                      365

Thr Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp
    370                      375                      380

Thr Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val
    385                      390                      395                      400

Leu Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu
    405                      410                      415

Lys Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His
    420                      425                      430

Glu Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro
    435                      440                      445

Gly Lys
    450

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SEQUENCE LISTING (NIB added).txt

<210> 100
 <211> 214
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e015 L Chain

<400> 100

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

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

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

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

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

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

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
 130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
 145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser

SEQUENCE LISTING (NIB added).txt

165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr
180 185 190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 101
<211> 5
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e034 H Chain CDR 1

<400> 101

Gly Tyr Asn Met Asn
1 5

<210> 102
<211> 17
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e034 H Chain CDR 2

<400> 102

Asn Ile Asp Pro Tyr Tyr Gly Gly Thr Ser Tyr Asn Gln Lys Phe Lys
1 5 10 15

Gly

<210> 103
<211> 10
<212> PRT
<213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> TF1413-03e034 H Chain CDR 3

<400> 103

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

<210> 104

<211> 11

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e034 L Chain CDR 1

<400> 104

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

<210> 105

<211> 7

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e034 L Chain CDR 2

<400> 105

Leu Ala Ser Asn Arg His Thr
1 5

<210> 106

<211> 9

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e034 L Chain CDR 3

<400> 106

Leu Gln His Trp Asn Tyr Pro Leu Thr
1 5

<210> 107

SEQUENCE LISTING (NIB added).txt

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

<220>
 <223> TF1413-03e034 H Chain V Region

<400> 107

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

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

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

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

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

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

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

Thr Ser Val Thr Val Ser
 115

<210> 108
 <211> 108
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e034 L Chain V Region

<400> 108

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

SEQUENCE LISTING (NIB added).txt

```

1           5           10          15
Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asn Val Arg Thr Ala
      20              25              30

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

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

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

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

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

<210> 109
<211> 449
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e034 H Chain

<400> 109

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

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

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

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

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SEQUENCE LISTING (NIB added).txt

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

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

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

Thr Ser Val Thr Val Ser Ser Ala Lys Thr Thr Ala Pro Ser Val Tyr
115 120 125

Pro Leu Ala Pro Val Cys Gly Asp Thr Thr Gly Ser Ser Val Thr Leu
130 135 140

Gly Cys Leu Val Lys Gly Tyr Phe Pro Glu Pro Val Thr Leu Thr Trp
145 150 155 160

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

Gln Ser Asp Leu Tyr Thr Leu Ser Ser Ser Val Thr Val Thr Ser Ser
180 185 190

Thr Trp Pro Ser Gln Ser Ile Thr Cys Asn Val Ala His Pro Ala Ser
195 200 205

Ser Thr Lys Val Asp Lys Lys Ile Glu Pro Arg Gly Pro Thr Ile Lys
210 215 220

Pro Cys Pro Pro Cys Lys Cys Pro Ala Pro Asn Leu Leu Gly Gly Pro
225 230 235 240

Ser Val Phe Ile Phe Pro Pro Lys Ile Lys Asp Val Leu Met Ile Ser
245 250 255

Leu Ser Pro Ile Val Thr Cys Val Val Val Asp Val Ser Glu Asp Asp
260 265 270

SEQUENCE LISTING (NIB added).txt

Pro Asp Val Gln Ile Ser Trp Phe Val Asn Asn Val Glu Val His Thr
275 280 285

Ala Gln Thr Gln Thr His Arg Glu Asp Tyr Asn Ser Thr Leu Arg Val
290 295 300

Val Ser Ala Leu Pro Ile Gln His Gln Asp Trp Met Ser Gly Lys Glu
305 310 315 320

Phe Lys Cys Lys Val Asn Asn Lys Asp Leu Pro Ala Pro Ile Glu Arg
325 330 335

Thr Ile Ser Lys Pro Lys Gly Ser Val Arg Ala Pro Gln Val Tyr Val
340 345 350

Leu Pro Pro Pro Glu Glu Glu Met Thr Lys Lys Gln Val Thr Leu Thr
355 360 365

Cys Met Val Thr Asp Phe Met Pro Glu Asp Ile Tyr Val Glu Trp Thr
370 375 380

Asn Asn Gly Lys Thr Glu Leu Asn Tyr Lys Asn Thr Glu Pro Val Leu
385 390 395 400

Asp Ser Asp Gly Ser Tyr Phe Met Tyr Ser Lys Leu Arg Val Glu Lys
405 410 415

Lys Asn Trp Val Glu Arg Asn Ser Tyr Ser Cys Ser Val Val His Glu
420 425 430

Gly Leu His Asn His His Thr Thr Lys Ser Phe Ser Arg Thr Pro Gly
435 440 445

Lys

<210> 110

<211> 214

<212> PRT

SEQUENCE LISTING (NIB added).txt

<213> Artificial

<220>

<223> TF1413-03e034 L Chain

<400> 110

Asp Ile Val Met Ser Gln Ser Pro Lys Phe Met Ser Thr Ser Val Gly
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Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asn Val Arg Thr Ala
20 25 30

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

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

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

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

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

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

Gly Ala Ser Val Val Cys Phe Leu Asn Asn Phe Tyr Pro Lys Asp Ile
130 135 140

Asn Val Lys Trp Lys Ile Asp Gly Ser Glu Arg Gln Asn Gly Val Leu
145 150 155 160

Asn Ser Trp Thr Asp Gln Asp Ser Lys Asp Ser Thr Tyr Ser Met Ser
165 170 175

Ser Thr Leu Thr Leu Thr Lys Asp Glu Tyr Glu Arg His Asn Ser Tyr

SEQUENCE LISTING (NIB added).txt

180

185

190

Thr Cys Glu Ala Thr His Lys Thr Ser Thr Ser Pro Ile Val Lys Ser
195 200 205

Phe Asn Arg Asn Glu Cys
210

<210> 111
<211> 354
<212> DNA
<213> Artificial

<220>
<223> TF1413-02d028 H Chain V Region Gene

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tcctgcaagg cttctggtta ctcatcact ggctacaaca tgaactgggt gaagcagagc 120
aatggaaaga gccttgagtg gattggaaat attgatacctt actatggtgg tactagctac 180
aaccagaagt tcaagggcaa ggccacattg actgtagaca aatcctccag cacagcctac 240
atgcagctca agagcctgac atctgaggac tctgcagtct attactgtgc aagaggagac 300
tatagggcgt actactttga ctactggggc caaggcacca ctctcacagt ctcg 354

<210> 112
<211> 324
<212> DNA
<213> Artificial

<220>
<223> TF1413-02d028 L Chain V Region Gene

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atcacctgca aggccagtca gaatgttcgt actgctgtag cctggatatca acagaaacca 120
gggcagtctc ctaaagcact gatttacttg gcatccaacc ggcacactgg agtccctgat 180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccattagcaa tgtgcaatct 240
gaagacctgg cagattatct ctgtctgcaa cattggaatt atcctctcac gttcgggtgct 300

SEQUENCE LISTING (NIB added).txt

gggaccaagc tggagctgaa acgg 324

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<212> DNA
<213> Artificial

<220>
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<400> 113
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aatggaaaga gccttgagtg gattggaaat attgacctt actatgggtg tactagctac 180
aaccagaagt tcaagggcaa ggccacattg actgtagaca aatcctccag cacagcctac 240
atgcagctca agagcctgac atctgaggac tctgcagtct attactgtgc aagaggagac 300
tatagggcgt actactttga ctactggggc caaggcacca ctctcacagt ctcgagcgcc 360
aaaacaacag ccccatcggt ctatccactg gcccctgtgt gtggagatac aactggctcc 420
tcggtgactc taggatgcct ggtcaagggt tatttcctg agccagtgc cttgacctgg 480
aactctggat ccctgtccag tgggtgtgcac accttcccag ctgtcctgca gtctgacctc 540
tacaccctca gcagctcagt gactgtaacc tcgagcacct ggcccagcca gtccatcacc 600
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cccacaatca agccctgtcc tccatgcaaa tgcccagcac ctaacctctt gggtggacca 720
tccgtcttca tcttccctcc aaagatcaag gatgtactca tgatctccct gagccccata 780
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actaagaaac aggtcactct gacctgcatg gtcacagact tcatgcctga agacatttac 1140
gtggagtgga ccaacaacgg gaaaacagag ctaaactaca agaacactga accagtcctg 1200

SEQUENCE LISTING (NIB added).txt

gactctgatg gttcttactt catgtacagc aagctgagag tggaaaagaa gaactgggtg 1260
gaaagaaata gctactcctg ttcagtggtc cagcagggtc tgcacaatca ccacacgact 1320
aagagcttct cccggactcc gggtaaa 1347

<210> 114
<211> 642
<212> DNA
<213> Artificial

<220>
<223> TF1413-02d028 H Chain Gene

<400> 114
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gggcagtctc ctaaagcact gatttacttg gcatccaacc ggcacactgg agtcctgat 180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccattagcaa tgtgcaatct 240
gaagacctgg cagattatct ctgtctgcaa cattggaatt atcctctcac gttcgggtgct 300
gggaccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 360
tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac 420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg 480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg 540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca 600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 642

<210> 115
<211> 351
<212> DNA
<213> Artificial

<220>
<223> TF1413-02d039 H Chain V Region Gene

<400> 115
gaagtgaagc tgggtggagtc tgggggaggc ttagtgaagc ctggagggtc cctgaaactc 60
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SEQUENCE LISTING (NIB added).txt

ccggagaaga ggctggagtg ggtcgcatac attagtagtg gtggtggttag cacctactat	180
ccagacactg tgaagggccg attcaccatc tccagagaca atgccaagaa caccctgtac	240
ctgcaaatga gcagtctgaa gtctgaggac acagccatgt attactgtgc aagaagagga	300
ttacgacgag ctatggacta ctgggggtcaa ggaacctcag tcaccgtctc g	351

<210> 116
 <211> 339
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02d039 L Chain V Region Gene

<400> 116	
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tacctgcaga agccaggcca gtctccaaag ctctgatct acaaagtttc caaccgattt	180
tctgggggtcc cagacagggt cagtggcagt ggatcaggga cagatttcac actcaagatc	240
agcagagtgg aggctgagga tctgggagtt tatttctgct ctcaaagtac acatgttccg	300
ctcacgttcg gtgctgggac caagctggag ctgaaacgg	339

<210> 117
 <211> 1344
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02d039 H Chain Gene

<400> 117	
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tcctgtgcag cctctggatt cgctttcagt agctatgaca tgtcttgggt tcgccagact	120
ccggagaaga ggctggagtg ggtcgcatac attagtagtg gtggtggttag cacctactat	180
ccagacactg tgaagggccg attcaccatc tccagagaca atgccaagaa caccctgtac	240
ctgcaaatga gcagtctgaa gtctgaggac acagccatgt attactgtgc aagaagagga	300
ttacgacgag ctatggacta ctgggggtcaa ggaacctcag tcaccgtctc gagcgccaaa	360

SEQUENCE LISTING (NIB added).txt

acaacagccc catcgggtcta tccactggcc cctgtgtgtg gagatacaac tggctcctcg	420
gtgactctag gatgcctggt caagggttat ttccctgagc cagtgcacctt gacctggaac	480
tctggatccc tgtccagtgg tgtgcacacc ttcccagctg tcctgcagtc tgacctctac	540
accctcagca gctcagtgc tgtaacctcg agcacctggc ccagccagtc catcacctgc	600
aatgtggccc acccggaag cagcaccaag gtggacaaga aaattgagcc ccggggagccc	660
acaatcaagc cctgtcctcc atgcaaagtc ccagcaccta acctcttggg tggaccatcc	720
gtcttcatct tccctccaaa gatcaaggat gtactcatga tctccctgag ccccatagtc	780
acatgtgtgg tgggtgatgt gagcgaggat gaccagatg tccagatcag ctggtttgtg	840
aacaacgtgg aagtacacac agctcagaca caaacccata gagaggatta caacagtact	900
ctccgggtgg tcagtgcctt ccccatccag caccaggact ggatgagtgg caaggagttc	960
aaatgcaagg tcaacaacaa agacctcca gcgcccacgc agagaaccat ctcaaaaccc	1020
aaagggtcag taagagctcc acaggtatat gtcttgctc caccagaaga agagatgact	1080
aagaaacagg tcaactctgac ctgcatggtc acagacttca tgcctgaaga catttacgtg	1140
gagtggacca acaacgggaa aacagagcta aactacaaga aactgaacc agtcctggac	1200
tctgatgggt cttacttcat gtacagcaag ctgagagtgg aaaagaagaa ctgggtggaa	1260
agaaatagct actcctgttc agtgggtccac gaggggtctgc acaatcacca cagactaag	1320
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<210> 118
 <211> 657
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02d039 L Chain Gene

<400> 118	
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atctcttgca gatctagtca gagccttgta cacagtaatg gaaacaccta ttacattgg	120
tacctgcaga agccaggcca gtctccaaag ctctgatctt acaaagtttc caaccgattt	180
tctgggggtcc cagacagggt cagtggcagt ggatcaggga cagatttcac actcaagatc	240

SEQUENCE LISTING (NIB added).txt

agcagagtgg aggctgagga tctgggagtt tattttctgct ctcaaagtac acatgttccg	300
ctcacgttcg gtgctgggac caagctggag ctgaaacggg ctgatgctgc accaactgta	360
tccatcttcc caccatccag tgagcagtta acatctggag gtgcctcagt cgtgtgcttc	420
ttgaacaact tctaccccaa agacatcaat gtcaagtgga agattgatgg cagtgaacga	480
caaaatggcg tcctgaacag ttggactgat caggacagca aagacagcac ctacagcatg	540
agcagcacc tcacgttgac caaggacgag tatgaacgac ataacagcta tacctgtgag	600
gccactcaca agacatcaac ttcacccatt gtcaagagct tcaacaggaa tgagtgt	657

<210> 119
 <211> 345
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e004 H Chain V Region Gene

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tcctgcaagg cttctggcta caccttcacc agctactgga tgaactgggt gaagcagagg	120
cctggacgag gcctcgagtg gattggaagg attgatcctt ccgatagtga aactcactac	180
aatcaaaaagt tcaaggacga ggccacactg actgtagaca aatcctccag cacagcctac	240
atccaactca gcagcctgac atctgaggac tctgcgggtct attactgtgc aagagggtac	300
tatgctatgg actactgggg tcaaggaacc tcagtcaccg tctcg	345

<210> 120
 <211> 321
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e004 L Chain V Region Gene

<400> 120	
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atcacctgca aggccagtca ggatgtgagt actgctgtag cctgggtatca acagaaacca	120
ggacaatctc ctaaactact gatttactca gcacacctacc ggtacactgg agtccttgat	180

SEQUENCE LISTING (NIB added).txt

cgcttcactg gcagtgatc tgggacggat ttcactttca ccatcagcag tgtgcaggct	240
gaagacctgg cagtttatta ctgtcagcaa cattatagta ctccgacgtt cgggtggaggc	300
accaagctgg aaatcaaacg g	321

<210> 121
 <211> 1338
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e004 H Chain Gene

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tcctgcaagg cttctggcta caccttcacc agctactgga tgaactgggt gaagcagagg	120
cctggacgag gcctcgagtg gattggaagg attgatacctt ccgatagtga aactcactac	180
aatcaaaagt tcaaggacga ggccacactg actgtagaca aatcctccag cacagcctac	240
atccaactca gcagcctgac atctgaggac tctgcggtct attactgtgc aagagggtag	300
tatgctatgg actactgggg tcaaggaacc tcagtcaccg tctcgagcgc caaaacaaca	360
gccccatcgg tctatccact ggccccctgtg tgtggagata caactggctc ctcggtgact	420
ctaggatgcc tgggtcaaggg ttattttcct gagccagtga ccttgacctg gaactctgga	480
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aagccctgtc ctccatgcaa atgcccagca cctaacctct tgggtggacc atccgtcttc	720
atcttcctc caaagatcaa ggatgtactc atgatctccc tgagcccat agtcacatgt	780
gtggtggtgg atgtgagcga ggatgacca gatgtccaga tcagctggtt tgtgaacaac	840
gtggaagtac acacagctca gacacaaacc catagagagg attacaacag tactctccgg	900
gtggtcagtg ccctccccat ccagcaccag gactggatga gtggcaagga gttcaaatgc	960
aaggtaaca acaaagacct ccagcgccc atcgagagaa ccatctcaa acccaaaggg	1020
tcagtaagag ctccacaggt atatgtcttg cctccaccag aagaagagat gactaagaaa	1080

SEQUENCE LISTING (NIB added).txt

caggtcactc tgacctgcat ggtcacagac ttcatgcctg aagacattta cgtggagtgg	1140
accaacaacg ggaaaacaga gctaaactac aagaacactg aaccagtcct ggactctgat	1200
ggttcttact tcatgtacag caagctgaga gtggaaaaga agaactgggt ggaaagaaat	1260
agctactcct gttcagtggg ccacgagggt ctgcacaatc accacacgac taagagcttc	1320
tcccggactc cgggtaaa	1338

<210> 122
 <211> 639
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e004 L Chain Gene

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atcacctgca aggccagtca ggatgtgagt actgctgtag cctgggtatca acagaaacca	120
ggacaatctc ctaaactact gatttactca gcatcctacc ggtacactgg agtccctgat	180
cgcttcactg gcagtggatc tgggacggat ttcactttca ccatcagcag tgtgcaggct	240
gaagacctgg cagtttatta ctgtcagcaa cattatagta ctccgacgtt cgggtggaggc	300
accaagctgg aaatcaaacg ggctgatgct gcaccaactg tatccatctt cccaccatcc	360
agtgagcagt taacatctgg aggtgcctca gtcgtgtgct tcttgaacaa cttctacccc	420
aaagacatca atgtcaagtg gaagattgat ggcagtgaac gacaaaatgg cgtcctgaac	480
agttggactg atcaggacag caaagacagc acctacagca tgagcagcac cctcacgttg	540
accaaggacg agtatgaacg acataacagc tatacctgtg aggccactca caagacatca	600
acttcacca ttgtcaagag cttcaacagg aatgagtgt	639

<210> 123
 <211> 360
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e014 H Chain V Region Gene

<400> 123

SEQUENCE LISTING (NIB added).txt

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cctgaacagg gcctggagtg gattggatgg attgatcctg agaatgggtga tactgaatat	180
gccccgaagt tccagggcaa ggccactatg actgcagaca catcctccaa cacagcctac	240
ctgcagctca gcagcctgac atctgaggac actgccgtct attactgtaa tgcaggctac	300
tatgattacg acggctatgc tatggactac tggggtaag gaacctcagt caccgtctcg	360

<210> 124
 <211> 324
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e014 L Chain V Region Gene

<400> 124	
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atcacctgca aggccagtca ggatgtgggt actgctgtag cctgggtatca acagaaacca	120
gggcaatctc ctaaactact gatttactgg gcatccaccc ggcacactgg agtccccgat	180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccattagcaa tgtgcagtct	240
gaagacttgg cagattatct ctgtcagcaa tatagcagct atcctctgac gttcgggtgga	300
ggcaccaagc tggaaatcaa acgg	324

<210> 125
 <211> 1353
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e014 H Chain Gene

<400> 125	
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cctgaacagg gcctggagtg gattggatgg attgatcctg agaatgggtga tactgaatat	180
gccccgaagt tccagggcaa ggccactatg actgcagaca catcctccaa cacagcctac	240

SEQUENCE LISTING (NIB added).txt

ctgcagctca gcagcctgac atctgaggac actgccgtct attactgtaa tgcaggctac	300
tatgattacg acggctatgc tatggactac tgggggtcaag gaacctcagt caccgtctcg	360
agcgccaaaa aaacagcccc atcgggtctat ccactggccc ctgtgtgtgg agatacaact	420
ggctcctcgg tgactctagg atgcctggtc aagggttatt tccctgagcc agtgaccttg	480
acctggaact ctggatccct gtccagtggg gtgcacacct tcccagctgt cctgcagtct	540
gacctctaca ccctcagcag ctcagtgact gtaacctcga gcacctggcc cagccagtcc	600
atcacctgca atgtggccca cccggcaagc agtaccaagg tggacaagaa aattgagccc	660
cggggaccca caatcaagcc ctgtcctcca tgcaaatgcc cagcacctaa cctcttgggt	720
ggaccatccg tcttcatctt ccctccaaag atcaaggatg tactcatgat ctccctgagc	780
cccatagtca catgtgtggg ggtggatgtg agcgaggatg acccagatgt ccagatcagc	840
tggtttgtga acaacgtgga agtacacaca gctcagacac aaacccatag agaggattac	900
aacagtactc tccgggtggg cagtgccctc cccatccagc accaggactg gatgagtggc	960
aaggagttca aatgcaaggt caacaacaaa gacctcccag cgcccatcga gagaaccatc	1020
tcaaaaccca aagggtcagt aagagctcca caggatatatg tcttgcctcc accagaagaa	1080
gagatgacta agaaacaggt cactctgacc tgcatgggtca cagacttcat gcctgaagac	1140
atttacgtgg agtggaccaa caacgggaaa acagagctaa actacaagaa cactgaacca	1200
gtcctggact ctgatggttc ttacttcatg tacagcaagc tgagagtgga aaagaagaac	1260
tgggtggaaa gaaatagcta ctctgttca gtgggtccacg agggctctgca caatcaccac	1320
acgactaaga gcttctcccc gactccgggt aaa	1353

<210> 126

<211> 642

<212> DNA

<213> Artificial

<220>

<223> TF1413-02e014 L Chain Gene

<400> 126

gacattgtgc tgacacagtc tcccaaattc atgtccacat cagtaggaga cagggtcagc	60
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atcacctgca aggccagtca ggatgtgggt actgctgtag cctgggtatca acagaaacca	120
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SEQUENCE LISTING (NIB added).txt

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gaagacttgg cagattatct ctgtcagcaa tatagcagct atcctctgac gttcgggtgga 300
ggcaccaagc tggaaatcaa acgggctgat gctgcaccaa ctgtatccat cttcccacca 360
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tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 642

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<210> 127
 <211> 351
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e030 H Chain V Region Gene

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<400> 127
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gacccgaagt tccagggcaa ggccagtata acagcagaca catcctcaa cacagcctac 240
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atgattacga cccttgacta ctggggccaa ggcaccactc tcacagtctc g 351

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<210> 128
 <211> 342
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e030 L Chain V Region Gene

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<400> 128
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SEQUENCE LISTING (NIB added).txt

atgagctgca agtccagtca gaggcctttta aatagtagca atcaaaagaa ctatttggcc	120
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gaatctgggg tccctgatcg cttcataggc agtggatctg ggacagattt cactcttacc	240
atcagcagtg tgcaggctga agacctggca gattacttct gtcagcaaca ttatagcact	300
ccgctcacgt tcggtgctgg gaccaagctg gagctgaaac gg	342

<210> 129
 <211> 1344
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e030 H Chain Gene

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cctgaacagg gcctggagtg gattggatgg attgatcctg agaatggtaa cactatatat	180
gacccgaagt tccagggcaa ggccagtata acagcagaca catcctcaa cacagcctac	240
ctgcagctca gcagcctgac atctgaggac actgccgtct attactgtgc tatatctact	300
atgattacga cccttgacta ctggggccaa ggcaccactc tcacagtctc gagcgccaaa	360
acaacagccc catcgggtcta tccactggcc cctgtgtgtg gagatacaac tggctcctcg	420
gtgactctag gatgcctggc caagggttat ttccctgagc cagtgcctt gacctggaac	480
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acaatcaagc cctgtcctcc atgcaaatgc ccagcaccta acctcttggg tggacctacc	720
gtcttcatct tccctccaaa gatcaaggat gtactcatga tctccctgag ccccatagtc	780
acatgtgtgg tggtggatgt gagcgaggat gaccagatg tccagatcag ctggtttgtg	840
aacaacgtgg aagtacacac agctcagaca caaacccata gagaggatta caacagtact	900
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SEQUENCE LISTING (NIB added).txt

aaatgcaagg tcaacaacaa agacctccca gcgcccacg agagaacct ctcaaaaccc	1020
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aagaaacagg tcactctgac ctgcatggtc acagacttca tgcctgaaga catttacgtg	1140
gagtggacca acaacgggaa aacagagcta aactacaaga acactgaacc agtcctggac	1200
tctgatggtt cttacttcat gtacagcaag ctgagagtgg aaaagaagaa ctgggtggaa	1260
agaaatagct actcctgttc agtgggtccac gagggctctgc acaatcacca cacgactaag	1320
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<210> 130
 <211> 660
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e030 L Chain Gene

<400> 130	
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tgggtaccagc agaaaccagg acagtctcct aaacttctgg tatactttgc atccactagg	180
gaatctgggg tccctgatcg cttcataggc agtggatctg ggacagattt cactcttacc	240
atcagcagtg tgcaggctga agacctggca gattacttct gtcagcaaca ttatagcact	300
ccgctcacgt tcgggtgctgg gaccaagctg gagctgaaac gggctgatgc tgcaccaact	360
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cgacaaaatg gcgtcctgaa cagttggact gatcaggaca gcaaagacag cacctacagc	540
atgagcagca ccctcacgtt gaccaaggac gagtatgaac gacataacag ctatacctgt	600
gaggccactc acaagacatc aacttcaccc attgtcaaga gcttcaacag gaatgagtgt	660

<210> 131
 <211> 348
 <212> DNA
 <213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> TF1413-02e040 H Chain V Region Gene

<400> 131

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tcctgcaagg cttctgggta ctcattcact ggctacacca tgaactgggt gaagcagagc	120
catggaaaga accttgagtg gattggactt attaatcctt acaatgggtg tactagctac	180
aaccagaatt ttaagggcaa ggccacatta actgtagaca agtcatccag cacagcctac	240
atggagctcc tcagtctgac atctgaggac tctgcagtct attactgtgc aagagggtac	300
tacggtcgct ttgactactg gggccaaggc accactctca cagtctcg	348

<210> 132

<211> 324

<212> DNA

<213> Artificial

<220>

<223> TF1413-02e040 L Chain V Region Gene

<400> 132

gacatcttgc tgactcagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc	60
atcacctgca aggccagtca gaatgttcgt actgctgtag cctggatatca acagaaacca	120
gggcagtctc ctaaagcact gatttacttg gcatccaacc ggcacactgg agtcctgat	180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccattagcaa tgtgcaatct	240
gaagacctgg cagattatct ctgtctgcaa cattggaatt atcctctcac gttcggtgct	300
gggaccaagc tggagctgaa acgg	324

<210> 133

<211> 1341

<212> DNA

<213> Artificial

<220>

<223> TF1413-02e040 H Chain Gene

<400> 133

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SEQUENCE LISTING (NIB added).txt

catggaaaga accttgagtg gattggactt attaatcctt acaatgggtg tactagctac	180
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atggagctcc tcagtctgac atctgaggac tctgcagtct attactgtgc aagagggtag	300
tacggtcgct ttgactactg gggccaaggc accactctca cagtctcgag cgccaaaaca	360
acagcccat cggtctatcc actggcccct gtgtgtggag atacaactgg ctccctcggtg	420
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ggatccctgt ccagtgggtg gcacaccttc ccagctgtcc tgcagtctga cctctacacc	540
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gtggcccacc cggcaagcag caccaaggtg gacaagaaaa ttgagccccg gggaccacaca	660
atcaagccct gtcctccatg caaatgccca gcacctaac tcttgggtgg accatccgtc	720
ttcatcttcc ctccaaagat caaggatgta ctcagtatct ccctgagccc catagtcaca	780
tgtgtgggtg tggatgtgag cgaggatgac ccagatgtcc agatcagctg gtttgtgaac	840
aacgtggaag tacacacagc tcagacacaa acccatagag aggattacaa cagtactctc	900
cgggtggtca gtgccctccc catccagcac caggactgga tgagtggcaa ggagttcaaa	960
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gggtcagtaa gagctccaca ggtatatgtc ttgcctccac cagaagaaga gatgactaag	1080
aaacagggtca ctctgacctg catggtcaca gacttcatgc ctgaagacat ttacgtggag	1140
tggaccaaca acgggaaaac agagctaaac tacaagaaca ctgaaccagt cctggactct	1200
gatggttctt acttcatgta cagcaagctg agagtggaaa agaagaactg ggtggaaaga	1260
aatagctact cctgttcagt ggtccacgag ggtctgcaca atcaccacac gactaagagc	1320
ttctcccgga ctccgggtaa a	1341

<210> 134
 <211> 642
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-02e040 L Chain Gene

<400> 134

SEQUENCE LISTING (NIB added).txt

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atcacctgca aggccagtca gaatgttcgt actgctgtag cctggatatca acagaaacca	120
gggcagtctc ctaaagcact gatttacttg gcatccaacc ggcacactgg agtccctgat	180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccattagcaa tgtgcaatct	240
gaagacctgg cagattatct ctgtctgcaa cattggaatt atcctctcac gttcggtgct	300
gggaccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca	360
tccagtgagc agttaacatc tggagggtgcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt	642

<210> 135
 <211> 345
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e001 H Chain V Region Gene

<400> 135	
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tcctgcaagg cttctgggta ctcatcact ggctactaca tgcactgggt gaagcaaagc	120
catgtaaaga gccttgagtg gattggacgt attaatcctt acaatggtgc tactagctac	180
aaccagaatt tcaaggacaa ggccagcttg actgtagata agtcctccag cacagcctac	240
atggagctcc acagcctgac atctgaggac tctgcagtct attactgtgc aagaaactac	300
ggctactttg actactgggg ccaaggcacc actctcacag tctcg	345

<210> 136
 <211> 324
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e001 L Chain V Region Gene

SEQUENCE LISTING (NIB added).txt

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gggcaatctc ctaaagcact gatttactcg gcctcctacc ggtacagtgg agtccttgat 180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcagcaa tgtgcagtct 240
gaagacttgg cagagtatct ctgtcagcaa tataacagct atcctctcac gttcgggtgct 300
gggaccaagt tggaaataaa acgg 324

<210> 137
<211> 1338
<212> DNA
<213> Artificial

<220>
<223> TF1413-03e001 H Chain Gene

<400> 137
cagggtgcagc tgaagcagtc aggacctgag ctggtgaagc ctggggcttc agtgaagata 60
tcctgcaagg cttctggtta ctcatcact ggctactaca tgcactgggt gaagcaaagc 120
catgtaaaga gccttgagtg gattggacgt attaatcctt acaatgggtgc tactagctac 180
aaccagaatt tcaaggacaa ggccagcttg actgtagata agtcctccag cacagcctac 240
atggagctcc acagcctgac atctgaggac tctgcagtct attactgtgc aagaaactac 300
ggctactttg actactgggg ccaaggcacc actctcacag tctcgagcgc caaaacaaca 360
gccccatcgg tctatccact ggcccctgtg tgtggagata caactggctc ctcggtgact 420
ctaggatgcc tgggtcaaggg ttatttcctt gagccagtga ccttgacctg gaactctgga 480
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gcccaccgga caagcagcac caaggtggac aagaaaattg agccccgggg acccacaatc 660
aagccctgtc ctccatgcaa atgcccagca cctaacctct tgggtggacc atccgtcttc 720
atcttcctc caaagatcaa ggatgtactc atgatctccc tgagcccat agtcacatgt 780
gtggtggtgg atgtgagcga ggatgacca gatgtccaga tcagctggtt tgtgaacaac 840

SEQUENCE LISTING (NIB added).txt

gtggaagtac acacagctca gacacaaacc catagagagg attacaacag tactctccgg	900
gtgggtcagtg ccctcccat ccagcaccag gactggatga gtggcaagga gttcaaagtc	960
aagggtcaaca acaaagacct cccagcgccc atcgagagaa ccatctcaaa acccaaaggg	1020
tcagtaagag ctccacaggt atatgtcttg cctccaccag aagaagagat gactaagaaa	1080
cagggtcactc tgacctgcat ggtcacagac ttcatgcctg aagacattta cgtggagtgg	1140
accaacaacg ggaaaacaga gctaaactac aagaacactg aaccagtcct ggactctgat	1200
ggttcttact tcatgtacag caagctgaga gtggaaaaga agaactgggt ggaaagaaat	1260
agctactcct gttcagtggg ccacgagggt ctgcacaatc accacacgac taagagcttc	1320
tcccggactc cgggtaaa	1338

<210> 138
 <211> 642
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e001 L Chain Gene

<400> 138	
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gtcacctgcg aggccagtca gaatgtggat aataatgtag tctggatatca acagaaacca	120
gggcaatctc ctaaagcact gatttactcg gcatcctacc ggtacagtgg agtccttgat	180
cgcttcacag gcagtggatc tgggacagat ttactctca ccatcagcaa tgtgcagtct	240
gaagacttgg cagagtattt ctgtcagcaa tataacagct atcctctcac gttcggtgct	300
gggaccaagt tggaaataaa acgggctgat gctgcaccaa ctgtatccat cttcccacca	360
tccagtgagc agttaacatc tggagggtgcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt	642

<210> 139

SEQUENCE LISTING (NIB added).txt

<211> 345
<212> DNA
<213> Artificial

<220>

<223> TF1413-03e004 H Chain V Region Gene

<400> 139

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tcctgcaagg cttctggcta caccttcacc agctactgga tgaactgggt gaagcagagg      120
cctggacgag gcctcgagtg gattggaagg attgatacct ccgatagtga aactcactac      180
aatcaaaagt tcaaggacaa ggccacactg actgtagaca aatcctccag cacagcctac      240
atccaactca gcagcctgac atctgaggac tctgcggtct attactgtgc aagaggggtac      300
tacggtagta actactgggg ccaaggcacc actctcacag tctcg                        345
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<210> 140
<211> 324
<212> DNA
<213> Artificial

<220>

<223> TF1413-03e004 L Chain V Region Gene

<400> 140

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gacatcaaga tgaccagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc      60
gtcacctgca aggccagtc gaattgtgggt actaatgtag cctggatatca acagaaacca      120
gggcaatctc ctaaagcact gatttactcg gcatacctacc ggtacagtgg agtccctgat      180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcagcaa tgtgcagtct      240
gaagacttgg cagagtatct ctgtcagcaa tataacagct atcctctcac gttcgggtgct      300
gggaccaagc tggagctgaa acgg                                           324
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<210> 141
<211> 1338
<212> DNA
<213> Artificial

<220>

<223> TF1413-03e004 H Chain Gene

<400> 141

SEQUENCE LISTING (NIB added).txt

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tcctgcaagg cttctggcta caccttcacc agctactgga tgaactgggt gaagcagagg	120
cctggacgag gcctcgagtg gattggaagg attgatcctt ccgatagtga aactcactac	180
aatcaaaagt tcaaggacaa ggccacactg actgtagaca aatcctccag cacagcctac	240
atccaactca gcagcctgac atctgaggac tctgcggtct attactgtgc aagaggggtac	300
tacggtagta actactgggg ccaaggcacc actctcacag tctcgagcgc caaaacaaca	360
gccccatcgg tctatccact ggcccctgtg tgtggagata caactggctc ctcggtgact	420
ctaggatgcc tgggtcaaggg ttatttccct gagccagtga ctttgacctg gaactctgga	480
tccctgtcca gtggtgtgca caccttccca gctgtcctgc agtctgacct ctacaccctc	540
agcagctcag tgactgtaac ctcgagcacc tggcccagcc agtccatcac ctgcaatgtg	600
gcccacccgg caagcagcac caaggtggac aagaaaattg agccccgggg acccacaatc	660
aagccctgtc ctccatgcaa atgcccagca cctaacctct tgggtggacc atccgtcttc	720
atcttccctc caaagatcaa ggatgtactc atgatctccc tgagcccat agtcacatgt	780
gtggtgggtgg atgtgagcga ggatgacca gatgtccaga tcagctggtt tgtgaacaac	840
gtggaagtac acacagctca gacacaaacc catagagagg attacaacag tactctccgg	900
gtggtcagtg ccctcccat ccagcaccag gactggatga gtggcaagga gttcaaatgc	960
aaggtcaaca acaaagacct cccagcgccc atcgagagaa ccatctcaaa acccaaaggg	1020
tcagtaagag ctccacaggt atatgtcttg cctccaccag aagaagagat gactaagaaa	1080
caggtcactc tgacctgcat ggtcacagac ttcatgcctg aagacattta cgtggagtgg	1140
accaacaacg ggaaaacaga gctaaactac aagaacactg aaccagtcct ggactctgat	1200
ggttcttact tcatgtacag caagctgaga gtggaaaaga agaactgggt ggaaagaaat	1260
agctactcct gttcagtggg ccacgagggt ctgcacaatc accacacgac taagagcttc	1320
tcccggactc cgggtaaa	1338

<210> 142
 <211> 642
 <212> DNA
 <213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> TF1413-03e004 L Chain Gene

<400> 142

gacatcaaga tgaccagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc	60
gtcacctgca aggccagtca gaatgtgggt actaatgtag cctggatatca acagaaacca	120
gggcaatctc ctaaagcact gatttactcg gcacacctacc ggtacagtgg agtccctgat	180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcagcaa tgtgcagtct	240
gaagacttgg cagagtattt ctgtcagcaa tataacagct atcctctcac gttcgggtgct	300
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tccagtgagc agttaacatc tggaggagcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgacagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt	642

<210> 143

<211> 360

<212> DNA

<213> Artificial

<220>

<223> TF1413-03e005 H Chain V Region Gene

<400> 143

caggtgcagc tgaaggagtc aggggcagag cttgtgaggt caggggcctc agtcaagttg	60
tcctgcacag cttctggctt caacattaaa gactactata tgactgggt gaagcagagg	120
cctgaacagg gcctggagtg gattggatgg attgatcctg agaatgggtga tactgaatat	180
gccccgaagt tccagggcaa ggccactatg actgcagaca catcctcaa cacagcctac	240
ctgcagctca gcagcctgac atctgaggac actgccgtct attactgtaa tgccttctac	300
tatgattacg acgggtatgc tatggactac tggggtaag gaacctcagt caccgtctcg	360

<210> 144

<211> 324

<212> DNA

SEQUENCE LISTING (NIB added).txt

<213> Artificial

<220>

<223> TF1413-03e005 L Chain V Region Gene

<400> 144

gatgttgtga tgacccaaac tccatcctcc ttatctgcct ctctgggaga aagagtcagt	60
ctcacttgctc gggcaagtca ggaaattagt ggttacttaa gctggcttca gcagaaacca	120
gatggaacta ttaaacgcct gatctacgcc gcatccactt tagattctgg tgtcccaaaa	180
aggttcagtg gcagtaggtc tgggtcagat tattctctca ccatcagcag ccttgagtct	240
gaagattttg cagactatta ctgtctacaa tatgctagtt atccgctcac gttcggtgct	300
gggaccaagc tggagctgaa acgg	324

<210> 145

<211> 1353

<212> DNA

<213> Artificial

<220>

<223> TF1413-03e005 H Chain Gene

<400> 145

caggtgcagc tgaaggagtc aggggcagag cttgtgaggt caggggcctc agtcaagttg	60
tcctgcacag cttctggctt caacattaaa gactactata tgcactgggt gaagcagagg	120
cctgaacagg gcctggagtg gattggatgg attgatcctg agaatggtga tactgaatat	180
gccccgaagt tccagggcaa ggccactatg actgcagaca catcctcaa cacagcctac	240
ctgcagctca gcagcctgac atctgaggac actgccgtct attactgtaa tgccttctac	300
tatgattacg acgggtatgc tatggactac tgggggtcaag gaacctcagt caccgtctcg	360
agggccaaaa caacagcccc atcgggtctat ccactggccc ctgtgtgtgg agatacaact	420
ggctcctcgg tgactctagg atgcctggtc aagggttatt tccctgagcc agtgaccttg	480
acctggaact ctggatccct gtccagtgggt gtgcacacct tcccagctgt cctgcagtct	540
gacctctaca ccctcagcag ctcagtgact gtaacctcga gcacctggcc cagccagtcc	600
atcacctgca atgtggccca cccggcaagc agcaccaagg tggacaagaa aattgagccc	660
cggggaccca caatcaagcc ctgtcctcca tgcaaatgcc cagcacctaa cctcttgggt	720

SEQUENCE LISTING (NIB added).txt

ggaccatccg tcttcatctt ccttccaaag atcaaggatg tactcatgat ctccctgagc	780
cccatagtca catgtgtggt ggtggatgtg agcgaggatg acccagatgt ccagatcagc	840
tggtttgtga acaacgtgga agtacacaca gctcagacac aaacccatag agaggattac	900
aacagtactc tccgggtggt cagtgccctc cccatccagc accaggactg gatgagtggc	960
aaggagttca aatgcaaggt caacaacaaa gacctcccag cgcccatcga gagaaccatc	1020
tcaaaacca aagggtcagt aagagctcca caggtatatg tcttgctcc accagaagaa	1080
gagatgacta agaaacaggt cactctgacc tgcattgtca cagacttcat gcctgaagac	1140
atttacgtgg agtggaccaa caacgggaaa acagagctaa actacaagaa cactgaacca	1200
gtcctggact ctgatggttc ttacttcatg tacagcaagc tgagagtgga aaagaagaac	1260
tgggtggaaa gaaatagcta ctctgttca gtggtccacg agggcttgca caatcaccac	1320
acgactaaga gcttctcccg gactccgggt aaa	1353

<210> 146
 <211> 642
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e005 L Chain Gene

<400> 146	
gatgttgtga tgacccaaac tccatcctcc ttatctgcct ctctgggaga aagagtcagt	60
ctcacttgtc gggcaagtca ggaaattagt ggttacttaa gctggcttca gcagaaacca	120
gatggaacta ttaaacgcct gatctacgcc gcatccactt tagattctgg tgtcccaaaa	180
aggttcagtg gcagtaggtc tgggtcagat tattctctca ccatcagcag ccttgagtct	240
gaagattttg cagactatta ctgtctacaa tatgctagtt atccgctcac gttcgggtgct	300
gggaccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca	360
tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600

SEQUENCE LISTING (NIB added).txt

tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 642

<210> 147
 <211> 357
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e015 H Chain V Region Gene

<400> 147
 gaggtccagc tgcagcagtc tggacctgag ctggtgaagc ctggagcttc aatgaagata 60
 tcctgcaagg cttctgggta ctcatcact ggctacacca tgaactgggt gaagcagagc 120
 catggaaaga accttgagtg gattggactt attaatcctt acaatggtgg tactagctac 180
 aaccagaagt tcaagggcaa ggccacatta actgtagaca agtcatccag cacagcctac 240
 atggagctcc tcagtctgac atctgaggac tctgcagtct attactgcgc aagaggggat 300
 tactaccccc cctatgctat ggactactgg ggtcaaggaa cctcagtcac cgtctcg 357

<210> 148
 <211> 324
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e015 L Chain V Region Gene

<400> 148
 gacattgtga tgtcacagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc 60
 gtcacctgca aggccagtca gaatgtgggt actaatgtag cctgggtatca acagaaaccg 120
 gggcaatctc ctaaaccact gatttattcg gcgtcctacc ggtatagtgg agtccctgat 180
 cgcttcacag gcagtggatc tgggacagat ttactctca ccatcagcaa tgtgcagtct 240
 gaagacttgg cagagtattt ctgtcagcaa tataacagat atcctctcac gttcggtgtt 300
 gggaccaagc tggaaatcaa acgg 324

<210> 149
 <211> 1350
 <212> DNA
 <213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> TF1413-03e015 H Chain Gene

<400> 149

gaggtccagc tgcagcagtc tggacctgag ctggtgaagc ctggagcttc aatgaagata	60
tcctgcaagg cttctggtta ctcattcact ggctacacca tgaactgggt gaagcagagc	120
catggaaaga accttgagtg gattggactt attaatcctt acaatgggtg tactagctac	180
aaccagaagt tcaagggcaa ggccacatta actgtagaca agtcatccag cacagcctac	240
atggagctcc tcagtctgac atctgaggac tctgcagtct attactgcg c aagaggggat	300
tactaccccc cctatgctat ggactactgg ggtcaaggaa cctcagtcac cgtctcgagc	360
gcaaaaacaa cagccccatc ggtctatcca ctggcccctg tgtgtggaga tacaactggc	420
tcctcgggtga ctctaggatg cctgggtcaag ggttatttcc ctgagccagt gaccttgacc	480
tggaactctg gatccctgtc cagtgggtgtg cacaccttcc cagctgtcct gcagtctgac	540
ctctacacc tcagcagctc agtgactgta acctcgagca cctggcccag ccagtccatc	600
acctgcaatg tggcccaccc ggcaagcagc accaaggtgg acaagaaaat tgagccccgg	660
ggaccacaaa tcaagccctg tcctccatgc aaatgcccag cacctaacct cttgggtgga	720
ccatccgtct tcatcttccc tccaaagatc aaggatgtac tcatgatctc cctgagcccc	780
atagtcacat gtgtgggtgg ggatgtgagc gaggatgacc cagatgtcca gatcagctgg	840
tttgtgaaca acgtggaagt acacacagct cagacacaaa cccatagaga ggattacaac	900
agtactctcc ggggtggctag tgccctcccc atccagcacc aggactggat gagtggcaag	960
gagttcaaat gcaaggtcaa caacaaagac ctcccagcgc ccatcgagag aaccatctca	1020
aaacccaaag ggtcagtaag agctccacag gtatatgtct tgcctccacc agaagaagag	1080
atgactaaga aacaggtcac tctgacctgc atgggtcacag acttcatgcc tgaagacatt	1140
tacgtggagt ggaccaaaa cgggaaaaca gagctaaact acaagaacac tgaaccagtc	1200
ctggactctg atggttctta cttcatgtac agcaagctga gagtggaaaa gaagaactgg	1260
gtggaaagaa atagctactc ctgttcagtg gtccacgagg gtctgcacaa tcaccacacg	1320
actaagagct tctcccggac tccgggtaaa	1350

<210> 150

SEQUENCE LISTING (NIB added).txt

<211> 642
<212> DNA
<213> Artificial

<220>

<223> TF1413-03e015 L Chain Gene

<400> 150

gacattgtga tgtcacagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc	60
gtcacctgca aggccagtca gaatgtgggt actaatgtag cctggatatca acagaaaccg	120
gggcaatctc ctaaaccact gatttattcg gcgtcctacc ggtatagtgg agtccctgat	180
cgcttcacag gcagtggatc tgggacagat ttcactctca ccatcagcaa tgtgcagtct	240
gaagacttgg cagagtattt ctgtcagcaa tataacagat atcctctcac gttcgggtgtt	300
gggaccaagc tggaaatcaa acgggctgat gctgcaccaa ctgtatccat cttcccacca	360
tccagtgagc agttaacatc tggagggtgcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480
aacagttgga ctgatcagga cagcaaagac agcacctaca gcatgagcag caccctcacg	540
ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca	600
tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt	642

<210> 151
<211> 354
<212> DNA
<213> Artificial

<220>

<223> TF1413-03e034 H Chain V Region Gene

<400> 151

gaggtccagc tgcagcagtc tggacctgag ctggagaagc ctggcgcttc agtgaagata	60
tcctgcaagg cttctgggta ctcatcact ggctacaaca tgaactgggt gaagcagagc	120
aatggaaaga gccttgagtg gattggaaat attgatcctt actatgggtg tactagctac	180
aaccagaagt tcaagggcaa ggccacattg actgtagaca aatcctccag cacagcctac	240
atgcagctca agagcctgac atctgaggac tctgcagtct attactgtgc aagagggaac	300
tacgggtact atgctatgga ctactgggggt caaggaacct cagtcaccgt ctcg	354

SEQUENCE LISTING (NIB added).txt

<210> 152
 <211> 324
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e034 L Chain V Region Gene

<400> 152
 gacattgtga tgtcacagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc 60
 atcacctgca aggccagtca gaatgttcgt actgctgtag cctggatatca acagaaacca 120
 gggcagtctc ctaaagcact gatttacttg gcatccaacc ggcacactgg agtcacctgat 180
 cgcttcacag gcagtggatc tgggacagat ttcactctca ccattagcaa tgtgcaatct 240
 gaagacctgg cagattatct ctgtctgcaa cattggaatt atccgctcac gttcgggtgct 300
 gggaccaagc tggagctgaa acgg 324

<210> 153
 <211> 1347
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e034 H Chain Gene

<400> 153
 gaggtccagc tgcagcagtc tggacctgag ctggagaagc ctggcgcttc agtgaagata 60
 tcctgcaagg cttctgggta ctcatcact ggctacaaca tgaactgggt gaagcagagc 120
 aatggaaaga gccttgagtg gattggaaat attgatcctt actatggtgg tactagctac 180
 aaccagaagt tcaagggcaa ggccacattg actgtagaca aatcctccag cacagcctac 240
 atgcagctca agagcctgac atctgaggac tctgcagtct attactgtgc aagagggaac 300
 tacgggtact atgctatgga ctactgggggt caaggaacct cagtcaccgt ctcgagcgcc 360
 aaaacaacag ccccatcggg ctatccactg gccctgtgtg gtggagatac aactggctcc 420
 tcggtgactc taggatgcct ggtcaagggt tatttccttg agccagtgc cttgacctgg 480
 aactctggat ccctgtccag tgggtgtgcac accttcccag ctgtcctgca gtctgacctc 540
 tacacctca gcagctcagt gactgtaacc tcgagcacct ggcccagcca gtccatcacc 600

SEQUENCE LISTING (NIB added).txt

tgcaatgtgg cccacccggc aagcagcacc aaggtggaca agaaaattga gccccgggga	660
cccacaatca agccctgtcc tccatgcaaa tgcccagcac ctaacctctt ggggtggacca	720
tccgtcttca tcttccctcc aaagatcaag gatgtactca tgatctccct gagccccata	780
gtcacatgtg tgggtgggtgga tgtgagcgag gatgaccag atgtccagat cagctggttt	840
gtgaacaacg tggaagtaca cacagctcag acacaaacc atagagagga ttacaacagt	900
actctccggg tggtcagtgc cctccccatc cagcaccagg actggatgag tggcaaggag	960
ttcaaatgca aggtcaacaa caaagacctc ccagcgccca tcgagagaac catctcaaaa	1020
cccaaagggg cagtaagagc tccacaggta tatgtcttgc ctccaccaga agaagagatg	1080
actaagaaac aggtcactct gacctgcatg gtcacagact tcatgcctga agacatttac	1140
gtggagtgga ccaacaacgg gaaaacagag ctaaactaca agaacactga accagtcctg	1200
gactctgatg gttcttactt catgtacagc aagctgagag tggaaaagaa gaactgggtg	1260
gaaagaaata gctactcctg ttcagtggtc cacgagggtc tgcacaatca ccacacgact	1320
aagagcttct cccggactcc gggtaaa	1347

<210> 154
 <211> 642
 <212> DNA
 <213> Artificial

<220>
 <223> TF1413-03e034 L Chain Gene

<400> 154	
gacattgtga tgtcacagtc tccaaaattc atgtccacat cagtaggaga cagggtcagc	60
atcacctgca aggccagtca gaatgttcgt actgctgtag cctgggtatca acagaaacca	120
gggcagtctc cttaaagcact gatttacttg gcatccaacc ggcacactgg agtccctgat	180
cgcttcacag gcagtggatc tgggacagat ttcacttca ccattagcaa tgtgcaatct	240
gaagacctgg cagattatct ctgtctgcaa cattggaatt atccgctcac gttcgggtgct	300
gggaccaagc tggagctgaa acgggctgat gctgcaccaa ctgtatccat cttcccacca	360
tccagtgagc agttaacatc tggaggtgcc tcagtcgtgt gcttcttgaa caacttctac	420
cccaaagaca tcaatgtcaa gtggaagatt gatggcagtg aacgacaaaa tggcgtcctg	480

SEQUENCE LISTING (NIB added).txt

aacagttgga ctgatacagga cagcaaagac agcacctaca gcatgagcag caccctcacg 540
 ttgaccaagg acgagtatga acgacataac agctatacct gtgaggccac tcacaagaca 600
 tcaacttcac ccattgtcaa gagcttcaac aggaatgagt gt 642

<210> 155
 <211> 440
 <212> PRT
 <213> Homo sapiens

<220>
 <221> MISC_FEATURE
 <223> Human GPC3 N Terminal Fragment

<400> 155

Asp Ala Thr Cys His Gln Val Arg Ser Phe Phe Gln Arg Leu Gln Pro
 1 5 10 15

Gly Leu Lys Trp Val Pro Glu Thr Pro Val Pro Gly Ser Asp Leu Gln
 20 25 30

Val Cys Leu Pro Lys Gly Pro Thr Cys Cys Ser Arg Lys Met Glu Glu
 35 40 45

Lys Tyr Gln Leu Thr Ala Arg Leu Asn Met Glu Gln Leu Leu Gln Ser
 50 55 60

Ala Ser Met Glu Leu Lys Phe Leu Ile Ile Gln Asn Ala Ala Val Phe
 65 70 75 80

Gln Glu Ala Phe Glu Ile Val Val Arg His Ala Lys Asn Tyr Thr Asn
 85 90 95

Ala Met Phe Lys Asn Asn Tyr Pro Ser Leu Thr Pro Gln Ala Phe Glu
 100 105 110

Phe Val Gly Glu Phe Phe Thr Asp Val Ser Leu Tyr Ile Leu Gly Ser
 115 120 125

Asp Ile Asn Val Asp Asp Met Val Asn Glu Leu Phe Asp Ser Leu Phe

SEQUENCE LISTING (NIB added).txt

130

135

140

Pro Val Ile Tyr Thr Gln Leu Met Asn Pro Gly Leu Pro Asp Ser Ala
145 150 155 160

Leu Asp Ile Asn Glu Cys Leu Arg Gly Ala Arg Arg Asp Leu Lys Val
165 170 175

Phe Gly Asn Phe Pro Lys Leu Ile Met Thr Gln Val Ser Lys Ser Leu
180 185 190

Gln Val Thr Arg Ile Phe Leu Gln Ala Leu Asn Leu Gly Ile Glu Val
195 200 205

Ile Asn Thr Thr Asp His Leu Lys Phe Ser Lys Asp Cys Gly Arg Met
210 215 220

Leu Thr Arg Met Trp Tyr Cys Ser Tyr Cys Gln Gly Leu Met Met Val
225 230 235 240

Lys Pro Cys Gly Gly Tyr Cys Asn Val Val Met Gln Gly Cys Met Ala
245 250 255

Gly Val Val Glu Ile Asp Lys Tyr Trp Arg Glu Tyr Ile Leu Ser Leu
260 265 270

Glu Glu Leu Val Asn Gly Met Tyr Arg Ile Tyr Asp Met Glu Asn Val
275 280 285

Leu Leu Gly Leu Phe Ser Thr Ile His Asp Ser Ile Gln Tyr Val Gln
290 295 300

Lys Asn Ala Gly Lys Leu Thr Thr Thr Ile Gly Lys Leu Cys Ala His
305 310 315 320

Ser Gln Gln Arg Gln Tyr Arg Ser Ala Tyr Tyr Pro Glu Asp Leu Phe
325 330 335

Ile Asp Lys Lys Val Leu Lys Val Ala His Val Glu His Glu Glu Thr

SEQUENCE LISTING (NIB added).txt

340

345

350

Leu Ser Ser Arg Arg Arg Glu Leu Ile Gln Lys Leu Lys Ser Phe Ile
355 360 365

Ser Phe Tyr Ser Ala Leu Pro Gly Tyr Ile Cys Ser His Ser Pro Val
370 375 380

Ala Glu Asn Asp Thr Leu Cys Trp Asn Gly Gln Glu Leu Val Glu Arg
385 390 395 400

Tyr Ser Gln Lys Ala Ala Arg Asn Gly Met Lys Asn Gln Phe Asn Leu
405 410 415

His Glu Leu Lys Met Lys Gly Pro Glu Pro Val Val Ser Gln Ile Ile
420 425 430

Asp Lys Leu Lys His Ile Asn Gln
435 440

<210> 156
<211> 109
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> Human GPC3 C Terminal Fragment

<400> 156

Leu Leu Arg Thr Met Ser Met Pro Lys Gly Arg Val Leu Asp Lys Asn
1 5 10 15

Leu Asp Glu Glu Gly Phe Glu Ser Gly Asp Cys Gly Asp Asp Glu Asp
20 25 30

Glu Cys Ile Gly Gly Ser Gly Asp Gly Met Ile Lys Val Lys Asn Gln
35 40 45

Leu Arg Phe Leu Ala Glu Leu Ala Tyr Asp Leu Asp Val Asp Asp Ala

SEQUENCE LISTING (NIB added).txt

50

55

60

Pro Gly Asn Ser Gln Gln Ala Thr Pro Lys Asp Asn Glu Ile Ser Thr
65 70 75 80

Phe His Asn Leu Gly Asn Val His Ser Pro Leu Lys Leu Leu Thr Ser
85 90 95

Met Ala Ile Ser Val Val Cys Phe Phe Phe Leu Val His
100 105

<210> 157
<211> 580
<212> PRT
<213> Homo sapiens

<220>
<221> MISC_FEATURE
<223> Human GPC3

<400> 157

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

Ser Leu Asp Phe Pro Gly Gln Ala Gln Pro Pro Pro Pro Pro Pro Asp
20 25 30

Ala Thr Cys His Gln Val Arg Ser Phe Phe Gln Arg Leu Gln Pro Gly
35 40 45

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

Cys Leu Pro Lys Gly Pro Thr Cys Cys Ser Arg Lys Met Glu Glu Lys
65 70 75 80

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

Ser Met Glu Leu Lys Phe Leu Ile Ile Gln Asn Ala Ala Val Phe Gln

SEQUENCE LISTING (NIB added).txt

100

105

110

Glu Ala Phe Glu Ile Val Val Arg His Ala Lys Asn Tyr Thr Asn Ala
 115 120 125

Met Phe Lys Asn Asn Tyr Pro Ser Leu Thr Pro Gln Ala Phe Glu Phe
 130 135 140

Val Gly Glu Phe Phe Thr Asp Val Ser Leu Tyr Ile Leu Gly Ser Asp
 145 150 155 160

Ile Asn Val Asp Asp Met Val Asn Glu Leu Phe Asp Ser Leu Phe Pro
 165 170 175

Val Ile Tyr Thr Gln Leu Met Asn Pro Gly Leu Pro Asp Ser Ala Leu
 180 185 190

Asp Ile Asn Glu Cys Leu Arg Gly Ala Arg Arg Asp Leu Lys Val Phe
 195 200 205

Gly Asn Phe Pro Lys Leu Ile Met Thr Gln Val Ser Lys Ser Leu Gln
 210 215 220

Val Thr Arg Ile Phe Leu Gln Ala Leu Asn Leu Gly Ile Glu Val Ile
 225 230 235 240

Asn Thr Thr Asp His Leu Lys Phe Ser Lys Asp Cys Gly Arg Met Leu
 245 250 255

Thr Arg Met Trp Tyr Cys Ser Tyr Cys Gln Gly Leu Met Met Val Lys
 260 265 270

Pro Cys Gly Gly Tyr Cys Asn Val Val Met Gln Gly Cys Met Ala Gly
 275 280 285

Val Val Glu Ile Asp Lys Tyr Trp Arg Glu Tyr Ile Leu Ser Leu Glu
 290 295 300

Glu Leu Val Asn Gly Met Tyr Arg Ile Tyr Asp Met Glu Asn Val Leu

SEQUENCE LISTING (NIB added).txt

305		310		315		320
Leu Gly Leu Phe Ser Thr Ile His Asp Ser Ile Gln Tyr Val Gln Lys						
		325		330		335
Asn Ala Gly Lys Leu Thr Thr Thr Ile Gly Lys Leu Cys Ala His Ser						
		340		345		350
Gln Gln Arg Gln Tyr Arg Ser Ala Tyr Tyr Pro Glu Asp Leu Phe Ile						
		355		360		365
Asp Lys Lys Val Leu Lys Val Ala His Val Glu His Glu Glu Thr Leu						
		370		375		380
Ser Ser Arg Arg Arg Glu Leu Ile Gln Lys Leu Lys Ser Phe Ile Ser						
		385		390		395
Phe Tyr Ser Ala Leu Pro Gly Tyr Ile Cys Ser His Ser Pro Val Ala						
		405		410		415
Glu Asn Asp Thr Leu Cys Trp Asn Gly Gln Glu Leu Val Glu Arg Tyr						
		420		425		430
Ser Gln Lys Ala Ala Arg Asn Gly Met Lys Asn Gln Phe Asn Leu His						
		435		440		445
Glu Leu Lys Met Lys Gly Pro Glu Pro Val Val Ser Gln Ile Ile Asp						
		450		455		460
Lys Leu Lys His Ile Asn Gln Leu Leu Arg Thr Met Ser Met Pro Lys						
		465		470		475
Gly Arg Val Leu Asp Lys Asn Leu Asp Glu Glu Gly Phe Glu Ser Gly						
		485		490		495
Asp Cys Gly Asp Asp Glu Asp Glu Cys Ile Gly Gly Ser Gly Asp Gly						
		500		505		510
Met Ile Lys Val Lys Asn Gln Leu Arg Phe Leu Ala Glu Leu Ala Tyr						

SEQUENCE LISTING (NIB added).txt

515

520

525

Asp Leu Asp Val Asp Asp Ala Pro Gly Asn Ser Gln Gln Ala Thr Pro
530 535 540

Lys Asp Asn Glu Ile Ser Thr Phe His Asn Leu Gly Asn Val His Ser
545 550 555 560

Pro Leu Lys Leu Leu Thr Ser Met Ala Ile Ser Val Val Cys Phe Phe
565 570 575

Phe Leu Val His
580

<210> 158
<211> 1320
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Human GPC3 N Terminal Fragment Gene

<400> 158
gaggccacct gtcaccaagt ccgctccttc ttccagagac tgcagcccgg actcaagtgg 60
gtgccagaaa ctcccgtgcc aggatcagat ttgcaagtat gtctccctaa gggcccaaca 120
tgctgctcaa gaaagatgga agaaaaatac caactaacag cacgattgaa catggaacag 180
ctgcttcagt ctgcaagtat ggagctcaag ttcttaatta ttcagaatgc tgcggttttc 240
caagaggcct ttgaaattgt tgttcgccat gccaagaact acaccaatgc catgttcaag 300
aacaactacc caagcctgac tccacaagct tttgagtttg tgggtgaatt tttcacagat 360
gtgtctctct acatcttggg ttctgacatc aatgtagatg acatggtcaa tgaattgttt 420
gacagcctgt ttccagtcac ctatacccag ctaatgaacc caggcctgcc tgattcagcc 480
ttggacatca atgagtgctt ccgaggagca agacgtgacc tgaaagtatt tgggaatttc 540
ccaagctta ttatgaccca gggtttccaag tcactgcaag tcactaggat cttccttcag 600
gctctgaatc ttggaattga agtgatcaac acaactgatc acctgaagtt cagtaaggac 660

SEQUENCE LISTING (NIB added).txt

tgtggccgaa tgctcaccag aatgtggtac tgctcttact gccagggact gatgatggtt	720
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attgacaagt actggagaga atacattctg tcccttgaag aacttgtgaa tggcatgtac	840
agaatctatg acatggagaa cgtactgctt ggtctctttt caacaatcca tgattctatc	900
cagtatgtcc agaagaatgc aggaaagctg accaccacta ttggcaagtt atgtgcccac	960
tctcaacaac gccaatatag atctgcttat taccctgaag atctctttat tgacaagaaa	1020
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attcagaagt tgaagtcttt catcagcttc tatagtgcct tgcctggcta catctgcagc	1140
catagccctg tggcggaaaa cgacaccctt tgctggaatg gacaagaact cgtggagaga	1200
tacagccaaa aggagcaag gaatggaatg aaaaaccagt tcaatctcca tgagctgaaa	1260
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<210> 159
 <211> 327
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <223> Human GPC3 C Terminal Fragment Gene

<400> 159	
ctcctgagaa ccatgtctat gcccaaaggt agagttctgg ataaaaacct ggatgaggaa	60
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ggaatgataa aagtgaagaa tcagctccgc ttccttgagc aactggccta tgatctggat	180
gtggatgatg cgcctggaaa cagtcagcag gcaactccga aggacaacga gataagcacc	240
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<210> 160
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 <212> DNA
 <213> Homo sapiens

SEQUENCE LISTING (NIB added).txt

<400> 160

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ttcttccaga gactgcagcc cggactcaag tgggtgccag aaactcccgt gccaggatca	180
gatttgcaag tatgtctccc taagggccca acatgctgct caagaaagat ggaagaaaaa	240
taccaactaa cagcacgatt gaacatggaa cagctgcttc agtctgcaag tatggagctc	300
aagttcttaa ttattcagaa tgctgcggtt ttccaagagg cttttgaaat tgttgttcgc	360
catgccaa ga actacaccaa tgccatgttc aagaacaact acccaagcct gactccacaa	420
gcttttgagt ttgtgggtga atttttcaca gatgtgtctc tctacatctt gggttctgac	480
atcaatgtag atgacatggt caatgaattg ttgacagcc tgtttccagt catctatacc	540
cagctaata ga acccaggcct gcctgattca gccttggaca tcaatgagtg cctccgagga	600
gcaagacgtg acctgaaagt atttgggaat ttccccaagc ttattatgac ccaggtttcc	660
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aacacaactg atcacctgaa gttcagtaag gactgtggcc gaatgctcac cagaatgtgg	780
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gtcatgcaag gctgtatggc aggtgtggtg gagattgaca agtactggag agaatacatt	900
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cttgggtctt tttcaacaat ccatgattct atccagtatg tccagaagaa tgcaggaaaag	1020
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gaagaaacct tatccagccg aagaaggga ctaattcaga agttgaagtc tttcatcagc	1200
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ctttgctgga atggacaaga actcgtggag agatacagcc aaaaggcagc aaggaatgga	1320
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caaattattg acaaactgaa gcacattaac cagctcctga gaaccatgtc tatgccccaa	1440
ggtagagttc tggataaaaa cctggatgag gaagggtttg aaagtggaga ctgcggtgat	1500
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SEQUENCE LISTING (NIB added).txt

cgcttccttg cagaactggc ctatgatctg gatgtggatg atgcgcctgg aaacagtcag 1620
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tga 1743

<210> 161
<211> 33
<212> DNA
<213> Artificial

<220>
<223> F-1 Primer

<400> 161
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<210> 162
<211> 33
<212> DNA
<213> Artificial

<220>
<223> R-7 Primer

<400> 162
tccccgcggc tggttaatgt gcttcagttt gtc 33

<210> 163
<211> 28
<212> DNA
<213> Artificial

<220>
<223> F-8 Primer

<400> 163
tccccccggg ctctgagaa ccatgtct 28

<210> 164
<211> 33
<212> DNA
<213> Artificial

<220>

SEQUENCE LISTING (NIB added).txt

<223> R-9 Primer

<400> 164

tccccgcggg tgcaccagga agaagaagca cac

33

<210> 165

<211> 241

<212> PRT

<213> Artificial

<220>

<223> TF1413-02d028 scFv

<400> 165

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

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

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

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

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

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

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

Thr Thr Leu Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Lys Phe Met
130 135 140

SEQUENCE LISTING (NIB added).txt

Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln
145 150 155 160

Asn Val Arg Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser
165 170 175

Pro Lys Ala Leu Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val Pro
180 185 190

Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
195 200 205

Ser Asn Val Gln Ser Glu Asp Leu Ala Asp Tyr Phe Cys Leu Gln His
210 215 220

Trp Asn Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
225 230 235 240

Arg

<210> 166
<211> 245
<212> PRT
<213> Artificial

<220>
<223> TF1413-02d039 scFv

<400> 166

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

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

Ser Val Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Asp Val Val Met Thr Gln Thr Pro Leu Ser Leu Pro
130 135 140

Val Ser Leu Gly Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser
145 150 155 160

Leu Val His Ser Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln Lys
165 170 175

Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe
180 185 190

Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe
195 200 205

Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Phe
210 215 220

Cys Ser Gln Ser Thr His Val Pro Leu Thr Phe Gly Ala Gly Thr Lys
225 230 235 240

Leu Glu Leu Lys Arg
245

<210> 167

<211> 237

SEQUENCE LISTING (NIB added).txt

<212> PRT

<213> Artificial

<220>

<223> TF1413-02e004 scFv

<400> 167

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

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

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

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

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

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

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

Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Asp Ile Val Leu Thr Gln Ser Pro Lys Phe Met Ser Thr Ser
130 135 140

Val Gly Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ser
145 150 155 160

Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
165 170 175

SEQUENCE LISTING (NIB added).txt

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

Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
195 200 205

Gln Ala Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ser Thr
210 215 220

Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg
225 230 235

<210> 168
<211> 243
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e014 scFv

<400> 168

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

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

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

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

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

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

Asn Ala Gly Tyr Tyr Asp Tyr Asp Gly Tyr Ala Met Asp Tyr Trp Gly
100 105 110

SEQUENCE LISTING (NIB added).txt

Gln Gly Thr Ser Val Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

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

Phe Met Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys Ala
145 150 155 160

Ser Gln Asp Val Gly Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly
165 170 175

Gln Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg His Thr Gly
180 185 190

Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu
195 200 205

Thr Ile Ser Asn Val Gln Ser Glu Asp Leu Ala Asp Tyr Phe Cys Gln
210 215 220

Gln Tyr Ser Ser Tyr Pro Leu Thr Phe Gly Gly Gly Thr Lys Leu Glu
225 230 235 240

Ile Lys Arg

<210> 169
<211> 246
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e030 scFv

<400> 169

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

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

Thr Leu Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly
115 120 125

Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ala
130 135 140

Met Ser Val Gly Gln Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser
145 150 155 160

Leu Leu Asn Ser Ser Asn Gln Lys Asn Tyr Leu Ala Trp Tyr Gln Gln
165 170 175

Lys Pro Gly Gln Ser Pro Lys Leu Leu Val Tyr Phe Ala Ser Thr Arg
180 185 190

Glu Ser Gly Val Pro Asp Arg Phe Ile Gly Ser Gly Ser Gly Thr Asp
195 200 205

Phe Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Asp Tyr
210 215 220

SEQUENCE LISTING (NIB added).txt

Phe Cys Gln Gln His Tyr Ser Thr Pro Leu Thr Phe Gly Ala Gly Thr
225 230 235 240

Lys Leu Glu Leu Lys Arg
245

<210> 170
<211> 239
<212> PRT
<213> Artificial

<220>
<223> TF1413-02e040 scFv

<400> 170

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

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

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

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

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

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

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

Leu Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly
115 120 125

Gly Gly Ser Asp Ile Leu Leu Thr Gln Ser Pro Lys Phe Met Ser Thr
130 135 140

SEQUENCE LISTING (NIB added).txt

Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asn Val
145 150 155 160

Arg Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys
165 170 175

Ala Leu Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val Pro Asp Arg
180 185 190

Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn
195 200 205

Val Gln Ser Glu Asp Leu Ala Asp Tyr Phe Cys Leu Gln His Trp Asn
210 215 220

Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
225 230 235

<210> 171
<211> 238
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e001 scFv

<400> 171

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

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

Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Asp Ile Lys Met Thr Gln Ser Pro Lys Phe Met Ser Thr Ser
130 135 140

Val Gly Asp Arg Val Ser Val Thr Cys Glu Ala Ser Gln Asn Val Asp
145 150 155 160

Asn Asn Val Val Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala
165 170 175

Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe
180 185 190

Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val
195 200 205

Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Tyr
210 215 220

Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Arg
225 230 235

<210> 172

<211> 238

<212> PRT

<213> Artificial

<220>

<223> TF1413-03e004 scFv

SEQUENCE LISTING (NIB added).txt

<400> 172

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

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

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

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

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

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

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

Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

Gly Ser Asp Ile Lys Met Thr Gln Ser Pro Lys Phe Met Ser Thr Ser
130 135 140

Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser Gln Asn Val Gly
145 150 155 160

Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala
165 170 175

Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe
180 185 190

Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val
195 200 205

SEQUENCE LISTING (NIB added).txt

Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Asn Ser Tyr
210 215 220

Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg
225 230 235

<210> 173
<211> 243
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e005 scFv

<400> 173

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

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

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

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

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

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

Asn Ala Phe Tyr Tyr Asp Tyr Asp Gly Tyr Ala Met Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Ser Val Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly
115 120 125

SEQUENCE LISTING (NIB added).txt

Gly Ser Gly Gly Gly Gly Ser Asp Val Val Met Thr Gln Thr Pro Ser
130 135 140

Ser Leu Ser Ala Ser Leu Gly Glu Arg Val Ser Leu Thr Cys Arg Ala
145 150 155 160

Ser Gln Glu Ile Ser Gly Tyr Leu Ser Trp Leu Gln Gln Lys Pro Asp
165 170 175

Gly Thr Ile Lys Arg Leu Ile Tyr Ala Ala Ser Thr Leu Asp Ser Gly
180 185 190

Val Pro Lys Arg Phe Ser Gly Ser Arg Ser Gly Ser Asp Tyr Ser Leu
195 200 205

Thr Ile Ser Ser Leu Glu Ser Glu Asp Phe Ala Asp Tyr Tyr Cys Leu
210 215 220

Gln Tyr Ala Ser Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu
225 230 235 240

Leu Lys Arg

<210> 174
<211> 242
<212> PRT
<213> Artificial

<220>
<223> TF1413-03e015 scFv

<400> 174

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

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

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

SEQUENCE LISTING (NIB added).txt

Gly Leu Ile Asn Pro Tyr Asn Gly Gly Thr Ser Tyr Asn Gln Lys Phe
50 55 60

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

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

Ala Arg Gly Asp Tyr Tyr Pro Pro Tyr Ala Met Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Ser Val Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Gly Gly Gly Gly Ser Asp Ile Val Met Ser Gln Ser Pro Lys Phe
130 135 140

Met Ser Thr Ser Val Gly Asp Arg Val Ser Val Thr Cys Lys Ala Ser
145 150 155 160

Gln Asn Val Gly Thr Asn Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln
165 170 175

Ser Pro Lys Pro Leu Ile Tyr Ser Ala Ser Tyr Arg Tyr Ser Gly Val
180 185 190

Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
195 200 205

Ile Ser Asn Val Gln Ser Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln
210 215 220

Tyr Asn Arg Tyr Pro Leu Thr Phe Gly Val Gly Thr Lys Leu Glu Ile
225 230 235 240

Lys Arg

SEQUENCE LISTING (NIB added).txt

<210> 175
 <211> 241
 <212> PRT
 <213> Artificial

<220>
 <223> TF1413-03e034 scFv

<400> 175

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

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

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

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

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

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

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

Thr Ser Val Thr Val Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 115 120 125

Gly Gly Gly Gly Ser Asp Ile Val Met Ser Gln Ser Pro Lys Phe Met
 130 135 140

Ser Thr Ser Val Gly Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln
 145 150 155 160

SEQUENCE LISTING (NIB added).txt

Asn Val Arg Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser
165 170 175

Pro Lys Ala Leu Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val Pro
180 185 190

Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile
195 200 205

Ser Asn Val Gln Ser Glu Asp Leu Ala Asp Tyr Phe Cys Leu Gln His
210 215 220

Trp Asn Tyr Pro Leu Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys
225 230 235 240

Arg

<210> 176
<211> 20
<212> DNA
<213> Artificial

<220>
<223> T7 primer

<400> 176
taatacgact cactataggg 20

<210> 177
<211> 21
<212> DNA
<213> Artificial

<220>
<223> cp3R primer

<400> 177
gccagcattg acaggaggtt g 21

<210> 178
<211> 241
<212> PRT
<213> Artificial

SEQUENCE LISTING (NIB added).txt

<220>

<223> #5 VH1-15-VL1

<400> 178

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

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

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

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

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

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

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

Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
130 135 140

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser
145 150 155 160

Gln Asn Val Arg Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys
165 170 175

Ala Pro Lys Ala Leu Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val
180 185 190

SEQUENCE LISTING (NIB added).txt

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
195 200 205

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln
210 215 220

His Trp Asn Tyr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
225 230 235 240

Lys

<210> 179
<211> 241
<212> PRT
<213> Artificial

<220>
<223> #5 VH2-15-VL1

<400> 179

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

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
130 135 140

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser
145 150 155 160

Gln Asn Val Arg Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys
165 170 175

Ala Pro Lys Ala Leu Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val
180 185 190

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
195 200 205

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln
210 215 220

His Trp Asn Tyr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
225 230 235 240

Lys

<210> 180
<211> 241
<212> PRT
<213> Artificial

<220>
<223> #5 VH3-15-VL1

<400> 180

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

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

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

Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
115 120 125

Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
130 135 140

Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser
145 150 155 160

Gln Asn Val Arg Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys
165 170 175

Ala Pro Lys Ala Leu Ile Tyr Leu Ala Ser Asn Arg His Thr Gly Val
180 185 190

Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
195 200 205

Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln
210 215 220

SEQUENCE LISTING (NIB added).txt

His Trp Asn Tyr Pro Leu Thr Phe Gly Gly Gly Thr Lys Val Glu Ile
225 230 235 240

Lys

<210> 181
<211> 245
<212> PRT
<213> Artificial

<220>
<223> #6 VH1-15-VL1

<400> 181

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

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

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

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

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

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

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

Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
115 120 125

SEQUENCE LISTING (NIB added).txt

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu
130 135 140

Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln
145 150 155 160

Ser Leu Val His Ser Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln
165 170 175

Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg
180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr
210 215 220

Tyr Cys Ser Gln Ser Thr His Val Pro Leu Thr Phe Gly Gly Gly Thr
225 230 235 240

Lys Val Glu Ile Lys
245

<210> 182
<211> 245
<212> PRT
<213> Artificial

<220>
<223> #6 VH1-15-VL2

<400> 182

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

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

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

Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu
130 135 140

Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln
145 150 155 160

Ser Leu Val His Ser Ser Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln
165 170 175

Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg
180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr
210 215 220

Tyr Cys Ser Gln Ser Thr His Val Pro Leu Thr Phe Gly Gly Gly Thr
225 230 235 240

Lys Val Glu Ile Lys
245

SEQUENCE LISTING (NIB added).txt

<210> 183
 <211> 245
 <212> PRT
 <213> Artificial

<220>
 <223> #6 VH2-15-VL1

<400> 183

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

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

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

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

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

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

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

Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
 115 120 125

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu
 130 135 140

Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln
 145 150 155 160

SEQUENCE LISTING (NIB added).txt

Ser Leu Val His Ser Asn Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln
165 170 175

Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg
180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr
210 215 220

Tyr Cys Ser Gln Ser Thr His Val Pro Leu Thr Phe Gly Gly Gly Thr
225 230 235 240

Lys Val Glu Ile Lys
245

<210> 184

<211> 245

<212> PRT

<213> Artificial

<220>

<223> #6 VH2-15-VL2

<400> 184

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

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

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

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

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

SEQUENCE LISTING (NIB added).txt

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

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

Met Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser
115 120 125

Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu
130 135 140

Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln
145 150 155 160

Ser Leu Val His Ser Ser Gly Asn Thr Tyr Leu His Trp Tyr Leu Gln
165 170 175

Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Lys Val Ser Asn Arg
180 185 190

Phe Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
195 200 205

Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr
210 215 220

Tyr Cys Ser Gln Ser Thr His Val Pro Leu Thr Phe Gly Gly Gly Thr
225 230 235 240

Lys Val Glu Ile Lys
245

<210> 185

<211> 283

<212> PRT

<213> Artificial

<220>

SEQUENCE LISTING (NIB added).txt

<223> hCD8-hCD28-h4-1BB-hCD3

<400> 185

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

Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu
20 25 30

Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg
35 40 45

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
50 55 60

Thr Cys Gly Val Leu Leu Leu Ser Leu Val Ile Thr Leu Tyr Cys Asn
65 70 75 80

His Arg Asn Arg Ser Lys Arg Ser Arg Leu Leu His Ser Asp Tyr Met
85 90 95

Asn Met Thr Pro Arg Arg Pro Gly Pro Thr Arg Lys His Tyr Gln Pro
100 105 110

Tyr Ala Pro Pro Arg Asp Phe Ala Ala Tyr Arg Ser Arg Phe Ser Val
115 120 125

Val Lys Arg Gly Arg Lys Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe
130 135 140

Met Arg Pro Val Gln Thr Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg
145 150 155 160

Phe Pro Glu Glu Glu Glu Gly Gly Cys Glu Leu Arg Val Lys Phe Ser
165 170 175

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

SEQUENCE LISTING (NIB added).txt

Asn Glu Leu Asn Leu Gly Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys
195 200 205

Arg Arg Gly Arg Asp Pro Glu Met Gly Gly Lys Pro Arg Arg Lys Asn
210 215 220

Pro Gln Glu Gly Leu Tyr Asn Glu Leu Gln Lys Asp Lys Met Ala Glu
225 230 235 240

Ala Tyr Ser Glu Ile Gly Met Lys Gly Glu Arg Arg Arg Gly Lys Gly
245 250 255

His Asp Gly Leu Tyr Gln Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr
260 265 270

Asp Ala Leu His Met Gln Ala Leu Pro Pro Arg
275 280

<210> 186
<211> 277
<212> PRT
<213> Artificial

<220>
<223> hCD8-hCD28-h4-1BB-hCD3

<400> 186

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

Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu
20 25 30

Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg
35 40 45

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
50 55 60

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

SEQUENCE LISTING (NIB added).txt

Arg Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg
85 90 95

Pro Gly Pro Thr Arg Lys His Tyr Gln Pro Tyr Ala Pro Pro Arg Asp
100 105 110

Phe Ala Ala Tyr Arg Ser Arg Phe Ser Val Val Lys Arg Gly Arg Lys
115 120 125

Lys Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr
130 135 140

Thr Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu
145 150 155 160

Gly Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro
165 170 175

Ala Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly
180 185 190

Arg Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro
195 200 205

Glu Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr
210 215 220

Asn Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly
225 230 235 240

Met Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln
245 250 255

Gly Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln
260 265 270

Ala Leu Pro Pro Arg
275

SEQUENCE LISTING (NIB added).txt

<210> 187
 <211> 276
 <212> PRT
 <213> Artificial

<220>
 <223> hCD8-hCD28-h4-1BB-hCD3

<400> 187

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

Arg Pro Pro Thr Pro Ala Pro Thr Ile Ala Ser Gln Pro Leu Ser Leu
 20 25 30

Arg Pro Glu Ala Cys Arg Pro Ala Ala Gly Gly Ala Val His Thr Arg
 35 40 45

Gly Leu Asp Phe Ala Cys Asp Ile Tyr Ile Trp Ala Pro Leu Ala Gly
 50 55 60

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

Ser Arg Leu Leu His Ser Asp Tyr Met Asn Met Thr Pro Arg Arg Pro
 85 90 95

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

Ala Ala Tyr Arg Ser Arg Phe Ser Val Val Lys Arg Gly Arg Lys Lys
 115 120 125

Leu Leu Tyr Ile Phe Lys Gln Pro Phe Met Arg Pro Val Gln Thr Thr
 130 135 140

Gln Glu Glu Asp Gly Cys Ser Cys Arg Phe Pro Glu Glu Glu Glu Gly
 145 150 155 160

SEQUENCE LISTING (NIB added).txt

Gly Cys Glu Leu Arg Val Lys Phe Ser Arg Ser Ala Asp Ala Pro Ala
165 170 175

Tyr Gln Gln Gly Gln Asn Gln Leu Tyr Asn Glu Leu Asn Leu Gly Arg
180 185 190

Arg Glu Glu Tyr Asp Val Leu Asp Lys Arg Arg Gly Arg Asp Pro Glu
195 200 205

Met Gly Gly Lys Pro Arg Arg Lys Asn Pro Gln Glu Gly Leu Tyr Asn
210 215 220

Glu Leu Gln Lys Asp Lys Met Ala Glu Ala Tyr Ser Glu Ile Gly Met
225 230 235 240

Lys Gly Glu Arg Arg Arg Gly Lys Gly His Asp Gly Leu Tyr Gln Gly
245 250 255

Leu Ser Thr Ala Thr Lys Asp Thr Tyr Asp Ala Leu His Met Gln Ala
260 265 270

Leu Pro Pro Arg
275

<210> 188
<211> 19
<212> PRT
<213> Homo sapiens

<400> 188

Met Asp Trp Thr Trp Arg Ile Leu Phe Leu Val Ala Ala Ala Thr Gly
1 5 10 15

Ala His Ser