

FP1801 Sequence Listing.TXT
SEQUENCE LISTING

<110> DAIICHI SANKNYO, COMPANY, LIMITED
<120> Anti GPR20 antibodies and anti GPR20 antibody drug conjugates
<130> DSPCT-FP1801
<150> JP2017-6004
<151> 2017-01-17
<160> 113
<170> PatentIn version 3.5
<210> 1
<211> 358
<212> PRT
<213> Homo sapiens
<400> 1

Met Pro Ser Val Ser Pro Ala Gly Pro Ser Ala Gly Ala Val Pro Asn
1 5 10 15

Ala Thr Ala Val Thr Thr Val Arg Thr Asn Ala Ser Gly Leu Glu Val
20 25 30

Pro Leu Phe His Leu Phe Ala Arg Leu Asp Glu Glu Leu His Gly Thr
35 40 45

Phe Pro Gly Leu Trp Leu Ala Leu Met Ala Val His Gly Ala Ile Phe
50 55 60

Leu Ala Gly Leu Val Leu Asn Gly Leu Ala Leu Tyr Val Phe Cys Cys
65 70 75 80

Arg Thr Arg Ala Lys Thr Pro Ser Val Ile Tyr Thr Ile Asn Leu Val
85 90 95

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

Tyr Tyr Gly Ala Arg Gly Cys Leu Arg Cys Ala Phe Pro His Val Leu
115 120 125

Gly Tyr Phe Leu Asn Met His Cys Ser Ile Leu Phe Leu Thr Cys Ile
130 135 140

Cys Val Asp Arg Tyr Leu Ala Ile Val Arg Pro Glu Gly Ser Arg Arg
145 150 155 160

Cys Arg Gln Pro Ala Cys Ala Arg Ala Val Cys Ala Phe Val Trp Leu
165 170 175

Ala Ala Gly Ala Val Thr Leu Ser Val Leu Gly Val Thr Gly Ser Arg
180 185 190

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Pro Cys Cys Arg Val Phe Ala Leu Thr Val Leu Glu Phe Leu Leu Pro
195 200 205

Leu Leu Val Ile Ser Val Phe Thr Gly Arg Ile Met Cys Ala Leu Ser
210 215 220

Arg Pro Gly Leu Leu His Gln Gly Arg Gln Arg Arg Val Arg Ala Met
225 230 235 240

Gln Leu Leu Leu Thr Val Leu Ile Ile Phe Leu Val Cys Phe Thr Pro
245 250 255

Phe His Ala Arg Gln Val Ala Val Ala Leu Trp Pro Asp Met Pro His
260 265 270

His Thr Ser Leu Val Val Tyr His Val Ala Val Thr Leu Ser Ser Leu
275 280 285

Asn Ser Cys Met Asp Pro Ile Val Tyr Cys Phe Val Thr Ser Gly Phe
290 295 300

Gln Ala Thr Val Arg Gly Leu Phe Gly Gln His Gly Glu Arg Glu Pro
305 310 315 320

Ser Ser Gly Asp Val Val Ser Met His Arg Ser Ser Lys Gly Ser Gly
325 330 335

Arg His His Ile Leu Ser Ala Gly Pro His Ala Leu Thr Gln Ala Leu
340 345 350

Ala Asn Gly Pro Glu Ala
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<210> 2
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<212> PRT
<213> Rattus norvegicus

<220>
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<222> (1)..(19)

<400> 2

Met Glu Trp Asn Trp Val Phe Leu Phe Leu Leu Ser Val Thr Ala Glu
1 5 10 15

Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys
20 25 30

Pro Gly Ser Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe
35 40 45

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Thr Ser Tyr Tyr Ile Ser Trp Ile Lys Gln Thr Thr Gly Gln Gly Leu
50 55 60

Lys Tyr Ile Gly Phe Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
65 70 75 80

Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
85 90 95

Thr Ala Phe Met Gln Leu Ser Ser Leu Thr Pro Asp Asp Ser Ala Ile
100 105 110

Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys
115 120 125

Phe Asp Tyr Trp Gly Gln Gly Val Met Val Thr Val Ser Ser Ala Gln
130 135 140

Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala Pro Gly Cys Gly Asp Thr
145 150 155 160

Thr Ser Ser Thr Val Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Thr Trp Asn Ser Gly Ala Leu Ser Ser Asp Val
180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Gly Leu Tyr Thr Leu Thr Ser
195 200 205

Ser Val Thr Ser Ser Thr Trp Pro Ser Gln Thr Val Thr Cys Asn Val
210 215 220

Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys Lys Val Glu Arg Arg
225 230 235 240

Asn Gly Gly Ile Gly His Lys Cys Pro Thr Cys Pro Thr Cys His Lys
245 250 255

Cys Pro Val Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro
260 265 270

Pro Lys Pro Lys Asp Ile Leu Leu Ile Ser Gln Asn Ala Lys Val Thr
275 280 285

Cys Val Val Val Asp Val Ser Glu Glu Glu Pro Asp Val Gln Phe Ser
290 295 300

Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln Pro Arg
305 310 315 320

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Glu Glu Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Ala Leu Pro Ile
325 330 335

Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn
340 345 350

Asn Lys Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile Ser Lys Pro Lys
355 360 365

Gly Leu Val Arg Lys Pro Gln Val Tyr Val Met Gly Pro Pro Thr Glu
370 375 380

Gln Leu Thr Glu Gln Thr Val Ser Leu Thr Cys Leu Thr Ser Gly Phe
385 390 395 400

Leu Pro Asn Asp Ile Gly Val Glu Trp Thr Ser Asn Gly His Ile Glu
405 410 415

Lys Asn Tyr Lys Asn Thr Glu Pro Val Met Asp Ser Asp Gly Ser Phe
420 425 430

Phe Met Tyr Ser Lys Leu Asn Val Glu Arg Ser Arg Trp Asp Ser Arg
435 440 445

Ala Pro Phe Val Cys Ser Val Val His Glu Gly Leu His Asn His His
450 455 460

Val Glu Lys Ser Ile Ser Arg Pro Pro Gly Lys
465 470 475

<210> 3
<211> 123
<212> PRT
<213> Rattus norvegicus

<400> 3

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

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

Tyr Ile Ser Trp Ile Lys Gln Thr Thr Gly Gln Gly Leu Lys Tyr Ile
35 40 45

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

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

FP1801 Sequence Listing.TXT

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

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

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

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<213> Rattus norvegicus

<400> 4

Gly Tyr Thr Phe Thr Ser Tyr Tyr Ile Ser
1 5 10

<210> 5
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<212> PRT
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<400> 5

Phe Ile Asn Pro Gly Ser Gly His Thr Asn
1 5 10

<210> 6
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<212> PRT
<213> Rattus norvegicus

<400> 6

Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys Phe Asp Tyr
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<210> 7
<211> 233
<212> PRT
<213> Rattus norvegicus

<220>
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<222> (1)..(20)

<400> 7

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1 5 10 15

Gly Ser Thr Gly Asp Thr Val Leu Thr Gln Ser Pro Ala Leu Ala Val
20 25 30

Ser Leu Gly Gln Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val
35 40 45

FP1801 Sequence Listing.TXT

Ser Thr Tyr Ile His Trp Tyr Gln Gln Arg Ser Gly Gln Gln Pro Lys
50 55 60

Leu Leu Ile Tyr Ser Ala Ser Asn Leu Glu Ser Gly Val Pro Ser Arg
65 70 75 80

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Pro
85 90 95

Val Glu Pro Asp Asp Ile Ala Asn Tyr Tyr Cys Gln Gln Ile Asn Glu
100 105 110

Leu Pro Tyr Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala
115 120 125

Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Thr Glu Gln Leu
130 135 140

Ala Thr Gly Gly Ala Ser Val Val Cys Leu Met Asn Asn Phe Tyr Pro
145 150 155 160

Arg Asp Ile Ser Val Lys Trp Lys Ile Asp Gly Thr Glu Arg Arg Asp
165 170 175

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

Ser Met Ser Ser Thr Leu Ser Leu Thr Lys Ala Asp Tyr Glu Ser His
195 200 205

Asn Leu Tyr Thr Cys Glu Val Val His Lys Thr Ser Ser Ser Pro Val
210 215 220

Val Lys Ser Phe Asn Arg Asn Glu Cys
225 230

<210> 8
<211> 108
<212> PRT
<213> Rattus norvegicus

<400> 8

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

Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser Thr Tyr Ile
20 25 30

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

FP1801 Sequence Listing.TXT

Ser Ala Ser Asn Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
50 55 60

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

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

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

<210> 9
<211> 11
<212> PRT
<213> Rattus norvegicus

<400> 9

Arg Ala Ser Lys Ser Val Ser Thr Tyr Ile His
1 5 10

<210> 10
<211> 7
<212> PRT
<213> Rattus norvegicus

<400> 10

Ser Ala Ser Asn Leu Glu Ser
1 5

<210> 11
<211> 9
<212> PRT
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<400> 11

Gln Gln Ile Asn Glu Leu Pro Tyr Thr
1 5

<210> 12
<211> 475
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<213> Rattus norvegicus

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<222> (1)..(19)

<400> 12

Met Glu Trp Asn Trp Val Phe Leu Phe Leu Leu Ser Val Thr Ala Val
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Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys
20 25 30

FP1801 Sequence Listing.TXT

Pro Gly Ser Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe
35 40 45

Thr Ser Tyr Tyr Ile Thr Trp Ile Lys Gln Thr Thr Gly Gln Gly Leu
50 55 60

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

Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
85 90 95

Thr Ala Phe Met Gln Leu Ser Ser Leu Thr Pro Asp Asp Ser Ala Val
100 105 110

Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Ser Lys
115 120 125

Phe Asp Tyr Trp Gly Gln Gly Val Met Val Thr Val Ser Ser Ala Gln
130 135 140

Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala Pro Gly Cys Gly Asp Thr
145 150 155 160

Thr Ser Ser Thr Val Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Thr Trp Asn Ser Gly Ala Leu Ser Ser Asp Val
180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Gly Leu Tyr Thr Leu Thr Ser
195 200 205

Ser Val Thr Ser Ser Thr Trp Pro Ser Gln Thr Val Thr Cys Asn Val
210 215 220

Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys Lys Val Glu Arg Arg
225 230 235 240

Asn Gly Gly Ile Gly His Lys Cys Pro Thr Cys Pro Thr Cys His Lys
245 250 255

Cys Pro Val Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro
260 265 270

Pro Lys Pro Lys Asp Ile Leu Leu Ile Ser Gln Asn Ala Lys Val Thr
275 280 285

Cys Val Val Val Asp Val Ser Glu Glu Glu Pro Asp Val Gln Phe Ser
290 295 300

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Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln Pro Arg
305 310 315 320

Glu Glu Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Ala Leu Pro Ile
325 330 335

Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn
340 345 350

Asn Lys Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile Ser Lys Pro Lys
355 360 365

Gly Leu Val Arg Lys Pro Gln Val Tyr Val Met Gly Pro Pro Thr Glu
370 375 380

Gln Leu Thr Glu Gln Thr Val Ser Leu Thr Cys Leu Thr Ser Gly Phe
385 390 395 400

Leu Pro Asn Asp Ile Gly Val Glu Trp Thr Ser Asn Gly His Ile Glu
405 410 415

Lys Asn Tyr Lys Asn Thr Glu Pro Val Met Asp Ser Asp Gly Ser Phe
420 425 430

Phe Met Tyr Ser Lys Leu Asn Val Glu Arg Ser Arg Trp Asp Ser Arg
435 440 445

Ala Pro Phe Val Cys Ser Val Val His Glu Gly Leu His Asn His His
450 455 460

Val Glu Lys Ser Ile Ser Arg Pro Pro Gly Lys
465 470 475

<210> 13
<211> 123
<212> PRT
<213> Rattus norvegicus

<400> 13

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

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

Tyr Ile Thr Trp Ile Lys Gln Thr Thr Gly Gln Gly Leu Lys Tyr Ile
35 40 45

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

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

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

Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Ser Lys Phe Asp Tyr
100 105 110

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

<210> 14
<211> 10
<212> PRT
<213> Rattus norvegicus

<400> 14

Gly Tyr Thr Phe Thr Ser Tyr Tyr Ile Thr
1 5 10

<210> 15
<211> 10
<212> PRT
<213> Rattus norvegicus

<400> 15

Tyr Ile Asn Pro Gly Ser Gly His Thr Asn
1 5 10

<210> 16
<211> 14
<212> PRT
<213> Rattus norvegicus

<400> 16

Gly Ala Gly Gly Phe Leu Arg Ile Ile Ser Lys Phe Asp Tyr
1 5 10

<210> 17
<211> 233
<212> PRT
<213> Rattus norvegicus

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<222> (1)..(20)

<400> 17

Met Glu Thr Asp Arg Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Thr Val Leu Thr Gln Ser Pro Ala Leu Ala Val
20 25 30

FP1801 Sequence Listing.TXT

Ser Leu Gly Gln Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val
35 40 45

Ser Thr Tyr Met His Trp Tyr Gln Gln Arg Ser Gly Gln Gln Pro Lys
50 55 60

Leu Leu Ile Tyr Ser Ala Ser Asn Leu Glu Ser Gly Val Pro Ser Arg
65 70 75 80

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Pro
85 90 95

Val Lys Ala Asp Asp Ile Thr Asn Tyr Tyr Cys Gln Gln Ser Asn Glu
100 105 110

Leu Pro Tyr Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala
115 120 125

Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Thr Glu Gln Leu
130 135 140

Ala Thr Gly Gly Ala Ser Val Val Cys Leu Met Asn Asn Phe Tyr Pro
145 150 155 160

Arg Asp Ile Ser Val Lys Trp Lys Ile Asp Gly Thr Glu Arg Arg Asp
165 170 175

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

Ser Met Ser Ser Thr Leu Ser Leu Thr Lys Ala Asp Tyr Glu Ser His
195 200 205

Asn Leu Tyr Thr Cys Glu Val Val His Lys Thr Ser Ser Ser Pro Val
210 215 220

Val Lys Ser Phe Asn Arg Asn Glu Cys
225 230

<210> 18
<211> 108
<212> PRT
<213> Rattus norvegicus

<400> 18

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

Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser Thr Tyr Met
20 25 30

FP1801 Sequence Listing.TXT

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

Ser Ala Ser Asn Leu Glu Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
 50 55 60

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

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

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

<210> 19
 <211> 11
 <212> PRT
 <213> Rattus norvegicus

<400> 19

Arg Ala Ser Lys Ser Val Ser Thr Tyr Met His
 1 5 10

<210> 20
 <211> 7
 <212> PRT
 <213> Rattus norvegicus

<400> 20

Ser Ala Ser Asn Leu Glu Ser
 1 5

<210> 21
 <211> 9
 <212> PRT
 <213> Rattus norvegicus

<400> 21

Gln Gln Ser Asn Glu Leu Pro Tyr Thr
 1 5

<210> 22
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 <212> PRT
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<220>
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 <222> (1)..(19)

<400> 22

Met Glu Trp Asn Trp Val Phe Leu Phe Leu Leu Ser Val Thr Ala Glu
 1 5 10 15

FP1801 Sequence Listing.TXT

Val His Ser Gln Val Gln Leu Arg Gln Ser Gly Ala Glu Leu Ala Lys
 20 25 30
 Pro Gly Ser Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 35 40 45
 Thr Ser Tyr Tyr Ile Ile Trp Met Lys Gln Thr Ala Gly Gln Gly Leu
 50 55 60
 Gln Tyr Val Gly Tyr Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
 65 70 75 80
 Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
 85 90 95
 Thr Ala Phe Met Gln Leu Ser Ser Leu Thr Pro Asp Asp Ser Ala Val
 100 105 110
 Tyr Tyr Cys Ala Arg Gly Thr Gly Gly Phe Leu Arg Ile Ile Ser Lys
 115 120 125
 Phe Asp Tyr Trp Gly Gln Gly Val Met Val Thr Val Ser Ser Ala Gln
 130 135 140
 Thr Thr Ala Pro Ser Val Tyr Pro Leu Ala Pro Gly Cys Gly Asp Thr
 145 150 155 160
 Thr Ser Ser Thr Val Thr Leu Gly Cys Leu Val Lys Gly Tyr Phe Pro
 165 170 175
 Glu Pro Val Thr Val Thr Trp Asn Ser Gly Ala Leu Ser Ser Asp Val
 180 185 190
 His Thr Phe Pro Ala Val Leu Gln Ser Gly Leu Tyr Thr Leu Thr Ser
 195 200 205
 Ser Val Thr Ser Ser Thr Trp Pro Ser Gln Thr Val Thr Cys Asn Val
 210 215 220
 Ala His Pro Ala Ser Ser Thr Lys Val Asp Lys Lys Val Glu Arg Arg
 225 230 235 240
 Asn Gly Gly Ile Gly His Lys Cys Pro Thr Cys Pro Thr Cys His Lys
 245 250 255
 Cys Pro Val Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Ile Phe Pro
 260 265 270
 Pro Lys Pro Lys Asp Ile Leu Leu Ile Ser Gln Asn Ala Lys Val Thr
 275 280 285

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Cys Val Val Val Asp Val Ser Glu Glu Glu Pro Asp Val Gln Phe Ser
290 295 300

Trp Phe Val Asn Asn Val Glu Val His Thr Ala Gln Thr Gln Pro Arg
305 310 315 320

Glu Glu Gln Tyr Asn Ser Thr Phe Arg Val Val Ser Ala Leu Pro Ile
325 330 335

Gln His Gln Asp Trp Met Ser Gly Lys Glu Phe Lys Cys Lys Val Asn
340 345 350

Asn Lys Ala Leu Pro Ser Pro Ile Glu Lys Thr Ile Ser Lys Pro Lys
355 360 365

Gly Leu Val Arg Lys Pro Gln Val Tyr Val Met Gly Pro Pro Thr Glu
370 375 380

Gln Leu Thr Glu Gln Thr Val Ser Leu Thr Cys Leu Thr Ser Gly Phe
385 390 395 400

Leu Pro Asn Asp Ile Gly Val Glu Trp Thr Ser Asn Gly His Ile Glu
405 410 415

Lys Asn Tyr Lys Asn Thr Glu Pro Val Met Asp Ser Asp Gly Ser Phe
420 425 430

Phe Met Tyr Ser Lys Leu Asn Val Glu Arg Ser Arg Trp Asp Ser Arg
435 440 445

Ala Pro Phe Val Cys Ser Val Val His Glu Gly Leu His Asn His His
450 455 460

Val Glu Lys Ser Ile Ser Arg Pro Pro Gly Lys
465 470 475

<210> 23
<211> 123
<212> PRT
<213> Rattus norvegicus

<400> 23

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

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

Tyr Ile Ile Trp Met Lys Gln Thr Ala Gly Gln Gly Leu Gln Tyr Val
35 40 45

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

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

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

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

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

<210> 24
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<212> PRT
<213> Rattus norvegicus

<400> 24

Gly Tyr Thr Phe Thr Ser Tyr Tyr Ile Ile
1 5 10

<210> 25
<211> 10
<212> PRT
<213> Rattus norvegicus

<400> 25

Tyr Ile Asn Pro Gly Ser Gly His Thr Asn
1 5 10

<210> 26
<211> 14
<212> PRT
<213> Rattus norvegicus

<400> 26

Gly Thr Gly Gly Phe Leu Arg Ile Ile Ser Lys Phe Asp Tyr
1 5 10

<210> 27
<211> 233
<212> PRT
<213> Rattus norvegicus

<220>
<221> SIGNAL
<222> (1)..(20)

<400> 27

Met Glu Thr Asp Arg Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

FP1801 Sequence Listing.TXT

Gly Ser Thr Gly Asp Thr Val Leu Thr Gln Ser Pro Ala Leu Ala Val
20 25 30

Ser Leu Gly Gln Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val
35 40 45

Ser Thr Tyr Met His Trp Tyr Gln Gln Arg Ser Gly Gln Gln Pro Lys
50 55 60

Leu Leu Ile Tyr Ser Ala Ser Thr Leu Glu Ser Gly Val Pro Ser Arg
65 70 75 80

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Pro
85 90 95

Val Glu Ala Asp Asp Ile Ala Asn Tyr Tyr Cys Gln Gln Ser Asn Glu
100 105 110

Leu Pro Tyr Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala
115 120 125

Asp Ala Ala Pro Thr Val Ser Ile Phe Pro Pro Ser Thr Glu Gln Leu
130 135 140

Ala Thr Gly Gly Ala Ser Val Val Cys Leu Met Asn Asn Phe Tyr Pro
145 150 155 160

Arg Asp Ile Ser Val Lys Trp Lys Ile Asp Gly Thr Glu Arg Arg Asp
165 170 175

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

Ser Met Ser Ser Thr Leu Ser Leu Thr Lys Ala Asp Tyr Glu Ser His
195 200 205

Asn Leu Tyr Thr Cys Glu Val Val His Lys Thr Ser Ser Ser Pro Val
210 215 220

Val Lys Ser Phe Asn Arg Asn Glu Cys
225 230

<210> 28
<211> 108
<212> PRT
<213> Rattus norvegicus

<400> 28

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

FP1801 Sequence Listing.TXT

Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val Ser Thr Tyr Met
20 25 30

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

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

Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Pro Val Glu Ala Asp
65 70 75 80

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

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

<210> 29
<211> 11
<212> PRT
<213> Rattus norvegicus

<400> 29

Arg Ala Ser Lys Ser Val Ser Thr Tyr Met His
1 5 10

<210> 30
<211> 7
<212> PRT
<213> Rattus norvegicus

<400> 30

Ser Ala Ser Thr Leu Glu Ser
1 5

<210> 31
<211> 9
<212> PRT
<213> Rattus norvegicus

<400> 31

Gln Gln Ser Asn Glu Leu Pro Tyr Thr
1 5

<210> 32
<211> 1425
<212> DNA
<213> Rattus norvegicus

<220>
<221> sig_peptide
<222> (1)..(57)

FP1801 Sequence Listing.TXT

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tgcaaggctt ctggctacac cttcaccagc tactatataa gctggataaa gcagacgact      180
ggacagggcc ttaagtatat tggattttatt aatccgggaa gtggacatac taactacaat      240
gagaagttca agggcaaggc cacattgact gtagacaaat cctctagcac agccttcatg      300
caactcagca gcctgacacc tgacgactct gcgatctatt actgtgcaag aggggctggg      360
ggttttctac ggattattac taagtttgat tactggggcc aaggagtcac ggtcacagtc      420
tcctcagccc aaacaacagc cccatctgtc tatccactgg ctcttgatg tggtgataca      480
accagctcca cggtgactct gggatgcctg gtcaagggct atttcctga gccagtcacc      540
gtgacctgga actctggagc cctgtccagc gatgtgcaca cctttccagc tgtcctgcag      600
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aatggcggca ttggacacaa atgccctaca tgccctacat gtcacaaatg cccagttcct      780
gaactcttgg gtggaccatc tgtcttcac tttccgcaa agcccaagga catcctcttg      840
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gtccagttca gctggtttgt gaacaacgta gaagtacaca cagctcagac acaaccccg      960
gaggagcagt acaacagcac cttcagagtg gtcagtgcc tccccatcca gcaccaggac     1020
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gagaaaacca tctcaaaacc caaagggtta gtcagaaaac cacaggtata cgtcatgggt     1140
ccaccgacag agcagttgac tgagcaaacg gtcagtttga cctgcttgac ctgaggttc     1200
ctccctaacg acatcggtgt ggagtggacc agcaacgggc atatagaaaa gaactacaag     1260
aacaccgagc cagtgatgga ctctgacggt tctttcttca tgtacagcaa gctcaatgtg     1320
gaaaggagca ggtgggtag cagagcggc ttcgtctgct ccgtggtcca cgagggtctg     1380
cacaatcacc acgtggagaa gagcatctcc cggcctccgg gtaaa                       1425

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<210> 33
<211> 369
<212> DNA
<213> Rattus norvegicus

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<400> 33
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actggacagg gccttaagta tattggattt attaatccgg gaagtggaca tactaactac      180
aatgagaagt tcaagggcaa ggccacattg actgtagaca aatcctctag cacagccttc     240
atgcaactca gcagcctgac acctgacgac tctgcatct attactgtgc aagaggggct     300
gggggttttc tacggattat tactaagttt gattactggg gccaaggagt catggtcaca     360

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gtctcctca

<210> 34
 <211> 699
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> sig_peptide
 <222> (1)..(60)

<400> 34
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 tcctgtaggg ccagcaaaag tgtcagtaca tatatacact ggtaccaaca gaggtcggga 180
 cagcaaccca aactcctgat ctatagtgc tccaacctag aatctggagt cccttccagg 240
 ttcagtggga gtgggtctgg gacagacttt accctcacca tagatcctgt ggagcctgat 300
 gacatagcaa actattactg tcagcagatt aatgaacttc cgtacacgtt tggagctggg 360
 accaagctgg aactgaaacg ggctgatgct gcaccaactg tatctatctt cccaccatcc 420
 acggaacagt tagcaactgg aggtgcctca gtcgtgtgcc tcatgaacaa cttctatccc 480
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 agtgttactg atcaggacag caaagacagc acgtacagca tgagcagcac cctctcgttg 600
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 tcctcaccgg tcgtcaagag cttcaacagg aatgagtgt 699

<210> 35
 <211> 324
 <212> DNA
 <213> Rattus norvegicus

<400> 35
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 cagcaaccca aactcctgat ctatagtgc tccaacctag aatctggagt cccttccagg 180
 ttcagtggga gtgggtctgg gacagacttt accctcacca tagatcctgt ggagcctgat 240
 gacatagcaa actattactg tcagcagatt aatgaacttc cgtacacgtt tggagctggg 300
 accaagctgg aactgaaacg ggct 324

<210> 36
 <211> 1425
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> sig_peptide
 <222> (1)..(57)

FP1801 Sequence Listing.TXT

<400> 36
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gagaagttca agggcaaggc cacattgact gtagacaaat cctccagcac agccttcagt 300
caactcagca gcctgacacc tgacgactct gcggtctatt actgtgcaag aggggctggg 360
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<210> 37
<211> 369
<212> DNA
<213> Rattus norvegicus

<400> 37
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gtctcctca

<210> 38
 <211> 699
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> sig_peptide
 <222> (1)..(60)

<400> 38
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 tcttgtaggg ccagcaaaag tgtcagtaca tatatgcact ggtaccaaca gaggtcggga 180
 cagcaaccca aactcctgat ctatagtgc tccaacctag aatctggagt cccttccagg 240
 ttcagtggga gtgggtctgg gacagacttt accctcacca tagatcctgt gaaggctgat 300
 gacataacaa actattactg tcagcagagt aatgaacttc cgtacacgtt tggagctggg 360
 accaagctgg aactgaaacg ggctgatgct gcaccaactg tatctatctt cccaccatcc 420
 acggaacagt tagcaactgg aggtgcctca gtcgtgtgcc tcatgaacaa cttctatccc 480
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 agtggtactg atcaggacag caaagacagc acgtacagca tgagcagcac cctctcgttg 600
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<210> 39
 <211> 324
 <212> DNA
 <213> Rattus norvegicus

<400> 39
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 cagcaaccca aactcctgat ctatagtgc tccaacctag aatctggagt cccttccagg 180
 ttcagtggga gtgggtctgg gacagacttt accctcacca tagatcctgt gaaggctgat 240
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<210> 40
 <211> 1425
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> sig_peptide
 <222> (1)..(57)

FP1801 Sequence Listing.TXT

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<400> 40
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gagaagttca agggcaaggc cacattgact gtagacaaat cctccagcac agccttcagt      300
caactcagca gcctgacacc tgacgactct gcggtctatt actgtgcaag agggactggg      360
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tcctcagccc aaacaacagc cccatctgtc tatccactgg ctcttgatg tggtgataca      480
accagctcca cggtgactct gggatgcctg gtcaagggct atttcctga gccagtcacc      540
gtgacctgga actctggagc cctgtccagc gatgtgcaca cctttccagc tgtcctgcag      600
tctgggctct acactctcac cagctcagtg acctccagca cctggcccag ccagaccgtc      660
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aatggcggca ttggacacaa atgccctaca tgccctacat gtcacaaatg cccagttcct      780
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gtccagttca gctggtttgt gaacaacgta gaagtacaca cagctcagac acaaccccgt      960
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gagaaaacca tctcaaaacc caaagggtcta gtcagaaaac cacaggtata cgtcatgggt     1140
ccaccgacag agcagttgac tgagcaaacg gtcagtttga cctgcttgac ctcaggcttc     1200
ctccctaacg acatcggtgt ggagtggacc agcaacgggc atatagaaaa gaactacaag     1260
aacaccgagc cagtgatgga ctctgacggt tctttcttca tgtacagcaa gctcaatgtg     1320
gaaaggagca ggtgggatag cagagcgccc ttcgtctgct ccgtgggtcca cgagggtctg     1380
cacaatcacc acgtggagaa gagcatctcc cggcctccgg gtaaa                       1425

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<210> 41
<211> 369
<212> DNA
<213> Rattus norvegicus

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<400> 41
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gctggccagg gccttcagta tgttgatat attaatccgg gaagtggaca tactaactac      180
aatgagaagt tcaagggcaa ggccacattg actgtagaca aatcctccag cacagccttc      240
atgcaactca gcagcctgac acctgacgac tctgcggtct attactgtgc aagagggact      300
gggggttttc tacggattat tagtaagttt gattactggg gccaaggagt catggtcaca      360

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gtctcctca

<210> 42
 <211> 699
 <212> DNA
 <213> Rattus norvegicus

<220>
 <221> sig_peptide
 <222> (1)..(60)

<400> 42
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 tcttgtaggg ccagcaaaag tgtcagtaca tatatgcact ggtaccaaca gaggtcggga 180
 cagcaaccca aactcctgat ctatagtgtc tccaccctag aatctggagt cccttccagg 240
 ttcaagtggga gtgggtctgg gacagacttt accctcacca tagatcctgt ggaggctgat 300
 gacatagcaa actattactg tcagcagagt aatgaacttc cgtacacgtt tggagctggg 360
 accaagctgg aactgaaacg ggctgatgtc gcaccaactg tatctatctt cccaccatcc 420
 acggaacagt tagcaactgg aggtgcctca gtcgtgtgcc tcatgaacaa cttctatccc 480
 agagacatca gtgtcaagtg gaagattgat ggcactgaac gacgagatgg tgtcctggac 540
 agtggtactg atcaggacag caaagacagc acgtacagca tgagcagcac cctctcgttg 600
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 tcctcaccgg tcgtcaagag cttcaacagg aatgagtgt 699

<210> 43
 <211> 324
 <212> DNA
 <213> Rattus norvegicus

<400> 43
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 cagcaaccca aactcctgat ctatagtgtc tccaccctag aatctggagt cccttccagg 180
 ttcaagtggga gtgggtctgg gacagacttt accctcacca tagatcctgt ggaggctgat 240
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 accaagctgg aactgaaacg ggct 324

<210> 44
 <211> 472
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequence of 04-046Ch heavy chain

<220>

FP1801 Sequence Listing.TXT

<221> SIGNAL
<222> (1)..(19)

<400> 44

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20      25      30
Pro  Gly  Ser  Ser  Val  Lys  Ile  Ser  Cys  Lys  Ala  Ser  Gly  Tyr  Thr  Phe
35      40      45
Thr  Ser  Tyr  Tyr  Ile  Ser  Trp  Ile  Lys  Gln  Thr  Thr  Gly  Gln  Gly  Leu
50      55      60
Lys  Tyr  Ile  Gly  Phe  Ile  Asn  Pro  Gly  Ser  Gly  His  Thr  Asn  Tyr  Asn
65      70      75      80
Glu  Lys  Phe  Lys  Gly  Lys  Ala  Thr  Leu  Thr  Val  Asp  Lys  Ser  Ser  Ser
85      90      95
Thr  Ala  Phe  Met  Gln  Leu  Ser  Ser  Leu  Thr  Pro  Asp  Asp  Ser  Ala  Ile
100     105     110
Tyr  Tyr  Cys  Ala  Arg  Gly  Ala  Gly  Gly  Phe  Leu  Arg  Ile  Ile  Thr  Lys
115     120     125
Phe  Asp  Tyr  Trp  Gly  Gln  Gly  Val  Met  Val  Thr  Val  Ser  Ser  Ala  Ser
130     135     140
Thr  Lys  Gly  Pro  Ser  Val  Phe  Pro  Leu  Ala  Pro  Ser  Ser  Lys  Ser  Thr
145     150     155     160
Ser  Gly  Gly  Thr  Ala  Ala  Leu  Gly  Cys  Leu  Val  Lys  Asp  Tyr  Phe  Pro
165     170     175
Glu  Pro  Val  Thr  Val  Ser  Trp  Asn  Ser  Gly  Ala  Leu  Thr  Ser  Gly  Val
180     185     190
His  Thr  Phe  Pro  Ala  Val  Leu  Gln  Ser  Ser  Gly  Leu  Tyr  Ser  Leu  Ser
195     200     205
Ser  Val  Val  Thr  Val  Pro  Ser  Ser  Ser  Leu  Gly  Thr  Gln  Thr  Tyr  Ile
210     215     220
Cys  Asn  Val  Asn  His  Lys  Pro  Ser  Asn  Thr  Lys  Val  Asp  Lys  Arg  Val
225     230     235     240
Glu  Pro  Lys  Ser  Cys  Asp  Lys  Thr  His  Thr  Cys  Pro  Pro  Cys  Pro  Ala
245     250     255

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FP1801 Sequence Listing.TXT

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
260 265 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
275 280 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
290 295 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305 310 315 320

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
325 330 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
340 345 350

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
355 360 365

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
370 375 380

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
420 425 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 45
<211> 233
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of 04-046Ch light chain

<220>
<221> SIGNAL

FP1801 Sequence Listing.TXT

<222> (1)..(20)

<400> 45

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20 25 30

Ser Leu Gly Gln Arg Val Thr Ile Ser Cys Arg Ala Ser Lys Ser Val
35 40 45

Ser Thr Tyr Ile His Trp Tyr Gln Gln Arg Ser Gly Gln Gln Pro Lys
50 55 60

Leu Leu Ile Tyr Ser Ala Ser Asn Leu Glu Ser Gly Val Pro Ser Arg
65 70 75 80

Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asp Pro
85 90 95

Val Glu Pro Asp Asp Ile Ala Asn Tyr Tyr Cys Gln Gln Ile Asn Glu
100 105 110

Leu Pro Tyr Thr Phe Gly Ala Gly Thr Lys Leu Glu Leu Lys Arg Ala
115 120 125

Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu
130 135 140

Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro
145 150 155 160

Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly
165 170 175

Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr
180 185 190

Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His
195 200 205

Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val
210 215 220

Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230

<210> 46

<211> 1416

<212> DNA

<213> Artificial sequence

FP1801 Sequence Listing.TXT

<220>
<223> nucleotide sequence of 04-046Ch heavy chain

<220>
<221> sig_peptide
<222> (1)..(57)

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tgcaaggcca gcggctacac cttcaccagc tactacatca gctggatcaa gcagaccacc      180
ggccaggggc tgaagtacat cggtttcatc aaccccgga gcggccacac caactacaac      240
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cagctgtcca gcctgacccc cgacgacagc gccatctact actgtgctag aggcgctggc      360
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gacatcgccg tggagtggga gagcaatggc cagcccgaga acaactacaa gaccaccctt     1260
cccgtgctgg actccgacgg ctcttcttct ctctacagca agctcaccgt ggacaagagc     1320
aggtggcagc agggcaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac     1380
tacaccaga agagcctctc cctgtctccc ggcaaa                                1416

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<210> 47
<211> 699
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of 04-046Ch light chain

FP1801 Sequence Listing.TXT

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<220>
<221> sig_peptide
<222> (1)..(60)

<400> 47
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agctgcagag ccagcaagag cgtgtccacc tacatccact ggtatcagca gcggagcggc      180
cagcagccca agctgctgat ctacagcgcc agcaacctgg aaagcggcgt gcccagcaga      240
ttttccggca gcggctcttg caccgacttc accctgacca tcgaccccgt ggaacccgac      300
gatatcgcca actactactg ccagcagatc aacgagctgc cctacacctt cggagccggc      360
accaagctgg aactgaagag agccgtggcc gccccctccg tgttcatctt cccccctcc      420
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agcgtgaccg agcaggacag caaggacagc acctacagcc tgagcagcac cctgaccctg      600
agcaaagccg actacgagaa gcacaaggtg tacgcctgcg aggtgacca ccagggcctg      660
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<210> 48
<211> 472
<212> PRT
<213> Artificial Sequence

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<220>
<223> amino acid sequence of h046-H4b

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<220>
<221> SIGNAL
<222> (1)..(19)

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```

<400> 48

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```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
1           5           10          15

```

```

Val Leu Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20          25          30

```

```

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
35          40          45

```

```

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

```

```

Lys Tyr Met Gly Phe Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
65          70          75          80

```

```

Glu Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Ser Ser
85          90          95

```

FP1801 Sequence Listing.TXT

Thr Ala Thr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
100 105 110

Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys
115 120 125

Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
130 135 140

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
145 150 155 160

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
195 200 205

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
210 215 220

Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val
225 230 235 240

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
245 250 255

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
260 265 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
275 280 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
290 295 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305 310 315 320

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
325 330 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
340 345 350

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
355 360 365

FP1801 Sequence Listing.TXT

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
370 375 380

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
420 425 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 49
<211> 1416
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-H4b (1)

<220>
<221> sig_peptide
<222> (1)..(57)

<400> 49	
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gtgcagctgg tgcagtctgg cgccgaagtg aagaaaccag gcgccagcgt gaaggtgtcc	120
tgcaaggcca gcggttacac ctttaccagc tactacatca gctggatccg gcaggcccct	180
ggacagggcc tgaagtacat gggcttcac aaccctggca gcggccacac caactacaac	240
gagaagttca agggcagagt gaccatcacc gccgacaaga gcagcagcac cgccaccatg	300
gaactgagca gcctgagaag cgaggacacc gccgtgtact actgcgctag aggcgctggc	360
ggcttcctgc ggatcatcac caagttcgac tactggggcc agggcaccct cgtgaccgtc	420
agctcagcct ccaccaaggg cccaagcgtc ttccccctgg caccctctc caagagcacc	480
tctggcgcca cagccgccct gggctgcctg gtcaaggact acttccccga acccgtgacc	540
gtgagctgga actcaggcgc cctgaccagc ggcgtgcaca cttccccgc tgtcctgcag	600
tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cctccagcag cttgggcacc	660
cagacctaca tctgcaacgt gaatcacaag cccagcaaca ccaaggtgga caagagagtt	720
gagcccaaat cttgtgacaa aactcacaca tgcccaccct gcccagcacc tgaactcctg	780

FP1801 Sequence Listing.TXT

```

ggggggaccct cagtcttcct cttcccccca aaaccaagg acaccctcat gatctcccgg      840
acccctgagg tcacatgcgt ggtggtggac gtgagccacg aagaccctga ggtcaagttc      900
aactggtacg tggacggcgt ggaggtgcat aatgccaaga caaagccccg ggaggagcag      960
tacaacagca cgtaccgggt ggtcagcgtc ctcaccgtcc tgcaccagga ctggctgaat     1020
ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc cagcccccat cgagaaaacc     1080
atctccaaag ccaaaggcca gccccgggaa ccacaggtgt acaccctgcc cccatcccgg     1140
gaggagatga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc     1200
gacatcgccg tggagtggga gagcaatggc cagcccgaga acaactacaa gaccaccctt     1260
cccgtgctgg actccgacgg ctctttcttc ctctacagca agctcaccgt ggacaagagc     1320
aggtggcagc agggcaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac     1380
tacaccaga agagcctctc cctgtctccc ggcaaa                                1416

```

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<210> 50
<211> 472
<212> PRT
<213> Artificial Sequence

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<220>
<223> amino acid sequence of h046-H4e

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<220>
<221> SIGNAL
<222> (1)..(19)

```

```

<400> 50

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```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
1           5           10          15

```

```

Val Leu Ser Glu Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
          20          25          30

```

```

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
          35          40          45

```

```

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

```

```

Lys Tyr Met Gly Phe Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
65          70          75          80

```

```

Glu Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Ser Ser
          85          90          95

```

```

Thr Ala Thr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
          100         105         110

```

```

Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys

```

FP1801 Sequence Listing.TXT

115

120

125

Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
130 135 140

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
145 150 155 160

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
195 200 205

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
210 215 220

Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val
225 230 235 240

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
245 250 255

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
260 265 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
275 280 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
290 295 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305 310 315 320

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
325 330 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
340 345 350

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
355 360 365

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
370 375 380

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser

FP1801 Sequence Listing.TXT

385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
420 425 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 51
<211> 1416
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-H4e

<220>
<221> sig_peptide
<222> (1)..(57)

<400> 51
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gtgcagctgg tgcagtctgg cgccgaagtg aagaaacctg ggcctccgt gaagggtgcc 120
tgcaaggcct ccggctacac ctttaccagc tactacatct cctggatccg gcaggcccct 180
ggacagggcc tgaagtacat gggcttcac aaccccggt ccggccacac caactacaac 240
gagaagttca agggcagagt gaccattacc gccgacaagt cctcctccac cgctaccatg 300
gaactgtcct ccctgcggag cgaggacacc gccgtgtact actgtgctag aggcgctggc 360
ggcttcctgc ggatcatcac caagttcgac tactggggcc agggcaccct cgtgaccgtg 420
tcctctgctt ctaccaaggg cccctccgtg ttccctctgg ccccttcag caagtctacc 480
tctggcggca cagccgctct gggctgcctc gtgaaggact acttccccga gcccgtagaca 540
gtgtcttgga actctggcgc cctgacctcc ggcgtgcaca catttccagc tgtgctgcag 600
tcctccggcc tgtactccct gtcctccgtc gtgactgtgc cctccagctc tctgggcacc 660
cagacctaca tctgcaacgt gaaccacaag cctccaaca ccaagggtga caagcgggtg 720
gaaccaagt cctgcgacaa gaccacacc tgtccccctt gtcctgcccc tgaactgctg 780
ggcggacca gcgtgttctt gttcccccca aagcccaagg acaccctgat gatctcccg 840
acccccgaag tgacctgcgt ggtggtggat gtgtcccacg aggacctga agtgaagttc 900
aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcctag agaggaacag 960

FP1801 Sequence Listing.TXT

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tacaactcca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ttggctgaac 1020
ggcaaagagt acaagtgcaa ggtgtccaac aaggctctgc ctgcccccat cgaaaagacc 1080
atctccaagg ccaagggcca gccccgggaa cccaggtgt acacactgcc ccctagccgg 1140
gaagagatga ccaagaacca ggtgtccctg acctgtctcg tgaaaggctt ctaccctcc 1200
gatatcgccg tggaatggga gtccaacggc cagcctgaga acaactacaa gaccaccccc 1260
cctgtgctgg actccgacgg ctcttcttc ctgtacagca agctgacagt ggacaagtcc 1320
cgggtggcagc agggcaacgt gttctcctgc tccgtgatgc acgaggccct gcacaaccac 1380
tacaccaga agtccctgtc cctgagcccc ggcaaa 1416
```

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<210> 52
<211> 472
<212> PRT
<213> Artificial Sequence
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<220>
<223> amino acid sequence of h046-H5b
```

```
<400> 52
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```
Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
1 5 10 15
```

```
Val Leu Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
20 25 30
```

```
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
35 40 45
```

```
Thr Ser Tyr Tyr Ile Ser Trp Ile Arg Gln Ala Pro Gly Gln Gly Leu
50 55 60
```

```
Lys Tyr Met Gly Phe Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
65 70 75 80
```

```
Glu Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Ser Ser
85 90 95
```

```
Thr Ala Asn Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
100 105 110
```

```
Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys
115 120 125
```

```
Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser
130 135 140
```

```
Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
145 150 155 160
```

FP1801 Sequence Listing.TXT

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
195 200 205

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
210 215 220

Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val
225 230 235 240

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
245 250 255

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
260 265 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
275 280 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
290 295 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305 310 315 320

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
325 330 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
340 345 350

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
355 360 365

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
370 375 380

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
420 425 430

FP1801 Sequence Listing.TXT

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

<210> 53
<211> 1416
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-H5b (1)

<220>
<221> sig_peptide
<222> (1)..(57)

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<400> 53
atgaaacacc tgtggttctt cctcctgctg gtggcagctc ccagatgggt gctgagccag      60
gtgcagctgg tgcagtctgg cgccgaagtg aagaaaccag gcgccagcgt gaagggtgcc      120
tgcaaggcca gcggttacac ctttaccagc tactacatca gctggatccg gcaggcccct      180
ggacagggcc tgaagtacat gggcttcac aaccctggca gcggccacac caactacaac      240
gagaagttca agggcagagt gaccatcacc gccgacaaga gcagcagcac cgccaacatg      300
gaactgagca gcctgcggag cgaggacacc gccgtgtact attgtgctag aggcgctggc      360
ggcttcctgc ggatcatcac caagttcgac tactggggcc agggcaccct cgtgaccgtc      420
agctcagcct ccaccaaggg cccaagcgtc ttccccctgg caccctcttc caagagcacc      480
tctggcggca cagccgccct gggctgcctg gtcaaggact acttccccga acccgtgacc      540
gtgagctgga actcaggcgc cctgaccagc ggcgtgcaca ctttccccgc tgtcctgcag      600
tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cctccagcag cttgggcacc      660
cagacctaca tctgcaacgt gaatcacaag cccagcaaca ccaaggtgga caagagagtt      720
gagcccaa at cttgtgacaa aactcacaca tgcccaccct gcccagcacc tgaactcctg      780
ggggggaccct cagtcttcct cttcccccca aaaccaagg acaccctcat gatctcccgg      840
accctgagg tcacatgcgt ggtggtggac gtgagccacg aagaccctga ggtcaagttc      900
aactggtacg tggacggcgt ggaggtgcat aatgccaaga caaagccccg ggaggagcag      960
tacaacagca cgtaccgggt ggtcagcgtc ctcaccgtcc tgcaccagga ctggctgaat     1020
ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc cagcccccat cgagaaaacc     1080
atctccaaag ccaaaggcca gccccgggaa ccacaggtgt acaccctgcc cccatcccgg     1140
gaggagatga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc     1200
gacatcgccg tggagtggga gagcaatggc cagccccgaga acaactacaa gaccaccctt     1260

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FP1801 Sequence Listing.TXT

cccgctgctgg actccgacgg ctcttctctc ctctacagca agctcaccgt ggacaagagc 1320
 aggtggcagc agggcaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac 1380
 tacacccaga agagcctctc cctgtctccc ggcaaa 1416

<210> 54
 <211> 472
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> amino acid sequece of h046-H8

<400> 54

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
 1 5 10 15

Val Leu Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys
 20 25 30

Pro Gly Ser Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 35 40 45

Thr Ser Tyr Tyr Ile Ser Trp Ile Lys Gln Thr Thr Gly Gln Gly Leu
 50 55 60

Lys Tyr Ile Gly Phe Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
 65 70 75 80

Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
 85 90 95

Thr Ala Asn Met Gln Leu Ser Ser Leu Thr Pro Asp Asp Ser Ala Ile
 100 105 110

Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys
 115 120 125

Phe Asp Tyr Trp Gly Gln Gly Val Met Val Thr Val Ser Ser Ala Ser
 130 135 140

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
 145 150 155 160

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
 165 170 175

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
 180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
 195 200 205

FP1801 Sequence Listing.TXT

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
210 215 220

Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val
225 230 235 240

Glu Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala
245 250 255

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro
260 265 270

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val
275 280 285

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val
290 295 300

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln
305 310 315 320

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln
325 330 335

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala
340 345 350

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro
355 360 365

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr
370 375 380

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser
385 390 395 400

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr
405 410 415

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr
420 425 430

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe
435 440 445

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys
450 455 460

Ser Leu Ser Leu Ser Pro Gly Lys
465 470

FP1801 Sequence Listing.TXT

<210> 55
 <211> 1416
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> nucleotide sequence of h046-H8 (1)

<220>
 <221> sig_peptide
 <222> (1)..(57)

<400> 55
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 gtgcagctgc agcagtctgg cgccgaactg gccaaagcctg gcagcagcgt gaagatcagc 120
 tgcaaggcca gcggctacac cttcaccagc tactacatca gctggatcaa gcagaccacc 180
 ggccaggggcc tgaagtacat cggcttcac aaccccgga gcggccacac caactacaac 240
 gagaagttca agggcaaggc caccctgacc gtggacaaga gcagcagcac cgccaacatg 300
 cagctgtcca gcctgacccc cgacgacagc gccatctact actgtgctag aggcgctggc 360
 ggcttcctgc ggatcatcac caagtctgac tactggggcc agggcgtgat ggtcaccgtc 420
 agctcagcct ccaccaaggg cccaagcgtc ttccccctgg caccctcttc caagagcacc 480
 tctggcggca cagccgccct gggctgcctg gtcaaggact acttccccga acccgtgacc 540
 gtgagctgga actcaggcgc cctgaccagc ggcgtgcaca ccttccccgc tgtcctgcag 600
 tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cctccagcag cttgggcacc 660
 cagacctaca tctgcaacgt gaatcacaag cccagcaaca ccaagggtgga caagagagtt 720
 gagcccaa at cttgtgacaa aactcacaca tgcccaccct gccagcacc tgaactcctg 780
 gggggaccct cagtcttctt cttcccccca aaacccaagg acaccctcat gatctcccg 840
 acccctgagg tcacatgcgt ggtggtggac gtgagccacg aagaccctga ggtcaagttc 900
 aactggtacg tggacggcgt ggaggtgcat aatgccaaga caaagccccg ggaggagcag 960
 tacaacagca cgtaccgggt ggtcagcgtc ctcaccgtcc tgcaccagga ctggctgaat 1020
 ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc cagcccccat cgagaaaacc 1080
 atctccaaag ccaaaggcca gccccgggaa ccacaggtgt acaccctgcc cccatcccgg 1140
 gaggagatga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc 1200
 gacatcgccg tggagtggga gagcaatggc cagcccgaga acaactacaa gaccaccctt 1260
 cccgtgctgg actccgacgg ctccttcttc ctctacagca agctcaccgt ggacaagagc 1320
 aggtggcagc agggcaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac 1380
 tacaccaga agagcctctc cctgtctccc ggcaaa 1416

<210> 56
 <211> 472
 <212> PRT
 <213> Artificial Sequence

FP1801 Sequence Listing.TXT

<220>

<223> amino acid sequence of h046-H10

<220>

<221> SIGNAL

<222> (1)..(19)

<400> 56

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
1 5 10 15

Val Leu Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Ala Lys
20 25 30

Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
35 40 45

Thr Ser Tyr Tyr Ile Ser Trp Ile Lys Gln Thr Thr Gly Gln Gly Leu
50 55 60

Lys Tyr Ile Gly Phe Ile Asn Pro Gly Ser Gly His Thr Asn Tyr Asn
65 70 75 80

Glu Lys Phe Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Ser
85 90 95

Thr Ala Asn Met Gln Leu Ser Ser Leu Thr Pro Asp Asp Ser Ala Ile
100 105 110

Tyr Tyr Cys Ala Arg Gly Ala Gly Gly Phe Leu Arg Ile Ile Thr Lys
115 120 125

Phe Asp Tyr Trp Gly Gln Gly Val Met Val Thr Val Ser Ser Ala Ser
130 135 140

Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr
145 150 155 160

Ser Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro
165 170 175

Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val
180 185 190

His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser
195 200 205

Ser Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile
210 215 220

Cys Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val

FP1801 Sequence Listing.TXT															
225				230				235				240			
Glu	Pro	Lys	Ser	Cys 245	Asp	Lys	Thr	His	Thr 250	Cys	Pro	Pro	Cys	Pro 255	Ala
Pro	Glu	Leu	Leu	Gly 260	Gly	Pro	Ser	Val 265	Phe	Leu	Phe	Pro	Pro 270	Lys	Pro
Lys	Asp	Thr 275	Leu	Met	Ile	Ser	Arg 280	Thr	Pro	Glu	Val	Thr 285	Cys	Val	Val
Val	Asp 290	Val	Ser	His	Glu	Asp 295	Pro	Glu	Val	Lys	Phe 300	Asn	Trp	Tyr	Val
Asp 305	Gly	Val	Glu	Val	His 310	Asn	Ala	Lys	Thr	Lys 315	Pro	Arg	Glu	Glu	Gln 320
Tyr	Asn	Ser	Thr	Tyr 325	Arg	Val	Val	Ser	Val 330	Leu	Thr	Val	Leu	His 335	Gln
Asp	Trp	Leu	Asn 340	Gly	Lys	Glu	Tyr	Lys 345	Cys	Lys	Val	Ser	Asn 350	Lys	Ala
Leu	Pro	Ala 355	Pro	Ile	Glu	Lys	Thr 360	Ile	Ser	Lys	Ala	Lys 365	Gly	Gln	Pro
Arg	Glu 370	Pro	Gln	Val	Tyr	Thr 375	Leu	Pro	Pro	Ser	Arg 380	Glu	Glu	Met	Thr
Lys 385	Asn	Gln	Val	Ser	Leu 390	Thr	Cys	Leu	Val	Lys 395	Gly	Phe	Tyr	Pro	Ser 400
Asp	Ile	Ala	Val	Glu 405	Trp	Glu	Ser	Asn	Gly 410	Gln	Pro	Glu	Asn	Asn 415	Tyr
Lys	Thr	Thr	Pro 420	Pro	Val	Leu	Asp	Ser 425	Asp	Gly	Ser	Phe	Phe 430	Leu	Tyr
Ser	Lys	Leu 435	Thr	Val	Asp	Lys	Ser 440	Arg	Trp	Gln	Gln	Gly 445	Asn	Val	Phe
Ser	Cys 450	Ser	Val	Met	His	Glu 455	Ala	Leu	His	Asn	His 460	Tyr	Thr	Gln	Lys
Ser 465	Leu	Ser	Leu	Ser	Pro	Gly	Lys								

FP1801 Sequence Listing.TXT

<220>

<223> nucleotide sequence of h046-H10 (1)

<220>

<221> sig_peptide

<222> (1)..(57)

<400> 57

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gtgcagctgc agcagtctgg cgccgaactg gccaaacctg gcagcagcgt gaaggtgagc	120
tgcaaggcca gcggctacac cttcaccagc tactacatca gctggatcaa gcagaccacc	180
ggccaggggc tgaagtacat cggcttcac aaccccgga gcggccacac caactacaac	240
gagaagttca agggcaaggc caccctgacc gtggacaaga gcagcagcac cgccaacatg	300
cagctgtcca gcctgacccc cgacgacagc gccatctact actgtgctag aggcgctggc	360
ggcttcctgc ggatcatcac caagtctgac tactggggcc agggcgtgat ggtcaccgtc	420
agctcagcct ccaccaaggc ccaagcgtc ttccccctgg caccctctc caagagcacc	480
tctggcgcca cagccgccct gggctgcctg gtcaaggact acttccccga acccgtgacc	540
gtgagctgga actcaggcgc cctgaccagc ggcgtgcaca ccttccccgc tgtcctgcag	600
tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cctccagcag cttgggcacc	660
cagacctaca tctgcaacgt gaatcacaa cccagcaaca ccaagggtgga caagagagtt	720
gagcccaa at cttgtgacaa aactcacaca tgccccacct gccagcacc tgaactcctg	780
gggggacct cagtcttctt cttccccca aaacccaagg acaccctcat gatctcccg	840
acccctgagg tcacatgcgt ggtggtggac gtgagccacg aagaccctga ggtcaagttc	900
aactggtacg tggacggcgt ggaggtgcat aatgccaaga caaagccccg ggaggagcag	960
tacaacagca cgtaccgggt ggtcagcgtc ctaccgtcc tgcaccagga ctggctgaat	1020
ggcaaggagt acaagtgcaa ggtctccaac aaagccctcc cagcccccat cgagaaaacc	1080
atctccaaag ccaaaggcca gccccgggaa ccacaggtgt acaccctgcc cccatccccg	1140
gaggagatga ccaagaacca ggtcagcctg acctgcctgg tcaaaggctt ctatcccagc	1200
gacatcgccg tggagtggga gagcaatggc cagccccgaga acaactacaa gaccaccct	1260
cccgtgctgg actccgacgg ctcttcttct ctctacagca agctcaccgt ggacaagagc	1320
aggtggcagc agggcaacgt cttctcatgc tccgtgatgc atgaggctct gcacaaccac	1380
tacaccaga agagcctctc cctgtctccc ggcaaa	1416

<210> 58

<211> 234

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequece of h046-L1

<220>

FP1801 Sequence Listing.TXT

<221> SIGNAL
<222> (1)..(20)

<400> 58

Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser
1 5 10 15

Gly Ala Tyr Gly Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
20 25 30

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser
35 40 45

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

Lys Leu Leu Ile Tyr Ser Ala Ser Asn Leu Glu Ser Gly Val Pro Ser
65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95

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

Glu Leu Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
115 120 125

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
130 135 140

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
145 150 155 160

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
165 170 175

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
180 185 190

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
195 200 205

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
210 215 220

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230

<210> 59
<211> 702
<212> DNA

FP1801 Sequence Listing.TXT

<213> Artificial Sequence

<220>

<223> nucleotide sequence of h046-L1 (1)

<220>

<221> sig_peptide

<222> (1)..(60)

<400> 59

atggtgctgc agaccaggt gttcatctcc ctgctgctgt ggatctccgg cgcgtacggc	60
gacatccaga tgaccagag ccctagcagc ctgagcgcca gcgtgggcga cagagtgacc	120
atcacctgtc gggccagcaa gagcgtgtcc acctacatcc actggtatca gcagaagccc	180
ggcaaggccc ccaagctgct gatctacagc gccagcaacc tggaaagcgg cgtgcccagc	240
agatttttccg gcagcggctc tggcaccgac ttcaccctga caatcagcag cctgcagccc	300
gaggacttcg ccacctacta ctgccagcag atcaacgagc tgccctacac cttcggccag	360
ggcaccaagg tggaaatcaa gcgtacggtg gccgccccct ccgtgttcat cttccccccc	420
tccgacgagc agctgaagtc cggcaccgcc tccgtggtgt gcctgctgaa taacttctac	480
cccagagagg ccaaggtgca gtggaagggt gacaacgccc tgcagtccgg gaactcccag	540
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc	600
ctgagcaaaag ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc	660
ctgagctccc ccgtcaccaa gagcttcaac aggggggaggt gt	702

<210> 60

<211> 234

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of h046-L2

<220>

<221> SIGNAL

<222> (1)..(20)

<400> 60

Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser	
1 5 10 15	

Gly Ala Tyr Gly Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser	
20 25 30	

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser	
35 40 45	

Val Ser Thr Tyr Ile His Trp Tyr Gln Gln Lys Pro Gly Lys Gln Pro	
50 55 60	

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

FP1801 Sequence Listing.TXT

65		70		75		80
Arg	Phe	Ser	Gly	Ser	Gly	Ser
			85			90
				Asp	Phe	Thr
						Leu
						Thr
						Ile
						Ser
Ser	Leu	Gln	Pro	Glu	Asp	Phe
			100			Ala
						Thr
						105
						Tyr
						Tyr
						Cys
						Gln
						Gln
						110
						Ile
						Asn
Glu	Leu	Pro	Tyr	Thr	Phe	Gly
						Gln
						120
						Gly
						Thr
						Lys
						Val
						Glu
						125
						Ile
						Lys
						Arg
Thr	Val	Ala	Ala	Pro	Ser	Val
						135
						Phe
						Ile
						Phe
						Pro
						Pro
						Ser
						Asp
						Glu
						Gln
Leu	Lys	Ser	Gly	Thr	Ala	Ser
						150
						Val
						Val
						Cys
						Leu
						155
						Leu
						Asn
						Asn
						Phe
						Tyr
						160
Pro	Arg	Glu	Ala	Lys	Val	Gln
						165
						Trp
						Lys
						Val
						170
						Asp
						Asn
						Ala
						Leu
						Gln
						175
						Ser
Gly	Asn	Ser	Gln	Glu	Ser	Val
						180
						Thr
						Glu
						185
						Gln
						Asp
						Ser
						Lys
						Asp
						190
						Ser
						Thr
Tyr	Ser	Leu	Ser	Ser	Thr	Leu
						195
						Thr
						200
						Leu
						Ser
						Lys
						Ala
						Asp
						205
						Tyr
						Glu
						Lys
His	Lys	Val	Tyr	Ala	Cys	Glu
						210
						Val
						215
						Thr
						His
						Gln
						Gly
						220
						Leu
						Ser
						Ser
						Pro
Val	Thr	Lys	Ser	Phe	Asn	Arg
						225
						Gly
						Glu
						Cys
						230

<210> 61
 <211> 702
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> nucleotide sequence of h046-L2 (1)

<220>
 <221> sig_peptide
 <222> (1)..(60)

<400> 61	
atggtgctgc agaccaggt gttcatctcc ctgctgctgt ggatctccgg cgcgtacggc	60
gacatccaga tgaccagag ccctagcagc ctgagcgcca gcgtgggcga cagagtgacc	120
atcacctgtc gggccagcaa gagcgtgtcc acctacatcc actggtatca gcagaagccc	180
ggcaagcagc ccaagctgct gatctacagc gccagcaacc tggaaagcgg cgtgcccagc	240
agattttccg gcagcggctc tggcaccgac ttcaccctga caatcagcag cctgcagccc	300
gaggacttcg ccacctacta ctgccagcag atcaacgagc tgcctacac cttcgccag	360

FP1801 Sequence Listing.TXT

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ggcaccaagg tggaaatcaa gcgtacggtg gccgccccct ccgtgttcat cttccccccc      420
tccgacgagc agctgaagtc cggcaccgcc tccgtggtgt gcctgctgaa taacttctac      480
cccagagagg ccaaggtgca gtggaagggtg gacaacgccc tgcagtccgg gaactcccag      540
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc      600
ctgagcaaag ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc      660
ctgagctccc ccgtcaccaa gagcttcaac agggggggagt gt                          702

```

```

<210> 62
<211> 234
<212> PRT
<213> Artificial Sequence

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```

<220>
<223> amino acid sequence of h046-L6

```

```

<220>
<221> SIGNAL
<222> (1)..(20)

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```

<400> 62

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Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser
1           5           10           15

```

```

Gly Ala Tyr Gly Asp Thr Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser
20           25           30

```

```

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser
35           40           45

```

```

Val Ser Thr Tyr Ile His Trp Tyr Gln Gln Lys Pro Gly Lys Gln Pro
50           55           60

```

```

Lys Leu Leu Ile Tyr Ser Ala Ser Asp Arg Glu Ser Gly Val Pro Ser
65           70           75           80

```

```

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85           90           95

```

```

Ser Leu Gln Pro Glu Asp Phe Ala Asn Tyr Tyr Cys Gln Gln Ile Asn
100          105          110

```

```

Glu Leu Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
115          120          125

```

```

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
130          135          140

```

```

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
145          150          155          160

```

FP1801 Sequence Listing.TXT

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
165 170 175

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
180 185 190

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
195 200 205

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
210 215 220

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230

<210> 63
<211> 702
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-L6 (1)

<220>
<221> sig_peptide
<222> (1)..(60)

<400> 63
atgggtgctgc agaccaggt gttcatctcc ctgctgctgt ggatctccgg cgcgtacggc 60
gatacccagc tgacacagag ccctagcagc ctgtctgcca gcgtgggcga cagagtgacc 120
atcacctgtc gggccagcaa gagcgtgtcc acctacatcc actggatatca gcagaagccc 180
ggcaagcagc ccaagctgct gatctacagc gccagcgaca gagaaagcgg cgtgcccagc 240
agattttccg gcagcggctc tggcaccgac ttcaccctga caatcagcag cctgcagccc 300
gaggacttcg ccaactacta ctgccagcag atcaacgagc tgccctacac cttcggccag 360
ggcaccaagg tggaatatcaa gcgtacgggtg gccgccccct ccgtgttcat cttccccccc 420
tccgacgagc agctgaagtc cggcaccgcc tccgtggtgt gcctgctgaa taatttctac 480
cccagagagg ccaaggtgca gtggaagggtg gacaacgccc tgcagtccgg gaactcccag 540
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc 600
ctgagcaaag ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc 660
ctgagctccc ccgtcaccaa gagcttcaac agggggggagt gt 702

<210> 64
<211> 234
<212> PRT
<213> Artificial Sequence

<220>
<223> amino acid sequence of h046-L7

FP1801 Sequence Listing.TXT

<220>

<221> SIGNAL

<222> (1)..(20)

<400> 64

Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser
1 5 10 15

Gly Ala Tyr Gly Asp Thr Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser
20 25 30

Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Lys Ser
35 40 45

Val Ser Thr Tyr Ile His Trp Tyr Gln Gln Lys Pro Gly Lys Gln Pro
50 55 60

Lys Leu Leu Ile Tyr Ser Ala Gly Asn Leu Glu Ser Gly Val Pro Ser
65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
85 90 95

Ser Leu Gln Pro Glu Asp Phe Ala Asn Tyr Tyr Cys Gln Gln Ile Asn
100 105 110

Glu Leu Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg
115 120 125

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
130 135 140

Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
145 150 155 160

Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
165 170 175

Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
180 185 190

Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
195 200 205

His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
210 215 220

Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225 230

<210> 65

FP1801 Sequence Listing.TXT

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<211> 702
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-L7 (1)

<220>
<221> sig_peptide
<222> (1)..(60)

<400> 65
atgggtgctgc agaccaggt gttcatctcc ctgctgctgt ggatctccgg cgcgtacggc      60
gatacccagc tgacacagag ccctagcagc ctgtctgcca gcgtgggcga cagagtgacc      120
atcacctgtc gggccagcaa gagcgtgtcc acctacatcc actggtatca gcagaagccc      180
ggcaagcagc ccaagctgct gatctacagc gccggcaacc tggaaagcgg cgtgcccagc      240
agattttccg gcagcggctc tggcaccgac ttcacctga caatcagcag cctgcagccc      300
gaggacttcg ccaactacta ctgccagcag atcaacgagc tgccctacac cttcggccag      360
ggcaccaagg tggaaatcaa gcgtacggtg gccgccccct ccgtgttcat cttccccccc      420
tccgacgagc agctgaagtc cggcaccgcc tccgtggtgt gcctgctgaa taactttctac      480
cccagagagg ccaaggtgca gtggaagggt gacaacgccc tgcagtccgg gaactcccag      540
gagagcgtga ccgagcagga cagcaaggac agcacctaca gcctgagcag caccctgacc      600
ctgagcaaag ccgactacga gaagcacaag gtgtacgcct gcgaggtgac ccaccagggc      660
ctgagctccc ccgtcaccaa gagcttcaac agggggggagt gt                                702

<210> 66
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer Nhe-polyC-S

<220>
<221> misc_feature
<222> (37)..(37)
<223> n is a, c, g, or t

<400> 66
gctagcgcta ccggactcag atcccccccc ccccdn                                37

<210> 67
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer rIg gamma-AS1

<400> 67
tcactgagct ggtgagagtg tagagccc                                28

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FP1801 Sequence Listing.TXT

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<210> 68
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer rIg gamma-AS2

<400> 68
tcaccgagct gctgaggggtg tagagccc 28

<210> 69
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer rIg kappa-AS

<400> 69
tcaccgagct gctgaggggtg tagagccc 28

<210> 70
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer rIg gamma-seq

<400> 70
ctggctcagg gaaatagcc 19

<210> 71
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer rIg kappa-seq

<400> 71
tccagttgct aactgttcc 19

<210> 72
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer NFLAG-1

<400> 72
gactacaaag acgatgacga caagccctct gtgtctccag c 41

<210> 73
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer NFLAG-2

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FP1801 Sequence Listing.TXT

<400> 73
cttgtcgta tcgtctttgt agtccatggt ggagcctgc 39

<210> 74
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR Primer mEC2-1

<400> 74
acgcgcttcg ctgtgttcta cggcgccag 29

<210> 75
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC2-2

<400> 75
ctggcgccgt agaacacagc gaagcgcggt 29

<210> 76
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC3-1

<400> 76
tgtcgggtgct gggcgtgaag tcgggtggac gatcatgctg ccgtgtctt 49

<210> 77
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC3-2

<400> 77
aagacacggc agcatgatcg tccacccgac ttcacgcca gcaccgaca 49

<210> 78
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC4-1

<400> 78
tggcgctgtg gcccaacgta cctaagcaca cgagcctcgt ggt 43

<210> 79
<211> 43
<212> DNA
<213> Artificial Sequence

FP1801 Sequence Listing.TXT

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<220>
<223> PCR primer mEC4-2

<400> 79
accacgaggc tcgtgtgctt aggtacgttg ggccacagcg cca 43

<210> 80
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC1-1

<400> 80
gcgctgatgg cgggtgcacgg agccatct 28

<210> 81
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC1-2

<400> 81
agagggcatg gtggagcctg cttt 24

<210> 82
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC1-3

<400> 82
aggctccacc atgccctctg cgttgtctat ga 32

<210> 83
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer mEC1-4

<400> 83
caccgccatc agcgccttgcc acaggctggg gaaggaggct tgca 44

<210> 84
<211> 449
<212> DNA
<213> Homo sapiens

<400> 84
gcctccggac tctagagcca ccatgggtgct gcagaccag gtgttcatct ccctgctgct 60
gtggatctcc ggcgcgtacg gcgatatcgt gatgattaaa cgtacgggtgg ccgccccctc 120
cgtgttcatc ttccccccct cgcacgagca gctgaagtcc ggcaccgcct ccgtgggtgtg 180

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FP1801 Sequence Listing.TXT

cctgctgaat aacttctacc ccagagagggc caaggtgcag tggaaggtgg acaacgccct	240
gcagtccggg aactcccagg agagcgtgac cgagcaggac agcaaggaca gcacctacag	300
cctgagcagc accctgaccc tgagcaaagc cgactacgag aagcacaagg tgtacgcctg	360
cgaggtgacc caccagggcc tgagctcccc cgtcaccaag agcttcaaca ggggggagtg	420
ttaggggccc gtttaaacgg gggaggcta	449

<210> 85
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer 3.3-F1

<400> 85 tataccgtcg acctctagct agagcttggc	30
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<210> 86
 <211> 30
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PCR primer 3.3-R1

<400> 86 gctatggcag ggccctgccgc cccgacgttg	30
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<210> 87
 <211> 1132
 <212> DNA
 <213> Homo sapiens

<400> 87 gcctccggac tctagagcca ccatgaaaca cctgtggttc ttcctcctgc tgggtggcagc	60
tcccagatgg gtgctgagcc aggtgcaatt gtgcaggcgg ttagctcagc ctccaccaag	120
ggcccaagcg tcttccccct ggcaccctcc tccaagagca cctctggcgg cacagccgcc	180
ctgggctgcc tgggtcaagga ctacttcccc gaaccctga cctgtagctg gaactcaggc	240
gccctgacca gcggcgtgca caccttcccc gctgtcctgc agtcctcagg actctactcc	300
ctcagcagcg tgggtgaccgt gccctccagc agcttgggca cccagacctc catctgcaac	360
gtgaatcaca agcccagcaa caccaaggtg gacaagagag ttgagcccaa atcttgtgac	420
aaaactcaca catgcccacc ctgcccagca cctgaactcc tgggggggacc ctcagtcttc	480
ctcttcccc caaaacccaa ggacaccctc atgatctccc ggaccctga ggtcacatgc	540
gtgggtggtgg acgtgagcca cgaagaccct gaggtcaagt tcaactggta cgtggacggc	600
gtggaggtgc ataatgcaa gacaaagccc cgggaggagc agtacaacag cacgtaccgg	660
gtgggtcagcg tcctcaccgt cctgcaccag gactggctga atggcaagga gtacaagtgc	720
aaggtctcca acaaagccct cccagcccc atcgagaaaa ccatctcaa agccaaaggc	780
cagccccggg aaccacaggt gtacaccctg ccccatccc gggaggagat gaccaagaac	840

FP1801 Sequence Listing.TXT

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caggtcagcc tgacctgcct ggtcaaaggc ttctatccca gcgacatcgc cgtggagtgg      900
gagagcaatg gccagcccga gaacaactac aagaccaccc ctcccgtgct ggactccgac      960
ggctccttct tcctctacag caagctcacc gtggacaaga gcagggtggca gcaggggcaac    1020
gtctttctcat gctccgtgat gcatgaggct ctgcacaacc actacaccca gaagagcctc    1080
tccctgtctc ccggcaaatt agatatcggg cccgttttaa cggggggaggc ta              1132

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<210> 88
<211> 22
<212> DNA
<213> Artificial Sequence

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<220>
<223> PCR primer EG-Inf-F

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<400> 88
agctcccaga tgggtgctga gc                                             22

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<210> 89
<211> 22
<212> DNA
<213> Artificial Sequence

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<220>
<223> PCR primer EG1-Inf-R

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```

<400> 89
gggcccttgg tggaggctga gc                                             22

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<210> 90
<211> 24
<212> DNA
<213> Artificial Sequence

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<220>
<223> PCR primer CM-LKF

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<400> 90
ctgtggatct ccggcgcgta cggc                                             24

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```

<210> 91
<211> 30
<212> DNA
<213> Artificial Sequence

```

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<220>
<223> PCR primer 046L-R

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<400> 91
ggagggggcg gccacggctc tcttcagttc                                     30

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<210> 92
<211> 7
<212> PRT
<213> Artificial Sequence

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<220>
<223> amino acid sequence of h046-L6 CDRL2

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FP1801 Sequence Listing.TXT

<400> 92

Ser Ala Ser Asp Arg Glu Ser
1 5

<210> 93

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> amino acid sequence of h046-L7 CDRL2

<400> 93

Ser Ala Gly Asn Leu Glu Ser
1 5

<210> 94

<211> 408

<212> DNA

<213> Artificial Sequence

<220>

<223> DNA fragment A

<400> 94

agctcccaga tgggtgctga gccaggtgca gctggtgcag tctggcgccg aagtgaagaa	60
accaggcgcc agcgtgaagg tgtcctgcaa ggccagcggc tacaccttta ccagctacta	120
catcagctgg atccggcagg cccctggaca gggcctgaag tacatgggct ggatcaacct	180
tggcagcggc cacaccaact acaacgagaa gttcaagggc agagtgacca tcaccgccga	240
caagagcagc agcaccgcca ccatggaact gagcagcctg agaagcgagg acaccgccgt	300
gtactactgc gctagaggcg ctggcggctt cctgcggatc atcaccaagt tcgactactg	360
gggccagggc accctcgtga ccgtcagctc agcctccacc aagggcc	408

<210> 95

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer Hb-F

<400> 95

atcaaccctg gcagcgcca caccaactac	30
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<210> 96

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR primer Hb-R

<400> 96

gaagcccatg tacttcaggc cctgtccagg gg	32
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FP1801 Sequence Listing.TXT

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<210> 97
<211> 408
<212> DNA
<213> Artificial Sequence

<220>
<223> DNA fragment B

<400> 97
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accaggcgcc agcgtgaagg tgtcctgcaa ggccagcggc tacaccttta ccagctacta      120
catcagctgg atccggcagg cccctggaca gggcctgaag tacatgggct ggatcaaccc      180
tggcagcggc cacaccaact acaacgagaa gttcaagggc agagtgacca tcaccgccga      240
caagagcagc agcaccgcca acatggaact gagcagcctg cggagcgagg acaccgccgt      300
gtactattgt gctagaggcg ctggcggctt cctgcggatc atcaccaagt tcgactactg      360
gggccagggc accctcgtga ccgtcagctc agcctccacc aaggggccc      408


<210> 98
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> H08-F

<400> 98
aacatgcagc tgtccagcct gacccccgac gac      33


<210> 99
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> H08-R

<400> 99
ggcggtgctg ctgctcttgt ccacggtcag      30


<210> 100
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> H10-F

<400> 100
gtgagctgca aggccagcgg ctacaccttc acc      33


<210> 101
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> H10-R

```

FP1801 Sequence Listing.TXT

<400> 101
cttcacgctg ctgccaggct tggccagttc 30

<210> 102
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> PCR primer KCL-Inf-R

<400> 102
ggagggggcg gccaccgtac g 21

<210> 103
<211> 1416
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-H4b (2)

<220>
<221> sig_peptide
<222> (1)..(57)

<400> 103
atgaagcacc tgtggttctt tctgctgctg gtggccgctc ccagatgggt gctgtctcag 60
gtgcagctgg tgcagtctgg cgccgaagtg aagaaacctg ggcctccgt gaagggtgcc 120
tgcaaggcct ccggctacac ctttaccagc tactacatct cctggatccg gcaggcccct 180
ggacagggcc tgaagtacat gggcttcac aaccccggt ccggccacac caactacaac 240
gagaagttca agggcagagt gaccattacc gccgacaagt cctcctccac cgctaccatg 300
gaactgtcct ccctgcgagg cgaggacacc gccgtgtact actgtgctag aggcgctggc 360
ggcttcctgc ggatcatcac caagtctgac tactggggcc agggcacct cgtgaccgtg 420
tcctctgctt ctaccaaggg cccctccgtg ttccctctgg ccccttccag caagtctacc 480
tctggcggca cagccgctct gggctgcctc gtgaaggact acttccccga gcccgtagaca 540
gtgtcttgga actctggcgc cctgacctcc ggcgtgcaca catttccagc tgtgctgcag 600
tcctccggcc tgtactccct gtcctccgtc gtgactgtgc cctccagctc tctgggcacc 660
cagacctaca tctgcaacgt gaaccacaag ccctccaaca ccaagggtga caagcgggtg 720
gaaccaagt cctgcgacaa gaccacacacc tgtccccctt gtcctgcccc tgaactgctg 780
ggcggaccca gcgtgttcct gttccccca aagcccaagg acaccctgat gatctcccgg 840
acccccgaag tgacctgcgt ggtggtggat gtgtcccacg aggaccctga agtgaagttc 900
aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcctag agaggaacag 960
tacaactcca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ttggctgaac 1020
ggcaaagagt acaagtgcaa ggtgtccaac aaggctctgc ctgccccat cgaaaagacc 1080
atctccaagg ccaagggcca gccccgggaa cccaggtgt acacactgcc ccctagccgg 1140

FP1801 Sequence Listing.TXT

gaagagatga ccaagaacca ggtgtccctg acctgtctcg tgaaaggctt ctacccctcc	1200
gatatcgccg tggaatggga gtccaacggc cagcctgaga acaactacaa gaccaccccc	1260
cctgtgctgg actccgacgg ctcatcttc ctgtacagca agctgacagt ggacaagtcc	1320
cggtggcagc agggcaacgt gttctcctgc tccgtgatgc acgaggccct gcacaaccac	1380
tacaccaga agtccctgtc cctgagcccc ggcaaa	1416

<210> 104
 <211> 1416
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> nucleotide sequence of h046-H5b (2)

<220>
 <221> sig_peptide
 <222> (1)..(57)

<400> 104	
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gtgcagctgg tgcagtctgg cgccgaagtg aagaaacctg gcgcctccgt gaagggtgcc	120
tgcaaggctt ccggctacac ctttaccagc tactacatct cctggatccg gcaggccctt	180
ggacagggcc tgaagtacat gggcttcac aaccccggt ccggccacac caactacaac	240
gagaagttca agggcagagt gaccattacc gccgacaagt cctcctccac cgccaacatg	300
gaactgtcct ccctgcggag cgaggacacc gccgtgtact actgtgctag aggcgctggc	360
ggcttcctgc ggatcatcac caagttcgac tactggggcc agggcaccct cgtgaccgtg	420
tcctctgctt ctaccaaggg cccctccgtg ttccctctgg ccccttccag caagtctacc	480
tctggcgga cagccgtctt gggctgcctc gtgaaggact acttccccga gcccgtaga	540
gtgtcttgga actctggcgc cctgacctcc ggcgtgcaca catttccagc tgtgtgcag	600
tcctccggcc tgtactccct gtcctccgtc gtgactgtgc cctccagctc tctgggcacc	660
cagacctaca tctgcaacgt gaaccacaag ccctccaaca ccaagggtga caagcgggtg	720
gaaccaagt cctgcgacaa gaccacacc tgtccccctt gtcctgcccc tgaactgctg	780
ggcggaccca gcgtgttcct gttccccca aagcccaagg acaccctgat gatctcccgg	840
acccccgaag tgacctgcgt ggtggtggat gtgtcccacg aggacctga agtgaagttc	900
aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcctag agaggaacag	960
tacaactcca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ttggctgaac	1020
ggcaaagagt acaagtgcaa ggtgtccaac aaggccctgc ctgcccccat cgaaaagacc	1080
atctccaagg ccaagggcca gccccgggaa cccaggtgt acacactgcc ccctagccgg	1140
gaagagatga ccaagaacca ggtgtccctg acctgtctcg tgaaaggctt ctacccctcc	1200
gatatcgccg tggaatggga gtccaacggc cagcctgaga acaactacaa gaccaccccc	1260
cctgtgctgg actccgacgg ctcatcttc ctgtacagca agctgacagt ggacaagtcc	1320

FP1801 Sequence Listing.TXT

cggtggcagc agggcaacgt gttctcctgc tccgtgatgc acgaggccct gcacaaccac	1380
tacaccaga agtccctgtc cctgagcccc ggcaaa	1416

<210> 105
 <211> 1416
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> nucleotide sequence of h046-Hwt (2)

<400> 105	
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gtgcagctgc agcagtctgg cgccgagctg gctaagcctg gctcctccgt gaagatctcc	120
tgcaaggcct ccggctacac ctttaccagc tactacatct cctggatcaa gcagaccacc	180
ggccagggcc tgaagtacat cggcttcac aacccccggct ccggccacac caactacaac	240
gagaagttca agggcaaggc caccctgacc gtggacaagt cctcctccac cgccttcacg	300
cagctgtcct ccctgacccc tgacgactcc gccatctact actgcgctag aggcgctggc	360
ggcttcctgc ggatcatcac caagtctgac tactggggcc agggcgctgat ggtcaccgtg	420
tcctctgctt ccaccaaggg cccctccgtg tttcctctgg ccccttccag caagtccacc	480
tctggcgga cagccgctct gggctgcctc gtgaaggact acttccccga gcctgtgacc	540
gtgtcttgga actctggcgc cctgacatcc ggcgtgcaca ccttccctgc tgtgtgcag	600
tctagcggcc tgtactccct gtcctccgtc gtgaccgtgc cttccagctc tctgggcacc	660
cagacctaca tctgcaacgt gaaccacaag ccctccaaca ccaagggtga caagcgggtg	720
gaacccaagt cctgcgacaa gaccacacc tgtccccctt gtcctgcccc tgaactgctg	780
ggcggacctt ccgtgttcct gttccccca aagcccaagg ataccctgat gatctcccgg	840
acccccgaag tgacctgctg ggtggtggat gtgtcccacg aggaccctga agtgaagttc	900
aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcctag agaggaacag	960
tacaactcca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ttggctgaac	1020
ggcaaagagt acaagtgcaa ggtgtccaac aaggccctgc ctgcccccat cgaaaagacc	1080
atctccaagg ccaagggcca gccccgggaa cccaggtgt acacactgcc ccctagccgg	1140
gaagagatga ccaagaacca ggtgtccctg acctgtctcg tgaaaggctt ctaccctcc	1200
gatatcgccg tggaatggga gtccaacggc cagcctgaga acaactacaa gaccaccccc	1260
cctgtgtctg actccgacgg ctattcttc ctgtacagca agctgacagt ggataagagc	1320
cggtggcagc agggcaacgt gttctcctgc tccgtgatgc acgaggccct gcacaaccac	1380
tacaccaga agtccctgtc cctgagcccc ggcaaa	1416

<210> 106
 <211> 1416
 <212> DNA
 <213> Artificial Sequence

FP1801 Sequence Listing.TXT

<220>
<223> nucleotide sequence of h046-H8 (2)

<220>
<221> sig_peptide
<222> (1)..(57)

<400> 106
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gtgcagctgc agcagtctgg cgccgagctg gctaagcctg gtcctccgt gaagatctcc 120
tgcaaggcct ccggctacac ctttaccagc tactacatct cctggatcaa gcagaccacc 180
ggccagggcc tgaagtacat cggcttcac aaccccggt ccggccacac caactacaac 240
gagaagttca agggcaaggc caccctgacc gtggacaagt cctcctccac cgccaacatg 300
cagctgtcct ccctgacccc tgacgactcc gccatctact actgcgctag aggcgctggc 360
ggcttcctgc ggatcatcac caagttcgac tactggggcc agggcgatgat ggtcaccgtg 420
tcctctgctt ccaccaaggc cccctccgtg tttcctctgg ccccttccag caagtccacc 480
tctggcggaa cagccgctct gggctgcctc gtgaaggact acttccccga gcctgtgacc 540
gtgtcttgga actctggcgc cctgacatcc ggcgtgcaca cttccctgc tgtgtctcag 600
tctagcggcc tgtactccct gtcctccgtc gtgaccgtgc cttccagctc tctgggcacc 660
cagacctaca tctgcaacgt gaaccacaag ccctccaaca ccaagggtga caagcgggtg 720
gaaccaagt cctgcgacaa gaccacacc tgtccccctt gtcctgcccc tgaactgctg 780
ggcggacctt ccgtgttcct gttcccccca aagcccaagg atacctgat gatctcccgg 840
acccccgaag tgacctgcgt ggtggtggat gtgtccacg aggaccctga agtgaagttc 900
aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcctag agaggaacag 960
tacaactcca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ttggtgaac 1020
ggcaaagagt acaagtgcaa ggtgtccaac aaggccctgc ctgcccccat cgaaaagacc 1080
atctccaagg ccaagggcc accccgggaa cccaggtgt acacactgcc ccctagccgg 1140
gaagagatga ccaagaacca ggtgtccctg acctgtctcg tgaaaggctt ctaccctcc 1200
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cctgtgctgg actccgacgg ctcatcttc ctgtacagca agctgacagt ggataagagc 1320
cgggtggcagc agggcaacgt gttctcctgc tccgtgatgc acgaggccct gcacaaccac 1380
tacaccaga agtccctgtc cctgagcccc ggcaaa 1416

<210> 107
<211> 1416
<212> DNA
<213> Artificial Sequence

<220>
<223> nucleotide sequence of h046-H10 (2)

FP1801 Sequence Listing.TXT

<220>
 <221> sig_peptide
 <222> (1)..(57)

<400> 107
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 gtgcagctgc agcagtctgg cgccgagctg gctaagcctg gtcctctgt gaagggtgcc 120
 tgcaaggcct ccggctacac ctttaccagc tactacatct cctggatcaa gcagaccacc 180
 ggccaggggc tgaagtacat cggtttcatc aaccccggtc ccggccacac caactacaac 240
 gagaagttca agggcaaggc caccctgacc gtggacaagt cctcctccac cgccaacatg 300
 cagctgtcct ccctgacccc tgacgactcc gccatctact actgcgctag aggcgctggc 360
 ggcttcctgc ggatcatcac caagttcgac tactggggcc agggcgatgat ggtcaccgtg 420
 tcctctgctt ccaccaaggc cccctccgtg tttcctctgg ccccttccag caagtccacc 480
 tctggcgga cagccgctct gggctgcctc gtgaaggact acttccccga gcctgtgacc 540
 gtgtcttgga actctggcgc cctgacatcc ggcgtgcaca ccttccctgc tgtgctgcag 600
 tctagcggcc tgtactccct gtcctccgtc gtgaccgtgc cttccagctc tctgggcacc 660
 cagacctaca tctgcaacgt gaaccacaag ccctccaaca ccaagggtga caagcgggtg 720
 gaaccaagt cctgcgacaa gaccacacc tgtccccctt gtcctgcccc tgaactgctg 780
 ggcggacctt ccgtgttcct gttccccca aagcccaagg ataccctgat gatctcccg 840
 accccgaag tgacctgcgt ggtggtggat gtgtcccacg aggaccctga agtgaagttc 900
 aattggtacg tggacggcgt ggaagtgcac aacgccaaga ccaagcctag agaggaacag 960
 tacaactcca cctaccgggt ggtgtccgtg ctgaccgtgc tgcaccagga ttggtgaac 1020
 ggcaaagagt acaagtgcaa ggtgtccaac aaggctctgc ctgcccccat cgaaaagacc 1080
 atctccaagg ccaagggcc accccgggaa cccaggtgt acacactgcc ccctagccgg 1140
 gaagagatga ccaagaacca ggtgtccctg acctgtctcg tgaaaggctt ctaccctcc 1200
 gatatcgccg tggaatggga gtccaacggc cagcctgaga acaactacaa gaccaccccc 1260
 cctgtgctgg actccgacgg ctcatcttc ctgtacagca agctgacagt ggataagagc 1320
 cggtggcagc agggcaacgt gttctcctgc tccgtgatgc acgaggccct gcacaaccac 1380
 tacaccaga agtccctgtc cctgagcccc ggcaaa 1416

<210> 108
 <211> 702
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> nucleotide sequence of h046-L1 (2)

<220>
 <221> sig_peptide
 <222> (1)..(60)

<400> 108

FP1801 Sequence Listing.TXT

atggtgctgc agacccaggt gttcatctcc ctgctgctgt ggatctccgg cgcctacggc	60
gacatccaga tgacccagag cccttcagc ctgtccgctt ccgtgggcga cagagtgacc	120
atcacctgtc gggcctccaa gtccgtgtcc acctacatcc actggtatca gcagaagccc	180
ggcaaggccc ccaagctgct gatctactcc gcctccaacc tggaatccgg cgtgccctcc	240
agattctccg gctctggctc tggcaccgac tttaccctga ccatctccag cctgcagccc	300
gaggacttcg ccacctacta ctgccagcag atcaacgagc tggcctacac cttcggccag	360
ggcaccaagg tggaaatcaa gcggaccgtg gccgctccct ccgtgtttat cttcccaccc	420
tccgacgagc agctgaagtc cggcacagct tctgtcgtgt gcctgctgaa caacttctac	480
ccccgcgagg ccaagggtgca gtggaagggtg gacaacgccc tgcagtccgg caactcccag	540
gaatccgtga ccgagcagga ctccaaggac agcacctact ccctgtcctc caccctgacc	600
ctgtccaagg ccgactacga gaagcacaag gtgtacgcct gcgaagtgaac ccaccagggc	660
ctgtctagcc ccgtgaccaa gtctttcaac cggggcgagt gc	702

<210> 109
 <211> 702
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> nucleotide sequence of h046-L-2 (2)

<220>
 <221> sig_peptide
 <222> (1)..(60)

<400> 109	
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gacatccaga tgacccagag cccttcagc ctgtccgctt ccgtgggcga cagagtgacc	120
atcacctgtc gggcctccaa gtccgtgtcc acctacatcc actggtatca gcagaagccc	180
ggcaagcagc ccaagctgct gatctactcc gcctccaacc tggaatccgg cgtgccctcc	240
agattctccg gctctggctc tggcaccgac tttaccctga ccatctccag cctgcagccc	300
gaggacttcg ccacctacta ctgccagcag atcaacgagc tggcctacac cttcggccag	360
ggcaccaagg tggaaatcaa gcggaccgtg gccgctccct ccgtgtttat cttcccaccc	420
tccgacgagc agctgaagtc cggcacagct tctgtcgtgt gcctgctgaa caacttctac	480
ccccgcgagg ccaagggtgca gtggaagggtg gacaacgccc tgcagtccgg caactcccag	540
gaatccgtga ccgagcagga ctccaaggac agcacctact ccctgtcctc caccctgacc	600
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ctgtctagcc ccgtgaccaa gtctttcaac cggggcgagt gc	702

<210> 110
 <211> 702
 <212> DNA
 <213> Artificial Sequence

FP1801 Sequence Listing.TXT

<220>
<223> nucleotide sequence of h046-L6 (2)

<220>
<221> sig_peptide
<222> (1)..(60)

<400> 110
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gatacacagc tgaccagag cccttcagc ctgtctgctt ccgtgggcga cagagtgacc 120
atcacctgtc gggcctccaa gtccgtgtcc acctacatcc actggtatca gcagaagccc 180
ggcaagcagc ccaagctgct gatctactct gcctccgacc gcgagtctgg cgtgccctct 240
agattctccg gctctggctc tggcaccgac ttaccctga ccatctccag cctgcagccc 300
gaggacttcg ccaactacta ctgccagcag atcaacgagc tgccctacac cttcggccag 360
ggcaccaagg tggaaatcaa gcggaccgtg gccgctccct ccgtgtttat cttcccaccc 420
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ccccgcgagg ccaaggtgca gtggaagggtg gacaacgccc tgcagtccgg caactcccag 540
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FP1801 Sequence Listing.TXT

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